Summary Report of Best Practices

Outcome of phase 1 of the work of the Special Group for developing a common Union Toolbox for connectivity

16/10/2020-20/12/2020

1. INTRODUCTION

The Special Group for developing a common Union Toolbox for connectivity was set up pursuant to the Commission Recommendation (EU) 2020/13071 ("Recommendation") in October 2020. The work of the Special Group is divided in two phases. In the first phase the aim is to collect and exchange information from all Member States on best practices for a fast VHCN deployment with a focus on the reduction of the costs of network deployment and the investment-friendly authorisation of radio spectrum for 5G (Recommend (4)). The contributions of the Member States would serve as a basis for the second phase: the creation of a common Union toolbox of best practices (Recommend (5)). For phase 1 a questionnaire with 26 questions has been developed and circulated in order to identify best practices in the own Member State and in other Member States or non EU-countries.

The two sub-groups created for the purpose of examining both topical subjects of the Toolbox (i.e. the sub-group Cost Reduction and the sub-group 5G Radio Spectrum) dealt with the issues over the course of three meetings. The sub-group on cost reduction discussed questions 1 to 19 of the questionnaire. The sub-group on spectrum issues dealt with questions 21 to 25. Questions 20 and 26 are subject to both sub-groups.

Member States participated actively in the process of phase 1 and delivered written inputs to the questionnaire in a constructive and highly appreciated way. Member States have responded and given factual information and best practices to the specific questions. Regarding several issues, the situation in the Member States with regard to the applicable law, the distribution of competences and the market situation appears to be diverse. At the same time, some trends with regard to the answers to some questions can be identified.

The Special Group, including its sub-groups, sought input also from the Radio Spectrum Policy Group (RSPG) and the Body of European Regulators for Electronic Communications (BEREC) (see section 11). The national regulatory authorities (NRAs), the Broadband Competence Offices network as well as the competent authorities in charge of the functions of the single information point were deemed to be involved in step 1 of the Connectivity Toolbox process directly via their relevant Member States.

[1] Commission Recommendation (EU) 2020/1307 of 18 September 2020 on a common Union toolbox for reducing the cost of deploying very high capacity networks and ensuring timely and investment-friendly access to 5G radio spectrum, to foster connectivity in support of economic recovery from the COVID-19 crisis in the Union, OJ L 305, p. 33, 21.09.2020.

As outcome of phase 1, all the information gathered by Member States and involved bodies has been put together in a mere compilation structured by question (annex to the report). In addition, this summary report presents general information on the received contributions, describes common trends and provides some examples. At this stage in phase 1 no evaluation of the inputs of the Member States was done.

The summary report and especially the compiled inputs from all Member States, RSPG and BEREC in the annex will form the basis for the qualification of best practices for the toolbox in phase 2, to which Member States are invited to actively contribute.

2. STREAMLINING PERMIT GRANTING PROCEDURES

Q1: The legal situation with regard to the physical deployment of digital infrastructure varies a lot amongst Member States. While telecommunications law (including rights of way) lies in all Member States within the competence of the national state, other laws applicable (building, urban planning, environmental protection, water, agricultural use, heritage protection, archaeological sites and cultural protection, road safety) may lie in different competences (state, federal, regional, local provisions). (Central law mentioned by 8 MS; Central and local law mentioned by 7 MS; Central, federal/regional and local law mentioned by 4 MS.)

Q2: In most Member States various prior permits need to be acquired in order to deploy electronic communications infrastructure (explicitly mentioned by 14 MS). The local authorities are mostly responsible for permit granting (explicitly mentioned by 20 MS). In some Member States the NRA is involved in the permit granting (mentioned by 3 MS). While only very few Member States introduced a permit exempt regime for telecommunications infrastructure in general (1 MS with regard to movable infrastructure, 1 MS with regard to fibre) there are some more Member States which provide a permit free regime with regard to certain minor projects (antenna systems up to a certain height, facilities up to a certain size, reconstruction of existing sites, in-building works) (this was mentioned by 5 MS). Two Member States provide a centralized management for permit granting.

Rights of way with regard to public property are granted either in an administrative application procedure (mostly the case with regard to public roads) or based on contractual agreements (applicable in 2 MS outside roads, or waterways; contractual basis only in 4 MS). In case of an administrative procedure rights of way are granted by the authority (local, regional, federal, national) responsible for the maintenance of the respective property (9 MS). Rights of way with regard to private property are mostly based on contractual agreements.

Q3 (Recommends 8(a)): The Recommendation identifies tacit approval as a possibility to guarantee that the four-month deadline is observed.

The legal framework of 9 out of 26 Member States already considers this mechanism. Some Member States use this tool for specific situations, while others make general use of it. Deadlines vary among Member States. A summary is found in the next table:

Case	MS	Deadline[2] (months)
General use	2	4, 3
Installation of fixed infrastructures	1	1
Rights of way granting	3	2, 3, 1
Private domain	2	4, 3
Deployment plans[3]	1	3

The legal framework of the remaining Member States does not provide for tacit approval. The reasons provided in this regard are diverse: large number of situations providing permit exemptions, unsuccessful experiences with tacit approvals, disagreement with the attribution of "best" feature to the tacit approval practices or absence of current delays at permit granting. Also, some Member States have reported certain constitutional constraints in order to set tacit approvals (in particular, when public domain is involved).

Member States have also identified some factors that could introduce delays that are related to the practice of tacit approvals. First of all, the completeness of applications seems to be an important factor to avoid procedural delays. In order to address this, it has been suggested to tacitly consider the application complete when the competent authority has not been able to raise objections within one month of its reception. It has also been suggested that a one-stop-shop electronic platform implementing the whole permit granting procedure, would be helpful at facilitating the monitoring of the timing. Additionally, it has been identified that, in the case of rights of way allocation, when a binding report from an additional competent authority is needed, a tacit approval on such binding reports would help to unlock the procedure and accelerate deadlines.

Q4 (Recommends 8(b)): Concerning practises to simplify and streamline permit granting procedures, most of the Member States have reported permit exemptions or streamline permit granting procedures. The cases where Member States foresee permit exemptions are diverse[4]. In some cases, the permit exemption is replaced by a notification. Some of them may be highlighted:

Case	MS
Associated network elements (boxes, conduits…)	1
Masts/cabinets/antennas/cables satisfying certain criteria[5]	11
Minor works	2 regarding rights of way, 1 under conditions
Technical innovation/Technical adaptation on existing masts/supports	2

[2] Please note that some Member States foresee situations where deadlines may be shorter.

[3] A Deployment Plan is a document describing a full set of elements integrating radio or fixed networks. Once it is approved (3 months, tacit approval), every element contained in it (radio stations, optical fibre layouts etc.), shall be authorized by single notification. Its use is intended for private domain only.

[4] Please note that the exercise of authorizing a certain infrastructure may involve several authorities in certain Member States. This means that the exemption of one authorization may not imply the exemption of another. Some exemptions regarding spectrum authorizations have also been notified

[5] These criteria are usually based on mast/antenna characteristics (height, area, colors), kind of works needed for the deployment, nature of cables (underground, overhead) and use of land (rural, non-urban, etc.)

Infrastructure contained in framework agreements	2
Cable deployment on electricity poles	3
Certain categories of infrastructure (optical fibre, cables under certain conditions)	4
Deployments on already existing physical infrastructure	3
Building permit exemption for the majority of electronic communication networks	1

Q9: Besides, Member States have put in place other fast track mechanisms to simplify and streamline permit granting procedures, although these mechanisms are less common than permit exemptions. Some of them include new legislation that significantly reduces procedures and deadlines (2 MS), the use of deployment plans in private domain (1 MS) or an option for faster environmental assessments (1 MS).

Q10: Finally, Member States have identified other practises that, in their experience, could be useful to simplify and streamline permit granting procedures. Among them:

- Web portals containing information about required permits for telecom operators.
- Online portal aimed at municipalities (it may be integrated with the SIP) containing information on how the legal framework must be applied at municipal level.
- Dedicated staff in municipalities, acting as a single contact with operators.
- Set of materials aimed at municipalities describing procedures and best practices to speed up and ease the procedures. Training plans for municipal services regarding telecommunications legal framework and related fast-track procedures.
- Model of municipal regulation on electronic communication network deployment that would allow the standardization of local regulations, including fast-track procedures.
- Streamline granting procedures subject to certain technical compliance from the operators. These technical requirements should be reflected in a code of best practices.

Q5 (Recommends 8(c)): As regards the establishment of the SIP as a single entry point for submitting applications for all the necessary permits, the right to submit applications by electronic means and the use of the SIP to coordinate and monitor permit granting procedures at all administrative levels, Member States have reported quite different procedures, depending mainly on the distribution of competences..

In many Member States permits are issued by local government (20 MS), so in most cases a single information point for submitting all applications does not exist and the functions of SIP as defined under Article 7 of BCRD (permit-granting procedure) are performed by local municipalities (mentioned by 17 MS): in these cases, SIP's task is generally to collect, process and store information on existing and planned infrastructure and to make this information available in electronic form; in some cases the SIP also publishes on its website the relevant information on the conditions and procedures relating to the granting of construction permits required and the list of operators potentially impacted by the work.

Q6 (Recommends 8(d)): As regards the establishment of the SIP as a single entry point for submitting applications for permits, some Member States declared the existence of SIP at national level (4 MS) while others are implementing it (2 MS) or have plans to do so (1 MS).

Some best practices can be also identified as regards electronic means and coordination: handling of permits procedures by means of electronic platforms at national level or local level ; coordination done directly by the local authority; coordination of the civil works preliminary or contextual to the formal application; mandatory consultation with public utility companies and operators affected by the work.

More generally one Member States suggested as best practice model of SIP for submitting application, both for civil works and electronic communications infrastructures installation, the EUGO portal model: telecom operator would submit its permit request/deployment plan through a single notification to the SIP; the competent authority addressed would process the request, asking directly to the other authorities concerned for their inputs; at the end of the process competent authorities would deliver their decisions through the SIP; SIP could also interact with e-administration tools in order to deliver notifications and monitor deadlines in order to accomplish with legal periods and tacit approvals. This procedure is very similar to that indicated as best practice by another Member State, related to the SUAP.

Q7 (Recommend 9): As regards facilitating granting of rights of way, 24 answers were submitted out of which 17 referred to some kind of best practice approach. It was highlighted by some Member States that rights of way are fully or partly granted on a commercial basis. Three Member States highlight that several different authorities are involved in the processes. With regard to administrative procedures for granting rights of way three Member States already implemented a tacit approval procedure with a deadline of 1-4 months. A one-stop-shop-procedure with a single decision applies in three Member States as far as the competences for granting rights of way and granting permits lie within the same authority. In some Member States building permits and rights of way can be applied for in parallel while in other Member States acquiring rights of way is a precondition for civil construction permits (explicitly mentioned by 2 MS). Two Member States highlight that short individual deadlines for permits and rights of way ensure keeping the deadline of four months. While only one Member State envisages implementing on a legal basis a one-stop-shop for rights of way and certain other permits even in cases where different authorities are involved, three Member States provide for joint coordinated procedures on a rather factual basis (broadband-coordinators, joint conference of administrations, joint on-site meetings).

Q8 (Recommend (10)): As regards fees charged for the granting of permits for civil works, 21 Member States responded to this question, Out of those 21 responses, 18 answers can be regarded as a description of best practices in a broader sense (i.e. including description of status quo). It was mostly regarded as best practice if the horizontal law provides that any fees should be proportionate and only cover the administrative costs (7 MS). Only one Member State mentioned that it faces problems with regard to ensuring proportionate cost based fees. Three Member States established fixed fees for certain kinds of permits, while others do not charge any fees for certain permits (either in general or with regard to VHCN). One Member State mentioned that certain municipalities switched with regard to their fees for civil works permits for fibre networks in rural areas from calculation fees based on the linear meter deployed to a calculation based on the home connected. Six Member States mentioned that they calculate fees based on the administrative costs incurred and not based on the construction costs).

3. IMPROVING TRANSPARENCY THROUGH THE SINGLE INFORMATION POINT

Q11: There are different situations reported in the Member States since SIP tasks could be covered by one or more bodies. Regarding transparency concerning physical infrastructures (PI) there is in each Member State at least one competent body assigned with the SIP function. In this aspect, the telecom NRA was the competent body assigned in 12 Member States, and a Ministry or Federal authority in 5 Member States. In 2 Member States the NRA shares the SIP function with other bodies. In 7 Member States the SIP was assigned to other bodies (e.g. energy agency, e-utility, and road, planning/mapping or local authorities). Bodies indicated with the SIP function, have to gather, from many different sectors, information on physical infrastructures, which requires a strong coordination in collecting and integrating that data. In addition, SIP's usually don't perform tasks related to permit granting.

Q12 (Recommend 11): Regarding integration/sharing of information (and coordination permit granting):

- single information repository populated with repositories of information of different bodies.
- collect data on PI and on civil engineering projects of different sectors, public bodies (e.g. municipalities, ministries) and integrate data on funded infrastructure projects.
- integrate all information regarding shareable infrastructures (including for small cells), broadband roll-out, future network roll-out, construction sites and public sector properties, into a single data portal (Web Geographic Information System - GIS Tool).
- aggregate all PI data from entities holders of such information throughout national territories (i.e. structured as a territorial information system), being entrusted with the collection, organization and use of data, and share all the collected data to accredited/registered entities.
- common interface to interconnect different platforms of public administrations (for processing permits applications) - technical requirements for this must be specified.

Regarding the availability of georeferenced information (maps/digital models):

- geo-information system accessible via browser, including georeferenced information of (i) public held PI (ii) optical fibre networks (iii) coverage levels, with economic data on investments, including ongoing tenders or public aids on different areas.
- use of Web Mapping Service (WMS) and Web Feature Service (WFS) technologies, data available through web-based geospatial information services, which can serve data requests real time through online data links. PI presented on map interface based on Open Street Map and incorporate basemap layers from land registry and national orthophoto database.
- georeferenced geometric data on the infrastructure above and below ground, both private and public. All the data collected are made available through visualization services.
- preloading of geometric information related to the land register in addition to the administrative limits at regional, provincial and municipal level.

- all PI registration objects characterized by their administrative location and geo-referenced coordinates, by using a unique reference system (and the conversion to it), transfer formats, metadata, base cartography, administrative delimitation information and toponymy codification.
- georeferenced information system accessible via browser or Representational state transfer (REST) interface including scalable maps, forming a uniform geographical topographical basis for the location of planned civil works and possible coordination requests during the construction.

Q14 (Recommend (12)): Regarding SIP functionalities beyond BCRD minimum requirements:

- geo-referenced geometry data modelled as points, lines or areas, information on locational accuracy, information on the timeliness of data, industry affiliation of the infrastructures, information of installations using public funding for broadband roll-out, email and phone of the person designated in relation with the shared use of infrastructures (in the future also broadband roll-out, future network roll-out, construction sites and public sector properties).
- information on aboveground, according to various layers provided by the INSPIRE Directive (e.g. roads, railways, buildings, artifacts - address management, toponyms and house numbers; orography - digital terrain models) this information is gathered from local geotopographic databases (spatial planning tool of regional/local authorities), into the unique database SINFI;
- provision of active network infrastructures location and property of underground cables, including shareable pipes;
- digital maps models (vectorial, raster and satellite views);
- provision of "state of occupation" field, allowing filling with indicative information (%) of capacity.

Q13 (Recommend (12)): Providing information on minimum set of data concerning physical infrastructure has not been fully put into effect across all Member States, so generally we can divide the current situation into three categories:

- Ten Member States have made mandatory obligation for all (public and private) network owners and operators to provide the data in question via operable SIP.
- In some Member States, public sector bodies are excluded from former obligation or the obligation is not mandatory, following different reasons, usually because of the unavailable data, but information can be provided upon request if available.
- Three Member States have implemented legal mechanisms, but the functionality of their SIP is not completed.

Legal mechanisms, which ensure information from public sectors bodies is available via SIP, are in most cases built into a national or federal Act (TCA, ECA, Building Act or separate Act that is direct transposition of BCRD) or federal provisions. Concerning technology, other than providing data to SIP, some Member States approve other means of informing, such as municipality or operator webpage.

Q15 (Recommend (13)): With regard to the requirement for network operators for making information on existing physical infrastructure available to other operators via SIP in electronic format, the situation is as follows:

- Required and available (7 MS)
- Required, but unavailable (2 MS)
- Not required, but available (3 MS)
- Not required and unavailable (4 MS)
- No info (5 MS)

Q16 (Recommends (11) - (13)): With regard to other mechanisms to improve Q16

- Sharing aggregated data on infrastructure to BCO's and other initiatives.
- Publicly shared list of civil engineering projects.
- Addressing environmental concerns through antenna certificates and site sharing.
- Sharing information beyond Article 4 para. 1 for all network operators regarding total and spare capacity (taking into account of 5G deployment) and usability of each infrastructure.
- Switching from WebGIS information services to WMS or when possible WFS, making data manipulation more convenient.
- Launching an Expert Working Group to discuss and tackle the various problems and issues.
- Providing other useful data such as gas and electricity cables and ducts, transformer stations and street furniture, detailed topographic maps that can include infrastructures and objects such as buildings, roads, bridges, railways, waterways, flood defenders, dikes, electrical grids, high-voltage pylons, wells and street cabinets.
- Synergy with geographical broadband survey.

4. EXPANDING THE RIGHT OF ACCESS TO EXISTING INFRASTRUCTURE

Q17 (Recommend (14)): Regarding procedures adopted or planned in relation to the expansion of access rights to PI controlled by public bodies (including street furniture), which is suitable to rollout VHCN, Member States presented several best practices:

- Rights of way in public properties free of charge.
- The free-of-charge use of masts of public lighting, parking guidance and information systems.
- Definition of rules allowing operators to deploy small-cells on PI and street furniture controlled by public and private authorities and centralization of the management of large share of state-owned buildings/properties (easier to inquire about leases). *(Possible constraint on expanding access indefinitely: Need for a security clearance and/or an escort in access to certain buildings occupied by authorities dealing with sensitive matters for work on the antennas.)*
- Inclusion in new urban projects of PI that will be available to operators on transparent and non-discriminatory basis, definition of protocols and conditions to give access to street furniture, collaboration agreements between municipalities and operators,

indication by the municipality of a company (a neutral network) to manage the access to PI and/or dark fibre.

- Objects owned or managed by the central government are available for the implementation of antenna installations by mobile telecom operators. This concerns office buildings, sites and structures such as bridges, locks and road portals.
- Foresee in in-building regulations the capacity for the rooftop to receive 5G FWA accesses. Detailed criteria like antenna volume, aesthetics and radiation level for the access to street furniture with the specific purpose to install small cells.
- Mandatory sharing of physical infrastructure controlled by public bodies.

In addition to the above, Member States presented a number of practices that could facilitate the expansions of access rights:

- Permit exemptions for placing antennas on existing buildings and street furniture.
- Role of Broadband Competence Office (BCO) as a moderator between operators and municipalities.
- The publication of construction and connection concepts by public ways authorities, a model agreement regime to regulate the access to local authority support structures, a list of all state-owned properties (radio communication sites of authorities and organisations).
- Compatibility of ECN elements (small cells) with low voltage regulation, definition of technical solutions for all kind of buildings useful for small cell deployment.
- Standard contracts/procedures for, and/or centralised management of access requests to physical infrastructure controlled by public bodies.

5. DISPUTE RESOLUTION MECHANISM

Q18 (Recommend (15): As regards the improvement of the dispute resolution mechanism in regard to disputes related to access to physical infrastructure and the functioning of dispute resolution bodies, 23 Member States have contributed to this question.

In the majority of Member States, the NRA is the DSB (21 MS). In one country, the DSB is another competent authority. In five Member States there are (in some cases, mandatory) alternative dispute resolution mechanisms, or formal or informal meetings with the parties, with the aim to find a timely mutual agreement under guidance of the NRA, having one Member State highlighted the high percentage of the agreements reached between parties during the proceedings.

The notification and the communications with parties are, in a few cases, usually made electronically, speeding up the process (2 MS). Sometimes oral hearings on the spot when resolving the dispute over access to the in-building physical infrastructure are made.

Few Member States have mentioned the realization of workshops or the publishing of procedures that would be used in the event that a dispute arises that increases awareness of the stakeholders. Also, four Member States have mentioned that they have published guidelines on prices. Some Member States have signalled the reduced number of disputes about access to physical

infrastructure. Some Member States have indicated the deadlines for dispute resolutions (specified in the BCRD), the binding nature of the decisions and the publication of the decisions regarding dispute settlements, which they refer might contribute to clarify the stakeholders. In other cases a great deal of the cases resolved by the DSB has been appealed, adding some years before there is a legally binding judgement.

6. ENVIRONMENTAL ASPECTS

Q19 (Recommend (16)): As regards incentivising the deployment of electronic communications networks with a reduced environmental footprint, 15 Member States provided inputs on this question. Three Member States mentioned that they are currently analysing actions to reduce environmental impact. Two Member States mentioned the development of an environmental strategy for the information and communications technology (ICT) sector. They highlighted the need to work on the development of comparable measurements of this sector's environmental impact. One Member State suggested the design of a multi-criteria assessment of the environmental sustainability of future networks which would assess operational energy consumption, gas emissions and waste, and green energy. Two Member States recognised the complexity to set common criteria.

Two Member States highlighted some interesting ongoing initiatives at EU level such as BEREC and RSPG working groups related to the environmental impact of the sector. One Member State emphasized the relevance of self-regulation measures such as ETNO Environmental Charter.

Some concrete measures highlighted in the replies are:

- infrastructure construction and sharing measures:
  - share physical structures;
  - promote micro trench techniques that limit environmental impact;
  - multi-operator sites;
  - stricter regulation to install networks on the forest, protected areas and cultural heritage sites;
  - cooperation with non-governmental organizations (NGO) to assess the environmental impact;
- network's energy consumption:
  - incentivise the use of sustainable energy sources;
  - subsidies for solar power installations;
  - incentivise the use of network energy-efficient equipment;
  - incentivise network optimisation through artificial intelligence;
  - foster the replacement of copper networks by more energy-efficient fibre networks;
- optimising resources measures:
  - use of recycled plastic to build pipes for fibre deployment;
  - recycle copper and other network equipment after its dismantling.

Q20 (Recommend (17)): As regards performing and taking account of the results of environmental impact assessments, nine Member States indicate that there is either no best practice identified or give no answer to this question.

Eight Member States indicate that there is no obligation to carry out an environmental assessment at the time of granting rights or issuing licences for spectrum use. At the time of granting rights or issuing licences for spectrum use, the prerequisites for the application of the said directives do not seem to be fulfilled.

With respect to the environmental screening for the installations of masts/installations there are mixed situations:

- environmental regulations may apply to the phase when operators are rolling out their networks, mentioned by eight Member States;
- generally, no environmental assessment - except where rules on cumulation apply for installations, mentioned by two Member States.

Some countries remain very general in their comments. One Member State indicates that it has published guidelines which address key areas of each planning stage. Another Member State states that the assessment of the project's impact on the area must be described in the environmental consequence report.

Some Member States refer to climate neutrality, sustainability and how the sector's climate and environmental footprint can be reduced.

Five Member States give a possible link with the habitat directive. A case-by-case examination could be required. In one Member State, a permit in accordance with the Environmental Assessment Act cannot be granted if the rules in the Administrative Order on Habitats hinder this.

Three Member States mention the problem of human exposure. An EMF-evaluation can be part of a local assessment of a given installation.

There are two ongoing court cases form organisations demanding an a priori environmental assessment.

7. SPECTRUM – FINANCIAL INCENTIVES FOR INVESTMENT

Q21-22 (Recommend (20)): The next sections describe specific measures which Member States consider to be best practices, including those which have been implemented or are planned for implementation at national level, when authorising radio spectrum in the 700 MHz, 3.4-3.8 GHz and 24.25-27.5 GHz frequency bands with a view to core aspects given below.

Adequate reserve prices

26 Member States and the observer country have provided substantial answers to Q21a. The majority of the answers have mentioned that reserve prices were established having a benchmarking exercise as input, adjusted to take into account the country specificities, such as

population, licence duration and coverage obligations and in some cases with the exclusion of outlier cases. In some cases, some validations are performed against the benchmarking exercise. Financial valuation models modelling the discounted cash flows and econometric models using mathematics and statistics to construct a multi-variable explanatory model for estimating the value of spectrum were also identified. One Member State also referred that reserve prices were justified in the light of the technical-economic characteristics of the radio frequencies subject to the selection procedure. Another method was to model the cost reductions that can be achieved by acquiring extra spectrum. One Member State stressed the importance to consult external experts before setting reserve prices. Three Member States have also mentioned that reserve prices should take into account the usability of awarded spectrum as well as the possibility of alternative use.

Some Member States specifically indicated the following objectives, in establishing the reserve prices:

- to avoid revenue maximization at the expense of network investment;
- to encourage investment through low reserve prices but obliging operators to invest in improving mobile coverage and enabling broadband connectivity in areas which are currently poorly covered or not covered at all;
- to achieve costs for using the spectrum that reflect its estimated value of spectrum and the optimal use of resources;
- to promote roll-out of 5G networks by imposing coverage obligations which are taken into account when setting the reserve prices;
- to maximize the long-term societal value of the spectrum use;
- to prevent hindering the development of innovative services and competition in the market;
- to prevent auction from speculators and/or collusion by not defining a reserve price that is too low;
- to allow discovering the spectrum value by defining reserve prices that are not too high.

Other Member States have identified the reserve price in the 5G pioneer bands which were auctioned or in previous auctions without mentioning the rationale behind its definition or have mentioned that the prices, or the principles behind its definition, are established in the law. One Member States explained that reserve prices were based on the experience gained in previous auctions. Three Member States have also mentioned that reserve prices should take into account the usability of awarded spectrum as well as the possibility of alternative use.

Avoid spectrum scarcity

25 Member States and the observer country have provided substantial answers to Q21b. In general, the responses indicated that the full amount of radio spectrum was or will be assigned in the 700 MHz and 3.6 GHz bands (15 MS). Notwithstanding, five Member States mentioned that regarding the 3.6 GHz band, measures were taken in order to safeguard services in the adjacent band or the protection of existing networks was also important in order to provide regulatory certainty. In some cases, existing services for wireless broadband offered in rural areas were

migrated from the 3.6 GHz band. One suggestion of best practice would be for each decision related to moving incumbents from a harmonised band to be made on a case-by-case basis, with consideration given to the circumstances at the time and to how unnecessary disruption could be minimised. Other Member State explained that when there are still existing users in a newly harmonized band is preferable to first ensure a solution for the existing users, so that all of the spectrum is awarded under the same conditions and with complete certainty about the usage possibilities. Three Member States have mentioned the intention to reserve spectrum in the 700 MHz band and/or in the 3.6 GHz band for public protection and disaster relief (PPDR) usage.

Seven Member States also have mentioned that all or part of the 26 GHz band was also assigned or is planned to be assigned, in one case for experimental 5G purposes. In one case, it was mentioned that part of the 26 GHz band will be allocated to local networks, balancing nationwide and local needs. Two Member States refer to the general possibility for granting experimental licenses in any frequency band.

In two Member States there is a requirement for spectrum leasing in the 3.6 GHz licences for the purpose of establishing private networks, which are seen by one Member State as an important component in the 5G ecosystem.

Regular consultations and/or regular updates of the national spectrum plan were also mentioned with the objective to prioritize the award of those bands that are most useful to the industry and to provide planning reliability. This practice allows operators to adjust their spectrum holdings to the market development and to their individual demand.

The observer country has also mentioned the decision to award the full spectrum in the 700 MHz and the discussion on awarding the entire band to public operators or reserving spectrum for verticals/industry in the 3.6 GHz band.

Payment of fees in instalments

25 Member States and the observer country have provided substantial answers to Q21c. In the majority of the cases, Member States have already foreseen the possibility of payments of the total or partial amount resulting from the auction in instalments for the total period of the rights or for a limited number of months or years, generally applying an interest rate. In one situation, this possibility applies only to specific spectrum bands (in the 3.6 GHz). In another case, this option was allowed in return for additional coverage commitments by the mobile network operators.

A few Member States have highlighted the difference between the fees resulting from the auction process from the usage fees, which are paid regularly, e.g. annually or quarterly. In particular, one Member State explained that measures that aim at allowing a quicker development of the networks can also be pursued through the usage fees.

A few Member States have mentioned that as a rule, the upfront spectrum fees are paid in one instalment at the end of the auction. Sometimes, however, the possibility for payment of fees in instalments is offered. One Member State referred to feedback from some operators stating that they rather prefer one unique instalment to pay at the end of the auction than applying the official interest rate.

Two Member States that have not yet adopted this option said that for any future auctions, the option to pay the auction price in instalments is to be introduced in the law.

One Member State suggested best practice would be for consideration to be given to appropriate payment structures, taking account of particular circumstances of the award, including (i) upfront payment for the full licence period (ii) annual fees – either fixed or indexed, and (iii) a mixture of an upfront fee to access the spectrum combined with an on-going stream of spectrum usage fees – again, fixed or indexed.

In the case of the observer country, in the 700 MHz band, winners could decide to postpone payment of parts of the auction price for two years, if they committed to invest a specific amount in new and improved coverage within these two years (procedure that might be adopted in the 3.6 GHz band - one alternative for this band is to pay the auction price over a period of five years with no annual interest rate, or the licensees could pay the auction price over the full licence period (20 years) with 6 percent annual interest rate).

Individual authorisation regime for the 24.25-27.5 GHz frequency band

24 Member States and the observer country have provided substantial answers to Q21d. Six Member States have indicated that there is no demand yet for this band and, for that reason the use of an individual authorisation regime for the 24.25-27.5 GHz frequency band has not yet been explored.

Some Member States have indicated that they have already made available some spectrum in the 26 GHz band (or are in the process of doing so) for:

- private networks (2 MS) or local 5G use (2 MS), which means that the licence regime for this part of the frequency band will be first-come-first-serve;
- experimental purposes (4 MS), in order to better identify the different types of innovative use of this band and to design the most appropriate allocation procedure, or to identify optimum conditions for the usage of the band.

Regarding experimental use, two Member States mentioned that there was no need for designation of any specific band to make the usage possible by permits. So there is no obstacle in the regulation to use even the 26 GHz band for experimental purposes.

Other three Member States indicated that they intend, or have already done so, to make available the 24.25-27.5 GHz frequency band through an auction for public networks and have reserved a part of the band for private or local networks which, in case the spectrum is enough to satisfy all requests, the first-come-first-serve basis is applied.

The remaining Member States have mentioned that the authorization regime for the 24.25-27.5 GHz band is currently under study or in the process of entering into force. One Member State has mentioned the successful experience with a first-come-first-serve procedure for issuing licenses with geographically limited rights of use in the 3.6 GHz band that illustrates how successful a fast-track administrative procedure can be.

One Member State explained the model adopted in Italy, called "club use" model. It involves individual but not exclusive rights of use of the spectrum assigned in the 26.5-27.5 GHz band, where each licensee can dynamically use all the awarded spectrum (up to 1 GHz) in areas where frequencies are not used by other licensees.

The observer country is also analysing the issue and offered some thoughts on it.

Combining financial incentives with obligations

18 Member States and the observer country have provided substantial answers to Q21e. Three Member States have indicated that there was a decrease in the reserve prices to take into account coverage obligations in the 700 MHz band (one of them in relation to a specific obligation to cover border crossings with the network providing Priority BB-PPDR services). One Member State mentioned there is usage fee reduction (50% for 10 years) if an undertaking implements 5G deployment cases defined in the auction documentation (40 cases in 5 categories, e.g., territorial, population coverage, or other priority cases such as rail, road transport, verticals). One Member State has mentioned that agreement between the federal level and the mobile network operators (MNO) with regard to the closing of white and grey spots can be understood as a financial incentive. In this agreement, the federal level allowed the MNOs to pay in annual instalments over the period to 2030 with regard to the liabilities from the 2019 spectrum auction. In return, the MNOs made additional coverage commitments to cover 99% of all households with LTE. One Member State has indicated that, in this very specific circumstance, a reduction on the amount of fees due to the use of spectrum can be given to the spectrum holders that commit to certain coverage obligations. One Member State has mentioned the example of the 800 MHz auction where a specific lot has a reserve price very low but quite severe obligations are foreseen (and 700 MHz auction costs of rollout of the network were taken into account by setting reserve prices). One Member State has mentioned that to promote investments and quick network roll-out, fiscal goals should be avoided in auctions, fiscal goals may lead to higher reserve prices.

One Member State explained the incentive auction system adopted which combines a forward and a reverse auction. The forward auction is designed pretty much the same way as normal spectrum auctions. In the reverse auction the successful bidders of the forward auction have the possibility to earn a price discount on the spectrum fee by accepting coverage obligations. This approach aims to address economic hard to cover, underserved areas by simultaneously mitigating the risk of excessive coverage obligations attached to spectrum blocks.

Some Member States have justified the reasons why they consider that financial incentives are not envisaged in order to improve coverage obligations:

- the absence of rural areas;
- market and competition are the drivers that will force the operators to accelerate and expand their coverage;
- the obligations are in line with the ones imposed in previous auctions;
- the cost of meeting the obligations will be considered by the bidders and reflected in their auction bids;

– they are (very) hard to successfully employ without risking unforeseen consequences or abuse; a combination of license conditions with a spectrum auction provides an easy and more robust way to ensure that public policy goals are met for a competitive price.

Sharing and joint roll-out

26 Member States and the observer country provided inputs to Q21f. The majority of Member States have said that sharing is permitted, even encouraged and in specific circumstances imposed (in one case regarding the 5G network in white areas, where there is already 4G network sharing). However, it should not distort competition and, for this reason, in some cases it is subject to the approval by the competent regulatory and/or competition authority. Passive sharing is more consensual than active sharing. Even so, sharing of the active infrastructure (including at least one of the following methods: frequency pooling, dynamic spectrum sharing and national roaming) is possible subject to competition law in several Member States, in some cases subject to a thorough analysis and limited to challenging areas, or upon authorization, or in case network densification needs to secure very high-capacity base stations. Joint roll-out of infrastructure that relies on the use of radio spectrum is also a reality in four Member States. One Member State indicated that, when one MNO decides to build the mast, it is obliged to inform other MNOs about this intention.

A few Member States have published guidance on passive and active infrastructure sharing. Other Member States have plans to do so.

One Member State has established some "collective" coverage obligations for assignee operators in the 700 MHz band that must provide (through reciprocal agreements) at least 99.4% of population and the main national road and rail transport routes with 5G services. These obligations are complementary to individual coverage obligations and commercial deployments.

Three Member States have also referred to the transposition of the European Electronic Communications Code (EECC) that may enhance sharing possibilities.

Other means to incentivise substantial investments in 5G pioneer bands

18 Member States and the observer country have provided comprehensive answers to Q22, indicating the following means to incentivise investments by radio spectrum users in the roll-out of 5G networks (not considering the financial incentives already mentioned in regard to Q21):

– sufficient license duration that allows operators to earn back their 5G investment or even unlimited license duration;
– to provide for enough spectrum in the 3.4-3.8 GHz band, opening up another band (3800-4200 MHz) for private 5G networks;
– the possibility to get a time-limited licence in 3.5 GHz (until the licences in 3.5 GHz are issued as a result of the upcoming auction), which could be used to test any 5G services;
– license obligations can be fulfilled using all the frequencies are assigned to each operator;
– refarming frequency spectrum;

- the promotion of trials;
- to facilitate the use of infrastructures owned by the administration;
- to address and to eliminate technical uncertainties (e.g., co-existence with other networks) at European level at an early stage;
- to use financial aid to complement 5G deployments or the Connecting Europe Facility (CEF2) programme to incentivise substantial investments in the roll-out of 5G networks;
- to ensure that spectrum rights of use for WBB ECS harmonised bands are both service and technology-neutral;
- to adopt the „use it or lease it" mechanism (operators not licensees can lease the frequencies in the 3.6-3.8 GHz band in any municipalities not included by the licensees in their coverage obligation area) and access obligations;
- to grant the 3.4-3.8 GHz band mainly for small-area wireless access points and fixed 5G networks instead of national mobile 5G network, incentivising investments by radio spectrum users;
- to allow for separate licenses in specific and challenging areas;
- to adjust the spectrum fee structure to not penalise the buildout and densification of the networks (flat fee irrespective of the number of base stations);
- to allow more freedom in the 26 GHz band, namely, frequency pooling and active sharing, including dynamic spectrum sharing, with a pre-emptive right in favour of the licence holder on its assigned sub-band;
- the introduction of the obligation to provide access (wholesale capacity) to other players (not telecom operators, e.g., service providers) for the development of 5G services (including local services or private networks) in the 26.5-27.5 GHz band.

The observer country has suggested to give operators the possibility to use parts of the revenue/auction prices to improve capacity and coverage and setting coverage obligations and reserve prices based on calculations and reasonable estimates of costs of meeting the obligations.

8. SPECTRUM AUTHORISATION FOR CROSS-BORDER USE CASES FOR VERTICALS

Q23-Q24 (Recommends (21a) and (21b)): The following sections refer to best practice with respect to the identification of industrial use cases with a cross-border dimension, in line with Union priorities on 5G deployment.

23 Member States and the observer country have provided substantial answers to Q23, indicating the automotive, transport, health, logistics, manufacturing, media, PPDR, road safety, agriculture, mines, rail operations, foresting as examples of industrial ('vertical') use cases with a cross-border dimension, which depend on or benefit from wireless / mobile connectivity. Multi-country EU projects or initiatives such as 5G-Blueprint, 5G CroCo, 5G-Mobix, 5G-Carmen, Borealis were also mentioned. Regarding a coherent practice for granting rights of spectrum use to operators, Member States have highlighted the importance of harmonised technical regulations, as well as granting licences on a local basis. Although some answers mentioned that a coherent practice for granting right of use may have some benefits, other replies concluded that there is no need for such a practice, arguing that industrial use cases rarely have a mobility dimension and their needs of spectrum are not defined in terms of specific frequency band, the

5G giving the possibility to accommodate the need to have a system that operates in a frequency band that can be used for the same purpose across Europe.

17 Member States and the observer country have provided answers to Q24, with many replies concluding that in terms of cross-border coordination the existing framework (bi- or multilateral coordination agreements, memorandums of understanding (MoU) between neighbouring countries, commercial agreements between operators) is sufficient at this point. The quality of service (QoS) and security issues were covered only by few Member States emphasizing their importance, but also the fact that obligations on operators in this respect are covered by existing legal framework. One Member States argued that in respect of required QoS in transport corridors there may be a need for some additional spectrum arrangements between countries, requiring possibly also involvement of NRA's. The difficulties in coordinating with non-EU countries were also mentioned by a couple of replies.

9. SPECTRUM – ISSUES RELATED TO EMF AND PUBLIC HEALTH

Q25: 26 Member States and the observer country provided answers to Q25 concerning measures that could be taken by operators, competent authorities or national regulatory authorities to address and mitigate the growing social resistance to the deployment of 5G networks, in particular due to alleged health issues due to electromagnetic fields (EMF) emissions highlighting measures already taken at national level in order to address this issue. The replies largely focused on the following proposed actions:

- targeted information campaigns conducted locally, with the aim to provide the public with reliable and fact-based information on 5G and EMF emissions, in a transparent and accessible manner;
- web-pages, brochures, leaflets, TV and radio spots, billboards, workshops/ seminars, TV talk shows, etc. on the benefits of implementing 5G;
- measurement and monitoring of EMF emissions and making the results available to the public, highlighting the applicable limits, as established by international bodies;
- cooperation between all authorities with responsibilities in the field and operators is beneficial;
- continue cooperation at European level with the aim to inform the population and combat misleading news;
- promotion of continuous scientific research on EMF emissions carried out by credible and independent institutions;
- specific regulations providing obligations for operators in terms of EMF measuring, assessment of such measurements and making available the results.

10. OTHER RELEVANT TOPICS

Q26: Eleven Member States as well as the observer country have provided inputs to Q26 regarding other relevant and important aspects, which present national developments on the following diverse topics:

- status and practice of national implementation relevant to points (18) and (19) of the Recommendation;
- description of the relevant national legal framework;
- relevant practice on 5G rollout (including on power supply of base stations) and EMF;
- practice of investment commitment of operators in exchange of regional tax exemption of masts;
- pro-investment measures of Broadband Competence Offices (BCOs) in the context of the BCRD;
- research and development funding through auction proceeds;
- deliberation on factors and indicators for determining the environmental footprint of networks; deliberation on measures for initial financial investment in (costly) passive infrastructure taking advantage of shared use;
- spectrum-related priorities: the avoidance of spectrum scarcity, pre-deployment tests authorisation, and the publication of a national spectrum roadmap;
- concerns that best practices developed within the Toolbox should not impose additional procedural burden neither presuppose any change of national legislation.

The relevance of these inputs has to be assessed in phase 2 of the Toolbox process.

11. INPUT FROM OTHER RELEVANT BODIES

RSPG

The RSPG issued on 4 December 2020 its First Input to the Connectivity Special Group[6] in order to respond to sections 4 and 5 of the Recommendation.

The RSPG input is based on the feedback the RSPG has gathered from its members and consists of a written response highlighting the RSPG's overall position as well as four Annexes containing the written contribution given by each Member State. Input was provided on points (18)-(22) of the Recommendation.

Regarding Recommend 18, the RSPG informs that only few Member States responded and identified as best practices to set a very tight time schedule for the rest of the auction, to temporarily allow the use of spectrum bands dedicated to 5G and to consult with stakeholders to minimize the required time to complete the auction process. The vast majority of Member States is not expecting more than slight delays in their spectrum assignment processes.

On Recommend 19 the RSPG comments that Peer Reviews should be based on voluntary principles and Member States shall decide on such procedures on a case-by-case basis during the preparation of their award procedures. Annex 2 of the RSPG input shows that nearly half of the Member States have organized Peer Review workshops since 2016. 10 Member States indicated their plans for a Peer Review.

In response to Recommend 20 the RSPG highlights that there is no single solution that fits all but on the contrary, Member States need to be able to adapt to national circumstances and take into

[6] Link: https://rspg-spectrum.eu/2020/12/rspg-extraordinary-plenary-meeting-04-december-2020/

account different geographical characteristics, market situations, and different usage scenarios whilst ensuring that spectrum is well-utilized and that future speed, capacity and coverage requirements are met. Based on this paradigm, the RSPG has contributed numerous best practices in Annex 3 of the input.

Regarding Recommend 21 of the Recommendation, RSPG provides input along questions 23 and 24 of the Toolbox Questionnaire. The Members States' responses are compiled in Annex 4.

In response to Q23 the RSPG concludes that any industrial ("vertical") use case would benefit from connectivity. However, the RSPG sees connectivity not being so dependent on the practice of granting rights, but on the interoperability of equipment, in particular from the existence of European Harmonised Standards. The Member States' responses indicate that there is currently no cross-border vertical use case that involves the traditional form of spectrum sharing.

Responding to Q24, the RSPG collates, that in regard to the use cases identified, rights of spectrum use were granted based on the European legal framework (EECC). No obstacles were identified. For challenging cases with cross-border dimension, a peer review procedure under the umbrella of the RSPG is established.

The RSPG further responds to Q26 of the questionnaire by underlining that delays should be avoided in general, but especially in the context of the establishment of the common toolbox within the Union that should not lead to any additional, albeit voluntary, steps.

BEREC

BEREC shared with the Special Group the following three BEREC documents:

- Implementation of the Broadband Cost Reduction Directive (BoR (17) 245) dating from 2017;
- BEREC report on pricing for access to infrastructure and civil works according to the BCRD (BoR (19) 23) dating from 2019; and
- BEREC Guidelines on very high capacity networks (BoR (20) 165) dating from 2020.

In a separate table, BEREC highlighted topics examined in these documents which could be relevant for the identification of best practices pursuant to Section 3 of the Recommendation and informed where in these documents more information on these topics can be found.

To the answer of Q11 contributes the information of the BEREC report BoR (17) 245 (p. 7-8) whether a Member State appointed the tasks of the SIP to the NRA and/or to other organisations.

Regarding Q13 (Recommend 12) the information of the BEREC report BoR (17) 245 (p. 18-19) is relevant in which Member States public sector bodies have the obligation to make the minimum information concerning existing physical infrastructure available via the SIP, which is foreseen in the BCRD (Art. 4(1)) only optionally.

Input to Q14 (Recommend 12) is the information of the BEREC report BoR (17) 245 (p. 17-18) in which Member States more than the minimum information concerning the existing physical infrastructure according Art. 4(1) of the BCRD is available via SIP.

For the answer to Q15 (Recommend 13) the information of the BEREC report BoR (17) 245 (p. 19) is relevant in which Member States network operators have to make information on their physical infrastructure available via the SIP without any request from an access seeker.

Relevant for the answer to Q16 is the information of the BEREC report BoR (17) 245 (p. 9, 19) in which Member States other organisations than public sector bodies have to make the minimum information concerning existing physical infrastructure available via the SIP.

To the answer of Q17 (Recommend 14) contributes the information of the BEREC report BoR (17) 245 (p. 12) which other organisations than network operators have to provide access to their physical infrastructure and/or coordinate their civil works.

Input to Q18 (Recommend 15) is the information of the BEREC report BoR (17) 245 (p. 11-12) which Member States established rules the DSB has to or could follow.

Input for Section 3, which refers to very high capacity networks, contains the information regarding which networks qualify as a very high capacity network, as explained in the BEREC Guidelines on very high capacity networks (BoR (20) 165, paragraph 18).

12. CONCLUSIONS

Member States provided extensive written inputs to the questionnaire. These inputs can roughly be divided into a) descriptions of the current situation/statutory best practices, and b) envisaged best practices for the future.

From the information collected in this phase 1 it is clear that while different situations might be observed in Member-States regarding the identified best practices for a fast VHCN deployment with a focus on the reduction of network costs and the investment-friendly authorisation of radio spectrum for 5G, some similar or common practice could be derived.

In this regard, Member States are invited to work together and in close cooperation with the Commission, taking into account the variety of inputs and best practices provided, as well as the different preconditions in the Member States in order to agree, by 30 March, 2021, on a common Union toolbox for reducing the cost of deploying very high-capacity networks and ensuring timely and investment-friendly access to 5G radio spectrum.

The active participation of all Member States in the process of phase 2 will be fundamental for a positive outcome of the designing of the Toolbox, including with a view to reflect as much commonality and consensus as possible, with the objective to contribute for the swift development of the electronic communications markets in the European Union.

ANNEX – Inputs provided by Member States, BEREC and the RSPG

(sorted by questions of the template)

***Question 1**: Please describe the current legal situation with regard to the deployment of digital infrastructure in your country.*	
Member State	Answer
AT	There are several aspects relevant to the current legal situation: • Various permits (e.g. building law, nature conservation, road traffic and other) may be required. • Responsibilities in legislation and enforcement are distributed between the Republic of Austria, the Federal States and the communities: Whereas the responsibility for building laws and nature protection lies in the 9 Federal States, the Republic of Austria is responsible for road traffic regulations. As the central information point for permits, RTR-GmbH publishes information (as weblinks) on the conditions and procedures for the issuing of permits for construction work necessary for the construction of components of high-speed networks for electronic communication, please see https://www.rtr.at/de/tk/ZIS_Genehmigungen#c31734. • An application according to trade regulations (Industrial Code) is not required. • There does not exist a permit requirement under Telecom Act (TKG 2003), except in some cases for the use of radio frequencies (and general authorisation due to directive 2020/20/EC).
BE	The implementation of the BCRD (and what is related to the infrastructure deployment of digital infrastructures) is a competence of the federal state and the three regions (Flemish Region, Walloon Region and Brussels-Capital Region). • A cooperation agreement has been signed by the Belgian State, the Communities and the Regions to implement the national dispute settlement body. • The competence of the federal state lies in the access to and transparency regarding infrastructure of the gas, electricity and rail infrastructure operators (those network operators for which the regions are not or only partly competent), as well as in some extent the coordination of civil works. • The competence of the regions: access to infrastructure and transparency of network operators (this also includes gas and electricity operators, sewing, water, roads …), as well as the coordination of most civil works. Regions are also responsible for permit granting procedures and the urban planning. • However, the access to in-building physical infrastructure is a federal competence. The regions are also responsible for environmental norms (such as radiation norms).
BG	
CY	➢ THE REGULATION OF ELECTRONIC COMMUNICATIONS AND POSTAL SERVICES LAW (L. 112(I)/2004):

	○ Duly authorised electronic communications network providers may acquire immovable property for the purposes of any of their activities under this Law, and in case of property which cannot be acquired by agreement, this may be acquired under the provisions of the law on the compulsory expropriation of property, in force from time to time. ○ Prior to executing any work on, under, over or above any immovable property, providers shall make sure that all necessary rights and permissions have been obtained from every competent public authority. ➢ The "acquisition of rights of way Order" of 2012 ➢ For installing antennas and masts, mobile network operators are obliged to receive the necessary town planning and building permits. More specifically, before installing antennas and masts, the Authorised Entity is obliged**:** ○ to obtain the necessary town planning license, in accordance with the Town & Country Planning Laws of 1972, as they are amended or replaced from time to time; ○ to obtain the necessary building license, in accordance with the Streets and Buildings Regulation Law, as it is amended or replaced from time to time; ○ to obtain the necessary approval certificate in accordance with the Streets and Buildings Regulation Law or the necessary special approval certificate according to the Streets and Buildings Regulation (Temporary Provisions) Law of 2004 as amended or replaced from time to time; ○ to conform with the provisions of the Environmental Impact Assessment of Certain Projects Law of 2005 as amended or replaced from time to time (applies only for specific circumstances).
CZ	This area is reflected by acts no. 127/2005 Coll., on electronic communications, no. 194/2017 Coll., on measures to reduce the costs of deployment of high-speed electronic communications networks, no. 183/2006 Coll., construction act, and no. 416/2009 Coll., on accelerating the construction of transport, water, energy and electronic communications infrastructure, as appropriate. The general mutual technical protection of all types of infrastructure is provided by the law, including protective zones. There are no means of work legal without prior consent of the infrastructure owner in such zones. An undertaking operating a public communications network, is entitled to establish and operate on or in another owner's land and/or building (installing necessary infrastructure equipment), when meeting a set of specific conditions (i.a. the undertaking and the owner of the property concerned shall conclude a preliminary agreement on granting a servitude for a lump-sum compensation in respect of the part of the property concerned, and after the completion of the construction and surveying of its position they shall conclude an agreement on granting a servitude in respect of the actually affected part of the property). Restriction of ownership rights may not exceed the extent necessary for

	achieving the purpose of installing the infrastructure in question. The undertaking also has rights to access (upon prior announcement to the property owner) owners' property to the extent needed in order to carry out the appropriate activities, the repair and maintenance of communications lines and electronic communications equipment located on owners' property etc. The undertaking pays maximum respect to the rights of the owners of the properties concerned. Once the work is completed, it must restore the property to its previous state and, if that is not possible with respect to the work done, to a state corresponding to the previous purpose or use of the property. Neither a building permit nor a notification to the building authority is required namely for overhead and underground communication lines of electronic communications networks, their antennas and masts, including supporting points of overhead or demarcation points of underground communication lines, telephone booths and connecting communication lines of electronic communications networks and related communication equipment, including their electrical connections. Electronic communications infrastructure means a communication line of a public communications network and related communication equipment, including their electrical connections. An annex is an underground construction of an electronic communications infrastructure that is being attached for the construction of a road or a track, or to the underground construction of sewers, power lines, public lighting, product pipelines or lines of the electronic communications network. At the request of the builder, the Building Authority issues preliminary information on the conditions for issuing a decision on the location of a selected energy infrastructure or electronic communications infrastructure or a joint permit for such construction, including requirements for data, documents and content of documentation to be submitted by the builder. On the issuance of a decision on the location of such a construction or a joint permit for such a construction. A builder submits binding opinions of the authorities concerned pursuant to special legal regulations to an application for a decision on the location of a construction or a joint permit for such construction only if it was provided prior to the application. The building authority suspends the proceedings if the builder requested the authority concerned to issue a binding opinion and this binding opinion was not issued before the application for a decision on the location of the construction or the joint permit was submitted and the deadline for its issuance did not expire in vain. If the application for issuing a decision is complete, the building authority orders joint negotiations with the relevant authorities if necessary to secure missing binding opinions of the relevant authorities or to coordinate them. The authorities concerned apply the missing or supplement their binding opinions. They may reserve the issue of a binding opinion within an extended period of 30 days from the date of the joint meeting. If a binding opinion is not issued within this period, it shall be deemed to be in agreement and without conditions. Decisions on the location of a building or territorial approval pursuant to the Building Act do not require electronic communications connections up to a length of 100 meters. No building permit or building approval decision pursuant to the Building Act is required for the use of the construction of electronic communications infrastructure. Within 60 days from the date of commencement of use of the construction, the builder submits to the relevant building authority data determining the location of the construction definition point, documentation of the actual construction, if there were insignificant deviations from verified documentation or verified project documentation, and geometric plan of construction location.

DE	Construction measures for the laying of lines (regardless of whether they are for the fixed land-line network or mobile connectivity) or the installation of mobile communications facilities are generally subject to **approval**, i.e. require the prior consent of the competent authority. This may concern various fields of law, and the compatibility of the project in question with the requirements of the field of law concerned has to be verified by the competent authorities (e.g. building law, heritage protection law, water law, immission control law). The regulatory framework, i.e. laws and regulations, is – based on the division of competences laid down in the Basic Law (Constitutional Law) – adopted by the Federation or the federal states (e.g. land use law: Federal Government, building regulations: federal state). But also local authority bylaws on town design have to be taken into account in such permit granting procedures. In accordance with the Telecommunications Act (section 68ff of the TKG), rights of way for the laying of telecommunications lines along (public) transport infrastructures (this includes public paths, squares, bridges, tunnels and water bodies) are transferred to owners or operators of public telecommunications networks or lines by the Federal Network Agency. The actual laying or modification of telecommunications lines requires the (prior) **consent** of the competent authority responsible for the construction and maintenance of public ways.
DK	**<u>Summary</u>** Denmark is a unitary state, and all legislation is national. Within the scope of national legislation, municipalities can adopt zoning plans for an area containing provisions on what type of structures etc. are permitted in an area, and general local policy principles for issues such as telecom masts. For the majority of digital infrastructure projects, permits are granted by the local municipality in accordance with national law. This includes building permits, rural zone planning permits, digging permits, some permits relating to nature/heritage conservation, and permits for rights of way on municipal roads. Some conservations (protection of certain types of nature or cultural heritage) will make it necessary to obtain an *additional* permit supplementing the municipal permit(s). In a limited number of situations, *only* a permit from a national authority is needed, with the most notable examples being digging or rights of way on national roads, where only a permit from the Road Directorate is needed; and ocean floor cables within the ocean territory, where a permit from several national authorities (but not the municipality) is needed. Where a permit is necessary, civil works/construction etc. cannot be commenced before the permit is granted. However, in some cases no permit is needed; such exceptions are described in the answer to question 4. Rights of way for public roads are granted via a permit. The use of other types of publicly owned property for permanently installed above-ground telco infrastructure (e.g. land on which to place masts, rooftops/chimneys on which to place antennas) is *not* a matter of a permit, but a commercial rental agreement between the owner of the property and the telecom operator in the same way as when placing masts/antennas on private property. Whether or not to rent out such property is a commercial decision, and there is no legal entitlement to "apply" for it. When using rented public property to establish a mast/antenna, any applicable permits are still necessary (but some antennas are exempt from e.g. building permits, see question 4).

Types of permits

Rules for deployment of digital infrastructure fall within the following categories:

1. Establishing the infrastructure
    a. Rules for digging works (broadband cables etc.) – digging permits etc.
    b. Rules for establishing masts and antennae (building) – building permits etc.
    c. Protection of environment, nature, heritage etc. – exemptions needed in certain designated areas
    d. Ocean floor cables etc.
2. Obtaining access to relevant existing infrastructure or property (land/rooftops etc.)
    a. Rules for access to existing infrastructure (BCRD access rules etc.)
    b. Rules for access to public lands/buildings, private lands/buildings, and roads (rights of way etc.)

This answer is structured along these categories.

1a. Rules for digging works – digging permit

According to the Road Act, Section 73, alterations to a public road such as digging require a permit from the municipality (for municipal roads) or the Road Directorate (for national roads). For private roads, the Private Road Act states that digging in private roads in cities can be done upon securing a digging permit from the municipality like municipal roads, while private roads in rural areas require a permit from the land owner(s). The entity wishing to dig is also obliged by the LER Act (see the answer to question 12) to run a query in LER (the Danish Register of Underground Cable Owners) to avoid conflicts with existing infrastructure (digging damage). An application for a digging permit must contain information on consultations with other digging actors on whether joint digging is possible. See the answer to question 4 for exceptions from these requirements.

1b. Rules for establishing masts and antennae

Building permit: Building structures including masts and antennae falls within the scope of the Building Regulation (bygningsreglementet). The Building Regulation applies to e.g. the construction, expansion, alteration or demolishing of structures. The local Municipal Assembly is responsible for issuing building permits. Masts are regarded as structures (requiring building permits), and so are antennae and antenna systems, with certain exceptions. See the answer to question 4 for exceptions.

Rural zone planning permit: Each municipality is divided into urban zones, vacation home zones and rural zones. Urban zones and vacation home zones are regulated via zoning plans (see below), while rural zones as a rule are regulated via rural zone planning permits. In rural zone, constructing buildings including masts is not allowed by default and requires a rural zone planning permit (in addition to any other permits).

	Some antennae also require such a permit, but most are exempt, see the answer to question 4. A municipality may decide to adopt a zoning plan for a rural zone area which can replace rural zone planning permits by describing what is allowed in the area. If this zoning plan allows for the establishment of (a) mast(s), it can make a rural zone planning permit superfluous. ***Zoning plans:*** The local Municipal Assembly can issue zoning plans for an area. A zoning plan does not in itself lead to any requirements for a permit, but any construction etc. in an area must be in accordance with the zoning plan, whether it requires a building and/or rural zone permit or not. Zoning plans may contain provisions which either allow or prohibit establishing masts in the area. Zoning plans can also contain rules which regulate the possibilities for establishing antennae. ***Public roads:*** One purpose of the Road Act is to contribute towards establishing other infrastructure within the network of public roads, but a permit in accordance with the Road Act is needed. These permits are obtained from the municipality for municipal roads and from the Danish Road Directorate for national roads (motorways etc.), and may replace other permits. The default rule is that infrastructure can be placed free of charge within the public road boundary. **1c. Protections of environment, nature, heritage etc.** When works (construction or digging) are to take place in an area designated as a protected area by national legislation, additional permits (exemptions from the protections) in accordance with the relevant national legislation may be required. For a number of protections, the local municipality can issue these permits, or there are certain minor works which do not require a special permit (e.g. some temporary terrain alterations within beach protection zones), while in other cases a permit from the competent national authority is necessary. As a general rule, it is often necessary for obtaining exemptions from these protections that the applicant demonstrates the absence of viable alternatives in unprotected or less sensitive areas. See the answer to question 2 for some examples of and procedures in these situations. **1d. Ocean floor cables etc.** The ocean floor, near the coast, belongs to the Danish state (ocean territory), and all projects/new activities in the ocean and on the ocean floor need a permit by state authorities, e.g.: The Costal Authority, The Environmental Protection Agency, The Maritime Authority, The Energy Agency, The Transport, Construction and Housing Authority, and The Agency for Culture and Palaces. The Danish Coastal Authority (Kystdirektoratet) processes permits for telecom/fiber cables etc. in the ocean territory pursuant to the Coastal Protection Act, section 16 a, paragraph 1, nos. 2 and 4 (establishment and digging) and section 16 a, paragraph 3 (terrain alterations on the beach coast). Here no permit from the municipality etc. will be needed as municipalities do not have jurisdiction over the ocean territory / ocean floor. Land connections to the ocean floor cable may naturally require other permits. Other authorities are involved as appropriate, issuing permits and stipulating requirements relevant to the areas they regulate (e.g. The Maritime Authority will review the impact on ocean

	travel, and The Agency for Culture and Palaces is responsible for cultural heritage on the ocean floor older than 100 years). **2a. Rules for access to existing infrastructure** The Broadband Cost Reduction Directive's rules regarding access to (in-building and other) existing physical infrastructure, transparency regarding physical infrastructure etc. have been implemented in the Digging Act (graveloven) and follow from the directive. Access to (in-building and other) existing physical infrastructure and access to information regarding existing physical infrastructure is subject to a request from a telecom operator. The reasons for rejecting access correspond to the rules in the Broadband Cost Reduction Directive. Disputes related to access to (in-building and other) existing physical infrastructure can be resolved by the Danish Energy Agency. For masts and antennae, rules on access to existing physical infrastructure (masts and buildings) have been established in the Mast Act, which predates the Broadband Cost Reduction Directive. The Mast Act aims to enable the use of existing masts and tall structures for the deployment of antennas. This is achieved via a set of rules obliging owners of masts and certain tall structures (rooftops, chimneys, facades etc.) to give others access to setting up antennae on their mast/structure. Municipalities can also order owners of masts/tall structures to give such access, which must be seen in connection with their permit granting role: In practice, this means municipalities can refuse e.g. granting a permit for the construction of a new mast while instead obliging the owner of a suitable existing mast or tall structure to give the applicant access to using this mast. Disputes regarding the technical suitability of an existing mast/tall structure in such situations can be resolved via an expert opinion from the Danish Energy Agency. An older version of the Mast Act is available in English here. On 21 December 2020 new rules implementing the EECC Article 57, Section 4, is expected to enter into force. These new rules imply that telecom operators subject to a request may deploy small-areal wireless access points on physical infrastructure and street furniture controlled by public authorities and on street furniture controlled by others than public authorities. **2b. Rules for access to public lands/buildings, private lands/buildings, and roads** The Telecoms Act Section 60 a contains a provision that "Municipal Assemblies and Regional Councils can enter into agreements on market terms with providers of electronic communications networks regarding the leasing of areas, buildings, tall constructions, masts etc. with a view to expanding the radio communications network". In practice, this means that municipalities and regions can rent out property to telco providers on which to build masts or set up antennae for telecommunication purposes at prices and other conditions which reflect market conditions. The provision is under revision to include all public authorities in the future. The inclusion of all public authorities does not mean that national authorities are currently unable to rent out property for this purpose, but their legal basis is different, and the revision seeks to streamline regulations for this type of lease. The Danish Energy Agency has issued guidelines on how to ensure that payments for renting property from public authorities reflect market conditions and expects to issue a revised version of these guidelines in early 2021. Within the public road boundary (vejareal), the specific rules of the Road Act regarding the use of an area within the road boundary (råden over vejareal) apply instead. This means that the use of an area within the road boundary, e.g. for establishing masts, must be done in

	accordance with the Road Act, entailing permission from either the municipality (for municipal roads) or the Danish Road Directorate (for national roads, such as motorways). The default for access to establishing a mast/antenna on private property is that telecom operators must enter into a leasing agreement with the land owner. The Mast Act contains a possibility to expropriate property for masts/antennae etc. in exceptional cases. The expropriation provision includes land, which is not included in the obligations to give access described in 2a above. The expropriation provision has only been used once.
EE	Deployment of digital infrastructure is governed by the Building Code (https://www.riigiteataja.ee/en/eli/ee/520112020001/consolide/current)
EL	The two main texts that set the legislative framework are: • Law 4727/2020 (transposition of Directive 2018/1972 - European Electronic Communications Code). • Law 4463/2017 (transposition of Directive 2014/61- measures to reduce the cost of deploying high-speed electronic communications networks).
ES	Telecommunications legal framework in Spain is set by the General Law 9/2014, on Telecommunications. The Law includes the transposition of 2002 and 2009 Directives and a much broader range of dispositions foreseeing tools concerning streamlining permit granting procedures and fostering investment. It is important to note, that a new telecommunications general law will be passed soon, as the EECC must be transposed in our country. This new version is foreseen to include all the tools that have been proved efficient for reducing costs and increasing the speed of deploying very high capacity networks in Spain. In this regard, it can't be ignored that 85% of the population in Spain already enjoys the possibility to connect to a speed of at least 100Mbps (91% once the latest funded works in the PEBA program are finished) and that the coverage of FTTH reaches 80% (88% by the time the latest funded works in the PEBA program are finished). While telecommunications are an exlusive competence of the State and therefore and their regulation remains within the aforementioned law, it must be noted that the physical deployment of digital infrastructure entails a series of activities that involve municipalities and autonomous communities.
FI	In addition to the Joint Construction Act (implementing the BCRD Directive) there are several other acts containing regulations that, depending on the nature of the project and area concerned, may affect e.g. permit granting procedures for the deployment of infrastructure (for example Land use and building act, Highways act, Act on electronic communication services, Nature conservation act, Water act, Antiquities act).
FR	- ***Les déploiements FTTH en France sont organisés selon un zonage défini par une décision de l'Arcep, permettant de mobiliser les***

	fonds propres des opérateurs sur les zones rentables, le complément est ensuite déployé par les réseaux d'initiative publique avec l'appui financier du gouvernement et des autorités locales. Les décisions n° 2009-1106 et n° 2013-1475 de l'ARCEP définissent une liste des communes constituant les zones très denses du territoire. Par complément, le reste du territoire français correspond aux zones moins denses. Afin de s'assurer de la carence de l'initiative privée au sein des zones moins denses, le Gouvernement a recueilli en 2011 les intentions des opérateurs à déployer sur fonds propres des réseaux à horizon de 5 ans dans ces zones dans le cadre d'un premier appel à manifestation d'intérêt d'investissement. L'amélioration des conditions économiques des déploiements FttH et le dialogue entre les opérateurs privés et pouvoirs publics initié a permis d'étendre encore les zones moins dense d'initiative privée. Dans les zones très denses et les zones moins denses d'initiative privée, les déploiements des réseaux FttH sont financés intégralement par les opérateurs privés. Par défaut d'initiative privée, les zones moins denses restantes nécessitent l'initiative publique pour le déploiement des réseaux à très haut débit. - ***Le cadre réglementaire de la fibre est construit autour de la définition de ces zones.*** L'ensemble du corpus réglementaire peut être consulté sur le site du régulateur national : https://www.arcep.fr/la-regulation/grands-dossiers-reseaux-fixes/la-fibre/le-cadre-reglementaire-de-la-fibre.html - ***Les questions relatives aux autorisations et permis de construire*** sont encadrés par des règles nationales qui ne sont pas propres aux déploiements d'infrastructures à très haut débit mais ont une portée plus générale. Le déploiement de ces infrastructures s'inscrit dans le cadre réglementaire national détaillé ci-après (voir question 2.).
HR	The regulatory framework distinguishes between two possibilities for deployment of very high capacity networks. The first possibility is to build a VHCN on the existing infrastructure (such as access existing ducts or poles owned by the Croatian Electric Power Company (HEP) and Croatian Telecom (HT)) and the other is building completely new infrastructure. More on these two possibilities: I Regulatory framework for network deployment using access to existing infrastructure Access to the existing infrastructure of HT is defined by the Ordinance on manner and conditions of access and shared use of electronic communications infrastructure and other associated facilities and the Reference Offer of HT. This regulation prescribes and makes possible that all the administrative activities prerequisite for network rollout should be finalised within 15 to 30 days. Despite the fact that there is a well-regulated regulatory framework through the Electronic communication Act (ECA), the Ordinance on manner and conditions of access and shared use of electronic communications infrastructure and other associated facilities, and the Reference Offer of HT (SMP), there are other regulations that hinder and slow down network deployment. The Building Act and the Ordinance on simple construction works (hereafter: Ordinance) prescribes that the investor must obtain certificates (on main design and for particular conditions), which means the investor goes through obtaining these certificates for what usually needs 2 months before they can start network deployment. Under electronic communication regulation, the investor already has to submit detailed documentation to the cable

	duct owner (or poles owner), so it is clearly redundant to go through the whole procedure again under Build Act and that takes around 3 months. **It is necessary to remove this regulation requirement from the Building Act since it is already prescribed in the electronic communication regulation.** <u>II The regulatory framework for deployment of the network by building infrastructure (cable ducts, connection to the building etc.)</u> The building of electronic communications infrastructure (hereafter: ECI) is regulated by the *Building Act*, the *Physical Planning Act*, the *Regulation on the Criteria for the Development of Electronic Communications Infrastructure and Other Related Equipment* (hereafter: the Regulation on criteria for development ECI) and other relevant regulation (e.g. *Ordinance on simple construction works and works*, *Ordinance on the manner and conditions of access and sharing of electronic communications infrastructure and other related equipment*). For different constructions *Building Act* (specifically by *Ordinance*) prescribes different types of procedures required to obtain building permits. The Ordinance defined that the construction of ECI, such as masts, roof-top antenna, cabinet with external dimensions 0.60 x 2 x 2 m, installation of cables on existing infrastructure (cable duct, poles) has to be built with approved conditions on other infrastructure owners or authorities (electricity, Ministry of Health, …) depending on part of ECI. For instance, construction of ECI as cable duct has to be built with the same procedure as for construction of a building which must include a proof of legal interest and just for obtaining this proof takes 1-3 months. Also, the thing that has to be addressed is duplication of process when investor has to obtain all conditions for building from various bodies and then after he collects them, when submitting the main design for approval investor has to collect the approval from those same bodies he was obtaining conditions in a first step. ECI buildings are exempted from obtaining a location permit (exception for phased construction or issues related to unresolved ownership of the property on which it is being built). Building permits are obtained through a one single web portal. Permits are issued locally. Frequently participants in the procedure do not respect prescribed deadlines and that results in delays, so that procedure takes between 4 months to 1 year. **Single web portal on the state level is certainly a significant step in right direction however the Ministry of Physical Planning, Construction and State Assets should become more efficient on enforcing the deadlines prescribed by the *Building Act*.** Further aggravating is the fact that Local and Regional Physical Plans are not harmonised with the *Regulation on the criteria for the development of ECI* which is particularly important in the requirements for top-roof antenna installations. There are regional level physical plans: • County physical plans and the City of Zagreb (21)

	and Local level physical plans: • cities (128) and municipalities (428) physical plans **It is crucial to harmonise local physical plans with the *Regulation and criteria for the development of the ECI*.**
HU	**In Hungary**, as a result of the ongoing implementation of all the relevant parts of the Code, the overall legal situation regarding construction, development and deployment of digital infrastructure is currently undergoing substantial progress. With the aim of fostering an even more user friendly regulatory environment, and accelerating administrative procedures, the new regulation in the form of a NMHH7 Decree is expected to enter into force in December 2020 (please see details at Q10) . The above activities are currently regulated under the respective provisions of Act C of 2003 on Electronic Communications[8], as well as under various provisions of Decree No. 14 of 2013 (IX. 25) NMHH, currently serving as the main guiding regulation in the field. Due to its complexity, this highly specialised field of construction law is subject to some very strict and complex regulatory regime, with many institutional actors involved, please find a non-exhaustive list of the various Acts currently in force highlighted in-detail in the footnotes below.[9]

7 NMHH: National Media and Infocommunications Authority

8 Please find relevant provisions under Act C of 2003 on Electronic Communications as follows: Section 1 h), Section 50\A (1) d), Section 50\B, Section 74 (2), Section 83, Section 84, Section 94 (4) (4a), Section 95 (1), Section 96, Section 182 (1) Subsection 26, Section 188 Subsections: 12a), 61), 103)

9 Please find some of the most important Acts governing the field of construction, development, and deployment of electronic communications networks and network elements in Hungary:

- Act V of 2013 on the Hungarian Civil Code
- Act C of 2003 on Electronic Communications
- Act LXXVIII of 1997 on the Formation and Protection of the Built Environment

	Investments of special importance to the national economy[10] The act directly accelerated procedures, shortened time-limits and relocated responsibilities of competent authorities for specific projects in order to accelerate administrative procedure and also to streamline realisation of investment projects, like certain broadband infrastructure development projects. Each project shall be formally classified by the government via a specific government decision that may define coordination, funding and other means of accelerated and streamlines procedures. Specific procedures may cover: • publication policy: most of the notices of procedures of the aforementioned projects shall be published on notice boards • coordination: the Hungarian government may designate a specific government commissioner to coordinate the project, • rules of procedures: decreases time period of administrative appeals and prescribes electronic communications • An amendment in 2018 (enacted via Act XLIX of 2018) created the concept of ”specific investment project ”of overriding public interest that serves improvement of the quality of life in the community, and increases efficiency of the operation of affected municipalities: in certain cases the Hungarian government may define administrative procedures of - among others - town planning, civil works, heritage preservation, and environmental protection on a case-by-case basis.
IE	In Ireland, the **Planning and Development Act 2000,** which falls under the Ministry with responsibility for Housing, Local Government and Heritage (DHLGH), and accompanying Regulations give statutory effect to national policy guidance and regional planning guidelines, and provide the legislative framework for the preparation of Development Plans, Local Area Plans and the assessment and determination of planning applications. Under the planning acts, all development requires planning permission, unless specifically exempted under the Act or associated Regulations.

- Act LIII of 2006 on the acceleration and simplification of the implementation of investments of special importance to the national economy
- Act CL of 2016 on General Public Administration Procedures
- Act CXLI of 1997 on Real Estate Registration
- Act LXVI of 1992 on Keeping Records on the Personal Data and Address of citizens

10 Act LIII of 2006 on the acceleration and simplification of the implementation of investments of special importance to the national economy

	The current planning legislation provides three mechanisms under which telecommunications infrastructure can be deployed by entities other than State and local authorities. These are planning permission under Section 34 of the Planning and Development Act 2000 (as amended), exempted development under the provisions of Part 1 of Schedule 2 of the Planning and Development Regulations 2001, and licensing under Section 254 of the Planning and Development Act 2000 (as amended). The legislation which provides for telecommunication companies or "network operators" to open public roads for the establishment of underground communications infrastructure is the **Communications Regulation Act 2002** (2002 Act) and the Communications Regulation (Premium Rate Services and Electronic Communications Infrastructure) Act 2010 (2010 Act) which falls under the remit of the Ministry for the Environment, Climate and Communications (DECC). The 2002 Act provides for local authorities to grant consent to telecommunications operators to open regional and local public roads for the establishment of underground communications infrastructure. In addition, under the 2002 Act (Section 54) Transport Infrastructure Ireland is the designated consenting authority for national roads and motorways.
IT	In Italy, the Italian Electronic Communications Code, approved with Legislative Decree no. 259/2003, and subsequent amendments and additions, is the main reference legislation for the electronic communications sector including the development of digital infrastructures. When it was established, the Italian Electronic Communications Code transposed the four European Directives of 2002 (Framework Directive, Access Directive, Authorisation Directive and Universal Service directive). Over the last 15 years, this Code has been amended several times to adapt the national legislation with technological and market changes. The Legislative Decree no. 70/2012 represents the most significant change made to the Italian Electronic Communications Code. In fact, this provision transposed Directives 2209/136/EC and 2009/140/EC which promoted the consolidation of the internal communications market by also introducing the principle of technological neutrality. Further regulatory amendments were introduced by the Legislative Decree no. 33/2016, transposing Directive 2014/61/EC, relating to measures to reduce the cost of deploying high-speed electronic communications networks. This Decree no. 33/2016 defines rules to support the installation of high-speed electronic communications networks by promoting the use of the existing physical infrastructure. Furthermore, the decree focuses on regulations that allow a more efficient deployment of new physical infrastructures, in order to reduce the costs of installation. In application of Legislative Decree no. 33/2016, the minister of economic development issued the Ministerial Decree of 11/05/2016, relating to the establishment of the federated national information system for infrastructures (SINFI), and the Ministerial Decree of 02/09/2019 which

	defines the methods of consultation and access to the SINFI. Recently, Italy has defined measures to strengthen investments in ultra-broadband networks through article no. 23-ter of law no. 136 of 2018 (Fiscal Decree 2019), which amended articles 50-bis and 50-ter of the Italian Electronic Communications Code. Finally, the Law Decree no.76/2020 has further amended the Italian Electronic Communications Code. This law decree contains measures to accelerate the work necessary for the deployement of broadband infrastructures.
LT	In Lithuania digital infrastructure is mainly divided into two categories – "movables" (fiber-optics and other cables, ducts, cable management systems, etc.) and structures or buildings – real estate objects (towers, masts, etc.), so for deployment of movables (fiber, other cables) no specific permit is needed. In case you are building a structure or building (for example a tower) or need an access to state-owned land (for excavation) then SIP will be a local Municipality. If the network needs to be installed on a private property, operator must seek mutual agreement or, failing that, a to apply the court for the establishment of an easement. It should be noted that the Law on Electronic Communications provides the possibility to deploy communication infrastructure (fiber, cables) free of charge in the roads complex'es. **<u>Addition (December 2)</u>** Here we talk about the last stage of the permit granting (for instance, telecommunication tower). The municipality does indeed grant the permit (via "Infostatyba" el.platform), but there are some actions needed to perform in advance: • Topography; • Design; • Public information (to society); • Fulfilment of other institutions requirements, etc. The clock starts ticking when the project (of construction) is announced in aforementioned el.platform "Infostatyba" (which is Information System of Permits and Construction State Supervision): 1. 35 working days - for inspection of special (particular) construction works and reconstruction project (documentation); 2. 20 working days - for inspection of ordinary construction or reconstruction project (documentation).

	For broadband lines deployment, we calculate, that the whole process from project preparation, institutional process (land owners, roads, private persons (mobile, electricity, water communications proximity), lasts 3 months in average. Construction of tower (permit granting) in practice last much longer.
LU	Deployment of digital infrastructure is based on the principles of the Broadband Cos Reduction Directive.
LV	The deployment of digital infrastructure is regulated by the Law on High-speed Electronic Communications Network and 2 regulations of Cabinet of Ministers - General Construction Regulation and Regulation on Procedures for Installation, Construction and Supervision of Electronic Communications Networks. All regulations are national level regulations.
MT	Transport Malta is the regulatory authority under CAP. 499 for permit granting of infrastructure instalments on public roads.
NL	National legislation and regulations with regards to the deployment of digital infrastructure is divided amongst various departments within the national government. Roughly, the Ministry of Economic Affairs and Climate Policy and the Ministry of the Interior and Kingdom Relations are responsible for the legislation regarding the granting of permits for civil works needed with a view to deploying elements of very high capacity networks (VHCN) under the ground (mainly telecom cables and pipes) and above the ground (mainly mobile telecom cell sites) respectively. Local authorities (mainly municipalities) are in charge of granting local permits for civil works needed with a view to deploying elements of VHCN. Furthermore, the Ministry of Economic Affairs and Climate Policy is the main legislator with respect to telecom related matters laid down in the Dutch Telecommunications Act (Telecomwet). This includes matters like the deployment or provisioning of public electronic communications networks or services, spectrum policy, access to existing physical infrastructure and the coordination of civil works, and the exchange of information with regards to networks above and under the ground. The authorities Authority for Consumers and Markets (ACM) and the Radiocommunications Agency (Agentschap Telecom) are assigned to oversee compliance with the Dutch Telecommunications Act.
PL	The investment process is regulated in a number of legal acts (laws and regulations). The key acts are: the Act on Spatial Planning and Development, which regulates localization issues, and the Building Law, which concerns strictly issues related to construction procedures. In Poland, we also have a special telecommunications act (Act on supporting the development of telecommunications services and networks), which mainly concerns the issue of access to real estate (right of way) and access to technical infrastructure. The road law is also governed by the provisions of the Public Roads Act, which applies to infrastructure located on public roads. Each investment is checked for a negative impact on the environment (except for radiocommunication installations with an EIRP power above 15W - they are generally considered to have a negative impact on the environment). Radiocommunication installations are additionally subject to the regulations of the Environmental Protection Law. Local authorities may only, within their jurisdiction, establish detailed regulations concerning spatial order, i.e. through local spatial development plans. See table below for more details.

	[see table in PL Final Input]
PT	In Portugal, the deployment of digital infrastructure by electronic communications companies is ruled by the legal regime governing the construction, access and set up of infrastructures suitable for accommodation of electronic communications networks established by the Decree-Law 123/2009 of May 21, (hereinafter "DL123/2009"11) and by the legal regime of urbanisation and building, approved by Decree-Law 555/99, of December 16 (hereinafter "DL555/99"12). DL123/2009 applies to all types of electronic communications networks without distinction. According to the Portuguese legal framework the construction of suitable infrastructures13 by electronic communications companies is ruled by DL123/2009 as well as by the prior communication procedure established by DL555/99 (Article 7, DL123/200914). The prior communication procedure consists of a declaration that, if properly instructed, allows the interested party to proceed immediately with the execution of certain urban operations after the payment of the due fees, dispensing the practice of any permissive acts15. If municipalities consider it justified they may establish and maintain updated technical instructions applicable to the construction or expansion of suitable infrastructures. These technical instructions should be publicised on the SIIA16.

11 Consolidated version of the amendements made until the publication of Decree-Law nr 92/2017, of 31 of July,[(in order to transpose the Broadband Cost Reduction Directive (BCRD), available at: https://www.anacom.pt/render.jsp?contentId=1418606. From here forward answers will identify Decree-Law nr 123/2009 amended by Decree-Law nr 92/2017 as DL123/2009. For consultation of the last ammendment to Decree-Law nr 123/2009, made by Decree-Law nr 95/2019, of 18 of July, please consult the English version available at: https://www.anacom.pt/render.jsp?contentId=1548721&languageId=1.

12 Subjet to subsequent amendments. Only Portuguese version available at : http://www.pgdlisboa.pt/leis/lei_mostra_articulado.php?nid=625&tabela=leis&ficha=1&pagina=1&so_miolo=&.

13 The definition of suitable infraestrutures is in article 3, paragraphs 1, h) and paragraph 2 of DL123/2009.

14 Article 7 of DL123/2009 requires that such communication (the prior communication procedure) must be carried out under the terms of articles 34 and 35 of DL555/99.

15 The elements to be included on the prior communication are referred in article 7, paragraph 3 of DL123/2009.

16 Information System of Suitable Infrastructures (SIIA)': the system which assures the provision of information relative to the infrastructures suited for the accommodation of electronic communication networks, under the terms of article 24 (according to aa), paragraph 1, article 3 of DL123/2009).

	This regime of prior communication does not apply to the following situations: a) The installation and operation of radio communication stations and respective accessories defined in Decree-Law no. 151-A /2000, of 20 July, which are subject to municipal authorisation under the terms of Decree-Law no. 11/2003, of 18 January (DL11/2003); b) Works required to prevent situations that place in question public health and safety, as well as works for the repair of breakdowns or resolution of clearance of obstructions- [DL123/2009, article 7, paragraph 1, a) and b), respectively]; According to DL123/2009, mere physical access to suitable infrastructures for installation or maintenance of electronic communications cables, equipment or any other resources of communications networks, as well as bypass devices, connections or other equipment required for transmission of electronic communications in these networks, do not constitute construction works and, therefore, do not require prior communication. Electronic communications' companies are assured, under DL123, the rights of way established in article 24 of Law no. 5/2004, of February 10 (hereinafter "Electronic Communications Law" or "ECL") and by DL123/2009 (articles 5 and 6). According to these laws, undertakings providing public communications networks or publicly available electronic communications services are ensured: a) the right to request, pursuant to general law, the expropriation and the constitution of public easements indispensable to the installation, protection and maintenance of the respective systems, equipment and further resources; b) The right to use the public domain, in conditions of equality, for the implanting, crossing or passing over necessary for the installation of systems, equipment and further resources. All authorities with jurisdiction over public domain shall develop and publish procedures for granting the rights referred to in the preceding paragraphs, which shall be efficient, simple, transparent and duly disclosed, non-discriminatory and quick, and a decision shall be provided within six months of the application, except in cases of expropriation. Article 2 of DL123 lists entities referred to as responsible for establishing regulations containing the procedures for the attribution of rights of way under public domain, which should comply with the principles established in article 24 of ECL: a) State, to the Autonomous Regions and local authorities; b) all entities subject to the tutelage or superintendence of bodies of the State, Autonomous Regions or local authorities, which perform administrative duties, whether of business status or not, as well as public companies and concessionaires, namely those that act in the area of road, railway, port, airport, water supply, sanitation, and transportation and distribution of gas and electricity infrastructures;

	c) other entities that hold or operate infrastructures that are part of the public domain of the State, Autonomous Regions and local authorities; d) electronic communications companies and entities that hold or operate suitable infrastructures used for the first time in the exercise of their activity; e) entities that provide services of production, transport or distribution of gas, electricity, including public lighting, heating, water and the elimination or treatment of wastewater and sewerage, and drainage systems, and that hold or operate infrastructures suitable for the accommodation of electronic communications networks and that are not covered by the previous subparagraphs; f) entities that provide transport services, including railways, roads, ports and airports, and that hold or operate infrastructures suitable for the accommodation of electronic communications networks and that are not covered by the previous subparagraphs. In the case of rights of way over municipal public domain no more than 30 days may elapse between the date of submission of the application and its decision. The overcome of this period without the municipal council giving a ruling corresponds to the allocation of the right of way.
RO	The procedure for permit granting is stipulated by Law no. 50/1991 regarding the authorization of construction works, with the subsequent modifications and completions. This procedure is mandatory for the deployment of electronic communications networks and the physical infrastructure elements necessary for their support. The urban planning certificate is not required for the civil works outside the localities limit. Chapter IV of Law no. 159/2016 regarding the regime of the physical infrastructure of electronic communications, as well as for the establishment of measures reducing the installation costs for electronic communications networks, with the subsequent completions, lays down measures on authorising the construction of electronic communications networks (including the coordination of civil engineering works), the authorities responsible for issuing the construction authorizations are the local public administration units. The execution of construction works is permitted only on the basis of a building permit, which can be issued at the request of the holder of the title of ownership of a property - land and/or buildings - or another act which confers the right for the construction. Regarding the deployment of electronic communications networks and the physical infrastructure elements, two exceptions are regulated. Can be carried out without a building permit the repair/rehabilitation/refurbishment works, including modification, replacement or addition of equipment to electronic communications networks, if no work is required on them physical support infrastructure, performed by the beneficiaries of the general authorization in the field of electronic communications and/or network operators. Also, can be carried out without a building permit the installation of electronic communications networks and equipment in the existing underground physical infrastructures, built for this purpose, as well as the installation of electronic communications networks and equipment in the existing in-building physical infrastructures. The building permit for the installation of electronic communications networks and the building permit for the installation of physical infrastructures necessary for these networks shall be issued in compliance with the technical norms provided by the legislation regarding the

	regime of physical infrastructure of the electronic communications networks, as well as, - as the case may be – based on the technical regulations regarding the design and construction of the buildings on which they are placed. The technical norms shall be approved by a joint order of the Minister of for Transport, Infrastructure and Communications, the Minister of Public Works, Development and Administration and the President of ANCOM. The technical norms shall include and establish the construction characteristics, the minimum capacity to be ensured by the routes corresponding to the different categories of construction works, the protection zones for certain elements of the electronic communications networks or physical infrastructure elements necessary for supporting these networks, the procedure for the issuance of the technical endorsement attesting compliance with these norms, which is required for the issuance of the construction authorization, as well as the categories of endorsements and agreements required for the authorization of the public electronic communications networks physical infrastructure works. The procedure for adopting the technical norms has not yet been completed. Until the entry into force of the technical norms the authorization of the electronic communications networks' physical infrastructure works shall be performed according to the legislation in force. According to Article 34 of Law no. 159/2016, all buildings for which a construction or a major renovation permit application is submitted after 31 December 2016, will be equipped with high-speed-ready in-building infrastructure. Also, all new residence buildings for which a construction or a major renovation permit application is submitted after 31 of December 2016, will be equipped with access points.
SE	In Sweden you often need a building permit to build a building or a construction. You also need a starting clearance to begin construction works and a final clearance to start using the construction. This i regulated in Planning and building act (2010:900) and Planning and buil-ding ordinance (2011:338). For digital infrastructure a building permit might be required. Fiber network (in the air or in the ground) does not need a building permit. Antennas places on a building might require a building permit if they substantially change the buildings external appearance. It depends on where the building is located, what the building looks like and how much influence the anten-nas have on the external appearance. Some constructions other than buildings need a building permit. Radio or telephone masts or towers is a construction that need a building permit. So, if the antennas are to be placed in a mast or a tower, a building permit is needed.
SI	In Slovenia majority of electronic communications networks elements do NOT require a granted building permit. Building permit is obligatory only for electronic communications objects higher than 10 m or buildings larger than 30 m2. According to

	Building Act (Official Gazette of the RS, No. 61/2017) the deadline for granting or refusing application for civil works permit is 2 months. Despite the fact that a building permit is not required, the Building Act stipulates (Art. 5, par. 3) that the construction of simple buildings must not be in conflict with the spatial implementation act (municipal and state spatial plans) and that the construction is carried out in in accordance with the applicable regulations.
SK	The deployment of digital infrastructure in Slovak Republic is governed by **national legislation**. According to § 55 of Act on Zoning Planning and Construction Regulations (hereinafter referred to as **Construction Act**) No. 50/1976 Coll. of Act as amended, there are defined cases when the **notification** to the construction office is sufficient for the construction of electronic communication networks: - In the case of constructions of electronic communication networks (carriers of telecommunication equipment) placed on existing constructions, which do not exceed a height of 6 m, a width of 2.5 m and do not interfere with the load-bearing structures of the building, - For ground floor constructions of electronic communication networks, if their built-up area does not exceed 25 m2 and a height of 4.5 m, - When replacing or supplementing telecommunication equipment on existing constructions of electronic communication networks, when there is no change of the construction. According to § 56 of Construction Act a **construction permit or notification is not required** for overhead and underground lines of electronic communication networks, including support and demarcation points. According to §39 **civil engineering constructions** are long - distance and local electronic communication networks and lines, telecommunication masts, transformer stations. In accordance with § 32 of this Act construction office assesses the location of the construction of the electronic communication network as a whole in the process of zoning procedure and issues the decision on the location of the construction (**zoning decision**). With regard to § 39 of the abovementioned Act the **zoning decision** on the location of the construction determines the construction land, the construction which is placed on it, the conditions for the location of the construction are determined, the requirements for the content of the project documentation and the time of validity of the decision are determined. The location of the building will be marked in the graphic annex to the zoning decision. The **Decree** No. 532/2002 Coll. of Act of Ministry of the Environment of the Slovak Republic laying down details of the general technical requirements for construction works. According to the abovementioned Decree: Pipelines, telecommunication and electrical distributions and lines, which form a horizontal construction, technical and operationally uninterrupted line, are usually placed in the built-up area of the municipality **below the ground.** Such distributions and lines may be placed **above the surface** of the ground in the built - up area of the municipality, if

	a) It concerns the replacement, modernization, repair or reconstruction of existing overhead distribution lines and lines, without changing their route, b) it is a matter of adding distributions and lines to existing above-ground distributions and lines, while their route is not changed and at the same time the conditions of protection of existing overhead distributions and lines are observed, c) It is the crossing of watercourses, gorges or similar landscaping bodies, d) It is an outlet or termination of distributions and lines which are usually located above the ground, such as an outlet in distribution cabinets, termination in installations located above the ground or on existing structures, or e) This is agreed by the municipality whose built-up area is in question, if 1. the installation of wiring and conduits below the ground is technically impossible, involves unreasonable difficulties or requires disproportionate costs, such as in confined spaces, or 2. It is an extension of existing overhead distribution and lines.

***Question 2**: Please explain where the competence for permit granting lies and describe the design and different steps of the permit granting procedures in your country. Does it include various (national/regional/local) competent authorities or do you have a concentration on a single authority or centralised management?*	
Member State	Answer
AT	Permit granting procedures may differ to some extent, but basically there is a nationwide uniform procedural law in AT (General Administrative Procedure Act 1991 – AVG; https://www.ris.bka.gv.at/Dokument.wxe?Abfrage=Erv&Dokumentnummer=ERV_1991_51. Also see answer to Q1.
BE	Permit granting is a regional/local competence. - Walloon Region: permit demand has to be introduced via a digital platform (POWALCO). - Brussels-Capital Region: permit demand has to be introduced via a digital platform (OSIRIS) and all documents and communication are handled using this platform. <u>Information regarding the Flemish Region,:</u> • A so called integrated environmental permit for the construction with antennas is needed but not if the antenna is placed on existing structure. • All antennas need a certificate (with calculations of exposure), before they start to operate; • In case of works for the installation of digital infrastructure, like underground cables, and normal equipment and appurtenances, such as fibre cable, the following rules apply: o in public domain: an integrated environmental permit is not required for works, but this is subject to an obligation to obtain a permit from the domain manager of the Flemish Government with an obligation to pay fees, as well as, possibly, a permit or notification obligation from the municipal government with an obligation to pay fees. o the exemption from authorization is without prejudice to so-called "sectoral" arrangements such as in or near goods protected by heritage or archaeological legislation. o the exemption does not apply where an environmental impact assessment is required (but this only concerns very large projects); o works for usual connections to dwellings are not subject to a permit requirement. o the Flemish permitting authority decides on applications relating to infrastructure of a public character for internet or other communication networks, whether wireless or not, operating as a supra-local network; o other works in private domain require a permit from the Municipality. o For civil works on private domain the competent authority has to decide within 120 days on the application of the integrated environmental permit. o For a permit for the use of the public domain of the Flemish government, no mandatory deadlines are set, but the application

	only has to be submitted 30 days before the start of the works. <u>Regarding permit granting for antennas, this is the procedure in the Flemish Region:</u> • The competent authority for an integrated environmental permit is the Flemish Minister of environment (regional permitting authority) for new basic antenna infrastructure and supra-local networks and the municipality for small local cable networks on private grounds. For permit applications, the competent (regional) authority is assisted by various advisory bodies to ensure compliance with regional environmental legislation. • An environmental permit is only needed when the supporting structure for the antenna has to be constructed. If the antenna is placed on an existing structure, no permit is needed, only a notification. The competent authority for the notification is the regional authority. Taking into account the certification procedure the overall maximum time to start operating will be around 60 days. • The time for granting an integrated environmental permit by the regional authority is 120 days and includes public participation. if this period is exceeded, the permit shall be deemed to have been refused. The decision shall be published and may be subject to judicial review. • For the certificate of conformity, the maximum allowed evaluation time is 60 days. Without the certificate of conformity, the operator is not allowed to use the antennas, there is no tacit approval for certificates. • If a new structure needs to be built, thus an environmental permit is needed, you can only 'test' the antenna when the structure is finished. The overall maximum time to start operating will be 180 days (120 days to get the permit + 60 days for the certificate). → usually the certificate is part of the application for an environmental permit. The regional authority demands this to comply with the assessment of health in the application for an environmental permit • All antennas (see also question 4), also antennas where a permit is not necessary, need a certificate/attest with a technical assessment and exposure calculations. Operators need to apply for this certificate with technical data, … • Based on the applications for a certificate/attest, the Department of Environment calculates the (potential human) exposure, if this remains below legal standards, the certificate is delivered and the antennas can be used and start transmitting.
BG	
CY	➢ See also answer 1. According to the procedures for the acquisition of rights of way Order, 10/2012 permit granting includes various competent authorities (NRA, National (public work department, town planning department) and local (municipalities, communities). o Applications follow a standardised official document which is shared between the abovementioned authorities and electronic communication (EC) network providers. ➢ Regarding the installation of antennas and masts the following applies: o Legislation defines the Minister of the Interior as the Planning Authority for examining any application for the grant of a

	planning permit, but since 1990 the Minister has designated most of his powers to the four bigger urban Municipalities, for their respective administrative areas, and the five Town Planning District Officers, for the rest of the island's territory. o Building licenses are issued by the Building Authorities which include every Municipality within its own administrative area, and the Area District Officers for the rest of the island's territory.
CZ	This competence lies within the remits of local and/or municipal building authorities (part of the local/municipal administration). At national level it is covered by the Ministry of Regional Development.
DE	The local authorities are responsible for conducting the permit granting procedures. There is no single authority at the federal or federal state level for the granting of permits. The concrete permit granting procedure usually follows the relevant federal state legislation. Here, a permit requires a prior application to the local authority. Which authority responsible for road construction and maintenance is competent for giving consent to the actual laying or modification of telecommunications lines depends on the public transport infrastructure concerned (e.g. for federal trunk roads and motorways, this is the Federation, for rural roads, the federal state and for roads passing through built-up areas, the local authority).
DK	This is mostly covered by the answer to question 1. To sum up: In most cases, all relevant permits can be obtained from the local municipality. Municipalities issue digging permits, building permits, rural zone planning permits, and permits for use of municipal road areas. Municipalities can also grant exemptions from certain nature and heritage protections. For digging and construction within national road premises (motorways etc.), the Danish Road Directorate issues relevant permits. See also the answer to question 5, where the IT platforms for applications are described. The permits from the municipality are usually sufficient, so only one authority needs to be consulted. For some protected areas where municipalities can grant exemptions, the relevant national authority is entitled to be notified of the municipality's permit and/or to appeal the municipality's decision, but no application has to be made directly to the relevant national authority. For certain other nature/heritage preservation areas, municipalities cannot grant exemptions from the local protections. In such cases, additional permits from relevant national authorities, e.g. The Danish Environmental Protection Agency or The Danish Agency for Culture and Palaces may be needed. Normal procedure is starting with an application to the municipality, which usually identifies any needs for such additional procedures in the process. *Processing time – building permits* There are certain service targets for the processing of building permits by municipalities. This follows from an agreement between the Danish government and Local Government Denmark (KL, the association and interest organisation of the 98 Danish municipalities) on service targets for municipal procedures for business-related permits etc. The service targets state the processing time an applicant must expect for the processing of their application for a building permit in the individual municipality. For construction, the agreement states different service

	targets depending on the complexity of the construction work. For less complicated construction, the service target is 40 calendar days. For more complicated construction, the service target is 50-60 calendar days. The technical appendix to the service target agreement states that the service targets do not apply to construction where an EIA is obligatory or where the construction must first be made possible by adopting a new zoning plan for the area (which can be the case where a building permit would be impossible to grant under the current zoning plan). *Example of procedure for special permits: cultural heritage* Within the area of cultural heritage, which includes world heritage, listed buildings and monuments, sites of historical value, stone dikes or earth dikes dividing cadastral parcels and (archaeological) traces of ancient relics or monuments the following are the procedures for permit granting: The authority for passing a permit for world heritage and dikes dividing cadastral parcels are the municipalities. The Agency for Culture and Palaces will be notified by public hearings or by the municipality when a decision has been made after which the Agency is entitled to appeal. The authority for passing a permit for listed buildings and monuments, (archaeological) traces of ancient relics or monuments and sites of historical value is The Agency for Culture and Palaces. The Agency has 3 months to reply to inquiries and applications for changes on listed buildings and monuments, provided all necessary information for handling the inquiry has been received. For sites of world heritage, the World Heritage Committee will be notified, should any inquiries lessen or weaken the reason why a place has been given recognition as world heritage. The World Heritage Committee has no time limitation replying to inquiries. The (archaeological) traces of ancient relics or monuments are handled locally by 27 museums licenced by The Agency for Culture and Palaces. Information about survey, risks etc. must be addressed directly to the 27 institutions. The Agency for Culture and Palaces must approve the budgets for preliminary investigations within 14 days. *Example of procedure for special permits: ocean floor cables (Danish Coastal Authority)* This applies to permits as described in the response to question 1, point 1 d. An application for a concrete project will be subject to a 4-week hearing period where the case is coordinated with a fixed circle of relevant authorities and published on the Danish Coastal Authority's homepage. Based on the responses to the hearing and the Coastal Authority's own assessment, a decision on whether to grant a permit is passed. In this process, it is assessed whether the construction will be an issue for other stakeholders or users of the ocean territory, and impact on nature etc. is assessed. The Danish Coastal Authority has a good working relationship with the stakeholders applying for such permits and usually a permit can be issued, possibly with minor adjustments in consideration of other stakeholders/interests. *Procedures in other cases* Special permits may also be required in some cases from e.g. the Danish Environmental Protection Agency in cases where protections within

	the purview of these authorities apply from which the municipality is not authorized to grant exemptions. These procedures will differ in detail but be generally similar to the processes in the cultural heritage and coast areas.
EE	The building permit is granted by the relevant body, who manages the land. In case of local municipality land and roads, it is the local government. In case of state roads/highways, it is the Road Administration. In case of state owed land, it is the Ministry of Economic Affairs and Communications.
EL	Article 151 of Law 4727/2020 set the competencies for the permit granting procedure. In principle, the competent authority is the authority (either public or private) that is in charge for the maintenance of the area/road where the infrastructure will be installed. In most cases it lies within the local Authorities (Municipalities, Perfectures etc.) competencies. In some exceptional cases (e.g. archaeological sites, forest etc) a specific approval, issued by the competent authorities, is required, prior to the submission of the application.
ES	- Radio Project: the radio project must be authorized (some exemptions are foreseen for certain EIRP levels). This competence rests in the State (Ministry of Economic Affairs and Digital Transformation). - Installation of radio infrastructure in a certain location: a permit is required for the installation of this infrastructure. The competence rests on the municipality. Nevertheless, most of these installations have been exempted from the need of a permit in Spain. These exemptions are established in article 34.6 of Law 9/2014. - Installation of cable infrastructure with a certain layout: a permit is required for the installation of this infrastructure. The competence rests on the municipality. Nevertheless, an important number of these installation have exempted from the need of a permit in Spain. These exemptions are established in article 34.6 of Law 9/2014. And the procedure set out in article 45.4 of the same Law has also contributed to more agile deployments. - Civil works linked to any digital infrastructure deployment: a permit is required for the civil work. The competence rests on the municipality - Other procedures: concerning historical/artistic protection or environmental protection, each autonomous community may establish additional procedures. In this regard, it is common to find requirements concerning an environmental evaluation or study for the digital infrastructure installation in a protected area (or even not environmentally protected). In the case of cultural/historic/artistic protection, it is also common to find requirements related the need of retrieving a binding report from the Culture Council of the affected autonomous community in order to allow the municipality to process the permit request.
FI	The competence for permit granting lies with various different municipal and national authorities. The municipalities are responsible for granting the permits in their own region, also on the streets and roads owned by the municipality. Regional State Administrative Agencies are responsible for permit granting for water areas. National authorities grant the permits when deploying infrastructure e.g. on national roads

	and highways, as well as railroads.
FR	En France, le déploiement des réseaux peut faire l'objet soit d'une déclaration préalable, soit d'un permis de construire en fonction du réseau considéré, et s'il passe sur une propriété privée, d'une servitude. S'il est sur le domaine public, il peut aussi faire l'objet d'une permission de voierie ou d'une autorisation d'occupation du domaine public. Les délais sont les suivants : - Déclaration préalable : 1 mois (délivrée par le maire) - Permis de construire : 3 mois (délivré par le maire) - Permission de voierie : 2 mois (délivrée par le gestionnaire du domaine public concerné) - Servitudes : 1 mois pour notifier la demande au propriétaire puis 2 à 4 mois de délai pour les observations et 1 mois pour délivrer l'arrêté (délivré par le maire).
HR	It is centralised on a single web portal over which all the procedures are handled. Local and regional Physical Planning Offices that are handling the process of permit issuing are: • County Offices (20) • City Offices / Local Offices (132) The processes are described in detail under question 1. Additional to obtaining building permits it is also required to obtain permits Ministry of Health and HAKOM (only for mobile network).
HU	Competence for permit granting lies with **National Media and Infocommunications Authority** (NMHH) It is NMHH that is responsible for handling **authorization and supervision** of civil –construction works and development and deployment of any infrastructure related to the provision of electronic communications services in Hungary. In the interest of sound administration, NMHH has six offices throughout the country, making it more easily accessible to local clients. Additionally, by providing **expert assistance** throughout the whole of the development and the deployment process, any potential conflict of interests may also be successfully mitigated and solved with the help of experts from NMHH. Upon an electronic communications related civil works\ construction\development project reaches completion, commissioning of the network or network elements shall be subject to authority authorization or notification, as appropriate and as defined under law. Additionally, it is NMHH that has the legal task of investigating any and all **complaints** or reports made by residents and NGOs concerning electronic communications network development or deployment.

	NMHH's activity is supported by expert assistance provided by several other authorities form various fields[17], such as environmental protection, archaeological and historical preservation, utilities regulation, local government, etc. **Authorization of electronic communications structures[18]** Currently, there are two distinct procedures to have an electronic communication related structure legalized and authorized under law.An undertaking either has to request a **permit19** or fulfil an obligatory **notification20** toward the Authority under specific conditions defined in detail under law. However, even building or demolishing activities electronic communications infrastructure **not requiring notification to NMHH** (please see Q4) shall be subject to the same requirements as all other civil works requiring authorisation of any sort, especially with regard to provisions defined under the various decrees of the Government of Hungary, imposing regulations relating to urban development, town and country planning, building and construction. These requirements constitute a wide variety of legal requirements concerning safety, quality, environmental protection, national heritage protection under general Hungarian construction law. Building or demolishing activities relating to electronic communications infrastructure authorised via **notification only** to NMHH • For instance, in case of reconstruction, modernisation, technical enhancement or relocation of electronic communications infrastructure or certain elements of said infrastructure.

17 Please find respective provisions under Gov. Decree 531/2017. (XII. 29.) Annex 1, Subsection 7.) designating cooperating authorities from various fields of expertise.

18 *'Electronic communications structures' shall mean special structures defined in the Act on the Formation and Protection of the Built Environment, other specific structures installed for the purposes of electronic communications that include the cables, and objects in connection with cables and wireless connections such as covers, supports, protective equipment, signal equipment, etc., and engineering objects, in particular the accessories and support structures, antenna support structures (towers), antennas, poles, cable ducts, cable housings, channels, underground and surface signals and protective objects, as well as track-line and track-type electronic communications structures.'* As defined under Section 188 Subsection 12) of Act C of 2003 on Electronic Communications

19 Permit types: preliminary building permit (soon to be phased out), building permit, occupancy permit, retroactive building permit, permit for demolition)

20 Notification type: notification on building, on demolition, or change of the purpose of the motification

	• 15 days in advance of commencement of civil works clients send **advance notification** submitting all the necessary documentation • NMHH shall request the client to provide the missing documentation or to pay pending procedural fees within 5 days. Should the client not fulfil any of the above obligations under law NMHH shall dismiss request and consequently close down the case. • Within **8 days** of the complete and compliant advance notification NMHH **registers** the notification, and civil works can commence. If preconditions are not met, decides to close down the case. • Civil works constituting of either building or demolition of said infrastructure might only take place **within a 12 month timeframe beginning from notification** of said activities to NMHH. Having completed the civil works, there has to be a **follow-up notification** to NMHH. In its absence there shall be no legal way to gain occupancy of said infrastructure or any element of it, therefore provision of electronic communications services cannot be authorized. Furthermore, punitive fines shall also be applied in such cases. **Main steps of the current permit granting procedure[21] [22]** ○ **Clients send permit request, submitting all the necessary documentation to NMHH** ○ **Clients pay the administrative fees to NMHH** ○ **NMHH: Validation of certification to build** ▪ While evaluating all incoming official permit granting applications and notifications, NMHH thoroughly checks whether both client\contractor have fully complied with pertaining provisions under law, whilst also examining and evaluating fitness of respective construction drawings and all auxiliary documentation in order to ensure full compliance with regulations. ○ **NMHH: Notification of Clients** ○ **NMHH requesting supplementary files still missing or pending**

21 Please find an in-detail guide to the NMHH current authorization procedure, currently only available in Hungarian:https://english.nmhh.hu/article/742/Utmutato_elektronikus_hirkozlesi_epitmenyek_engedelyezesi_eljarasahoz

22 Procedure is described in detail under various provisions of NMHH Decree No. 14 of 2013 (IX. 25)

	With stipulation of a short deadline, in case of missing or pending required documentation, or absence of the proper remuneration of procedural fees designated by law, NMHH shall request the client to provide the missing documentation or to pay pending procedural fees within 8 days. The above activities may also be enacted electronically, should the client choose so. Should the client not fulfil any of the above obligations under law NMHH shall dismiss request and consequently close down the case. ○ **NMHH involves cooperating Authorities in the process[23]** • Requesting assistance of a cooperating competent authority shall be initiated by NMHH. • Should relevant documentation provided by the client allow, NMHH shall contact the cooperating competent authority electronically. • Should a cooperating competent authority deny permission to grant authorisation NMHH shall be automatically obliged under law to deny authorization on its part as well and the procedure shall be concluded with dismissal and consequent closing down of the case. ○ **Possibility to suspend the permit granting process** NMHH might suspend its process should any of the following conditions apply: • Should a client have any supplementary requests, for instance regarding right of way[24] Should a client ask expressively for suspension of the permit granting process, certainly only in case should legal provisions allow for such requested suspension under law. • Procedure has to be considered to be resumed on request of a client or any client involved in the process should legal conditions allow for resuming • Any procedure that requires initiation on the clients side shall be automatically deemed closed and terminated following a suspension longer than 6 months. • Any termination of an Authorization procedure shall be notified to the interested parties officially by NMHH.

Government Decree 531/2017. (XII. 29.) Annex 1 Subsection 7 designates possible competent authorities of various responsibilities those may be requested to serve as cooperating authorities in the field of their respective expertise in the authorization process

24 Please find respective provisions under Section 95 of Act C of 2003 on Electronic communications

	○ **NMHH decision on permit granting** ▪ NMHH ascertains whether all construction works have been carried out fully in line with the permit granted. ▪ In case of a positive decision, civil works can commence. ○ **Appeal against NMHH's decision** • An appeal may be lodged within 15 days from official communication of NMHH's decision. ○ **Within 30 days of the completion of civil works, a request for occupancy permit by the client is needed** ○ In case of a compliant process, NMHH issues **occupancy permit.** NMHH administrative procedures concerning civil works should be concluded within **60 days** **Legal background**25 **for the inclusion of local municipalities into the authorisation processes of electronic communications structures** The general sources of law in this regard are the Construction Act (Act LXXVIII of 1997) as well as Government Decree No. 253/1997 on the National Settlement and Building Requirements (in Hungarian: OTÉK). These are the primary sources of **zoning laws** applicable throughout the entire country. Based on these primary sources, local governments and municipalities must adopt their **structural plans, zoning maps** and **local building and townscape codes** applying to the given locality or municipality. In the special cases of civil work projects related to construction, development or deployment of electronic communications infrastructures or elements thereof, the required cooperation amongst local municipalities and NMHH are two-directional:

25 Act CLXXXIX of 2011 on Local Governments of Hungary

Act LXXVIII of 1997 on the Formation and Protection of the Built Environment

Govt. Decree 314/2012 (XI.8.) on the concept of urban development, on the strategy of urban development and on the urban development instruments, and on special legal institutions for urban organization Section 28 Paragraph (1)

Government Decree 253/1997. (XII. 20.) on national urban development and building requirements (The acronym "OTÉK" is used as a general designation of the regulation)

	1. On the one hand, the various levels of **local municipalities are obliged** under regulations of Govt. Decree 314/2012 (XI.8.) on the concept of urban development, on the strategy of urban development and on the urban development instruments, and on special legal institutions for urban organization **to seek in-advance expert opinion from NMHH** regarding either their strategies to be adopted as well as any de facto projects relating to electronic communications structures development or deployment. However currently legally not binding, **NMHH's expert opinion shall be taken into utmost account by the municipality's decision makers.** These request under law may either arrive directly from the Mayor's Office, especially in construction projects of strategic importance affecting the community as a whole, or directly from the office of the chief architect of a given municipality regarding individual building projects. 2. On the other hand, **regarding authorisation of electronic communications structures**, NMHH has the legal responsibility to ensure full compliance of any projects seeking authorization in any form with the pertaining local structural plans, zoning maps, local building and townscape codes applying to the given locality or municipality. **Therefore, whilst commencing authorization**, offices of head\chief architects of local **municipalities shall be requested to provide expert assistance** as representatives of cooperating competent authorities in the authorization process conducted by NMHH.
IE	Under the Planning and Development Act 2000, as amended, all development, unless specifically exempted under the Act or associated Regulations, requires planning permission. In this regard, Class 31 of Schedule 2 of the Planning and Development Regulations 2001, as amended, provides that certain classes of development carried out by a statutory undertaker authorised to provide a telecommunications service are, subject to specified conditions, exempted development from the requirement to obtain planning permission. Where the conditions and size thresholds specified in the exemption class are not complied with or are exceeded, planning permission is required. This Class 31 exemption makes no distinction between the various generations of wireless mobile telecommunications technology.

	If planning permission is required, a planning application must be submitted to the relevant local planning authority (there are 31 local planning authorities in Ireland who each make decisions on applications for permission in their functional area). In making decisions on a planning application, a planning authority must consider the proper planning and sustainable development of the area, having regard to the provisions of the development plan, any submissions or observations received from the public and the statutory consultees, and any relevant Ministerial or Government policies, including any guidelines issued by the Department. The right to appeal is a fundamental aspect of the planning system. An applicant, or anyone who has made a submission or observation in relation to a planning application, may apply to An Bord Pleanála26 to appeal a decision made by a planning authority in respect of an application for permission. In making decisions in respect of a planning appeal, the Board is required to consider the same matters as the local planning authority did in its consideration of the original planning application and will then reach its own conclusions in relation to the application. Under section 50 of the 2000 Act, anyone may apply to the High Court seeking judicial review of any decision made by a planning authority or An Bord Pleanála under the Act, within eight weeks of the date of the decision being made, in circumstances where they believe that they have reason to question the validity of such decision. The Court may accept applications for leave to seek judicial review beyond that timeframe where the Court believes that there are good and proper reasons for doing so or where it can be proved that there were circumstances beyond the control of the applicant that prevented them from making the application within the timeframe. Separately, the licensing of certain appliances (which includes overground electronic communications infrastructure and any associated physical infrastructure) on public roads and footpaths is governed by section 254 of the Planning and Development Act 2000, as amended (the Act), and associated Regulations. This licensing system is intended to ensure that a planning authority can control appliances being placed on public roads or footpaths, in particular to prevent obstructions or other hazards to persons using the public road or footpath. Therefore, in considering an application for a licence, a local authority, or An Bord Pleanála on appeal, must have regard, inter alia, to the convenience and safety of road and footpath users, including pedestrians. A licence may be granted by the planning authority for such period and upon such conditions as may be specified, including conditions in relation to location. Where, in the opinion of the planning authority, a structure causes an obstruction or becomes dangerous, the authority

26 An Bord Pleanála is responsible for the determination of appeals and certain other matters under the Planning and Development Act 2000, as amended, and associated legislation, and for the determination of applications for strategic infrastructure development including major road and railway cases. Further information available at: http://www.pleanala.ie/about/function.htm.

	may by notice withdraw the licence and require the licensee to remove any relevant appliance, apparatus or structure at his or her own expense. Development that is carried out in accordance with section 254 of the Act is deemed exempted development for the purposes of the Act.
IT	According to the provisions of the Italian Electronic Communications Code, in Italy, local Authorities (municipalities, provinces, concessionaires of public infrastructures such as roads and railways, superintendent authorities) have the competence for permit granting. The authorities responsible for the management of public ground take decisions for the applications for the granting of the right to install infrastructures, including works for the construction of high-speed optical fiber electronic communications networks capable of providing services of ultra-broadband access. (Art.86 Decree no.259/2003"). If the installation of electronic communication infrastructures requires the construction of civil works, the interested parties must submit a specific application to the Municipality that owns the areas. The administration responsible for the procedure may request supplementary documentation related to the application submitted, for one time only, within 10 days from the date of receipt of the application. Within 30 days from the date of receipt of the request, the administration responsible of the procedure can convene, with a motivated provision, a services conference (Conferenza dei Servizi), with all the representatives of the administrations involved (the services conference must rule within 30 days). By issuing the authorization, the administration authorizes the interested part to carry out the excavations indicated in the project and to use the public soil or subsoil necessary for the installation of the infrastructures. (Art.88 Decree no.259/2003) Moreover, local authorities authorize the installation of infrastructure for radioelectric systems, with the verification by the competent body. Therefore, the interested parties must present the request authorisation for the installation of infrastructures to the local authority. At the same time, the interested parties send a copy of the request to the competent body which takes a decision within thirty days from the communication.

	Within 15 days of receipt of the request, the administration responsible for the procedure may request additional documentation for the application. Within 30 days of receiving the request, if an interested Administration has expressed a reasoned disagreement, the Administration in charge of the procedure convenes a services conference, in which the representatives of the Administrations of the local authorities concerned take part, as well as the contact persons of the body in charge of control. The conference of services expresses an evaluation within 30 days of its first convocation. (Art.87 Decree no.259/2003)
LT	As it was mentioned above, local Municipalities (in Lithuania there is 60 municipalities) serve as a SIP for excavation, fencing and construction of engineering structures or buildings (real estate objects) and provides permits for building structures and for excavation and fencing. Information is accessible on Municipalities websites, e.g. https://paslaugos.vilnius.lt/service-list/Leidimu-kasineti-ir-aptverti-isdavimas, or by phone, or in person. According to the Law of on the Right to Information from State and Municipal Institutions and Bodies, this information is available to anyone. Regarding the information about permits for construction, it is accessible, and permits are issued via the information system "Information gates for construction" on the website http://infostatyba.lt/ and also in local municipalities. This information is accessible to anyone. Terms (maximum) for provide permit for excavation – 14, for building structure/building – 30 working days.
LU	Permit granting is decentralised and done on a local level by local competent authorities called municipalities ("*communes*"). The Luxembourg municipalities predate the very birth of the Luxembourg state which has existed, in its current form, since the Treaty of London of April 19, 1839. Currently, the Grand Duchy has 102 municipalities. The organization of Luxembourg municipalities is based on the principle of decentralization which finds expression in Article 107 of the Constitution and in the amended municipal law of 13 December 1988. The Constitution confers municipal autonomy, that is to say the power to manage themselves by their own bodies the territory and the municipal interests. They can take municipal rulings, which are binding measures that have the same enforceability as the law.
LV	A submission for construction of electronic communications network should be submitted to the building authority or institution which carries out the functions of the building authority via the Construction Information System. It could be the State Construction Control Bureau or regional/local building authority. In case of installation of radio equipment or mobile base station additional submission should be submitted to Electronic Communications Office of Latvia.
MT	The authority for transport in Malta is the only regulatory Authority in infrastructure instalments on public roads service/utility providers. Applicants are to submit their requests for works through the RPS (Road Permit System). Further information could be found by clicking here .
NL	As stated in the previous answer, the competence for permit granting lies mainly at the local level, at municipalities. Permit granting for civil

works needed with a view to deploying elements of VHCN, mainly involves the granting of permits for:

- carrying out works in or on public land related to the installation, maintenance and removal of telecom cables;
- the construction of antenna installations for mobile telecom which are higher than 5 meters. Antenna installations up to 5 meters are usually not subject to a permit and are deployed according to the procedures of a covenant.

Below is a brief description on the design and different steps of the permit granting procedures with regards to the aforementioned civil works.

<u>Construction, maintenance or clearance of telecom cables</u>

The legislation concerning the installation, maintenance and removal of telecom cables is laid down in the Dutch Telecommunications Act. According to this law, the titleholder or manager of public land shall be obliged to tolerate that cables are installed, maintained, or removed in and on said land. This often concerns the public land of municipalities. The telecom operator that intends carrying out work in connection with the installation, maintenance, or removal of cables shall notify the local government, in writing, of such intention and shall then attempt to achieve agreement within 8 weeks regarding the civil work concerned. The municipality (municipal executive) must provide a consent, by means of a permit, to the applicant telecom provider for carrying out the civil works. The municipality may include certain rules in its consent decision, including the time and location of the work, the manner of implementation of the work and the promotion of shared use of facilities. Also, the consent often includes the condition that a soil investigation must be carried out. The municipal council shall determine certain rules in the form of bylaws, for the carrying out of the civil work, including implementation of the work and the promotion of shared use of facilities, which are published on the website of the municipality. For the handling of applications of consents, municipalities often make use of an (commercial) electronic information system. There are various information systems in use by municipalities, but roughly about two thirds of the municipalities use the same system.

Furthermore, there are also other instances where in the case of civil works for the deployment of telecom cables permits of other instances are required, for instance from:

- provinces (in case of deployment of cables along provincial roads);
- the Ministry of Infrastructure and Water Management (in case of deployment of cables along national roads);
- regional Water Authorities (in case of deployment of cables in, on and near waters, flood defenses and roads managed by the Water Authority).

<u>Construction of antenna installations for mobile telecom</u>

	For the construction of antenna installations for mobile telecom, in most cases no permit is needed. However, mobile telecom operators, municipalities and the national government (Ministry of Economic Affairs and Climate Policy) have, on a voluntary basis, established rules and procedures (laid down in the so called Antenneconvenant) regarding the deployment of antenna installations for which no permit is required. In general these rules apply to antenna installations shorter than 5 meter. For the construction of antenna installations of 5 meter and higher, a so called environmental permit is needed from the local government (mainly municipalities) in accordance with the Dutch General Provisions for Environmental Law Act. Also in some other cases, like the deployment of antenna installations on (national) monuments, an environmental permit is needed. An environmental permit must be granted within 8 weeks. National legislation on (environmental) permit granting rules for the deployment of antenna installations is mainly the responsibility of the Ministry of the Interior and Kingdom Relations, whereas the responsibility for the actual permit granting lies mainly at municipalities. Municipalities can include certain conditions in their environmental destination plan (e.g. the location where antenna installations can be deployed) against which environmental permits are assessed. Mobile telecom operators can make use of the website 'Omgevingsloket' to check and apply for an environmental permit needed for the deployment of an antenna installation. Alternatively, mobile operators can apply for such permit though the website of the respective municipality.
PL	As far as the granting of permits is concerned, the general procedures are as follows (regardless of the matter to which the permit is issued). The interested party shall submit a relevant application to the permit granting authority (depending on the case, it may be e.g. a local government body, government administration, etc.). This authority then, no later than within the deadline specified in the regulations, examines the legal status of the application - it checks whether all the conditions specified in the regulations for issuing the permit have been met, if necessary the applicant is called upon to complete the application. The standard time for examination of the application is one month, however, individual acts may set different deadlines. The deadline may also be extended, e.g. if the nature of the case is particularly complicated, or if arrangements with other authorities are required. After receiving the permit, the applicant has to wait for the permit to become effective. This is the time when other interested parties can appeal against the decision of the authority. Usually this time is two weeks from the delivery or announcement of the decision to grant the permit. Once the decision on the permit becomes final, the applicant may, for example, proceed with construction work, or launch the transmitters, or any other activity for which he applied to the authority. See table below for more details. [See table in PL Final Input]
PT	Two different procedures apply, respectively, for the antenna installation (and the infrastructure that support the antenna), and for the construction of physical infrastructures suitable for accommodation of electronic communications networks. Regarding the antenna installation process there are two (main) licensing entities: 1. NRA (ANACOM) within the scope of licensing of radio communication networks and stations (operation);

	2. Municipalities with competence in the scope of licensing the construction/installation of the physical infrastructures to support the antennas. In this sense, a Municipal authorization regime27 applies to the installation of support infrastructures for radio communication stations and respective accessories. According to this, a request (filed under the terms of article 5) must be presented to the president of the municipal council. The request must be decided within 30 days. During this period, entities outside the municipality may be consulted. If no communication is received from the president of the municipal council, the applicant may begin the installation of support infrastructures for the radio communication stations, having previously handed a request for the issue of a payment slip of the due taxes. Regarding the construction of physical infrastructures suitable for accommodation of electronic communications companies, according to the Portuguese legal framework (see above answer), there is a requirement for entities to carry out a prior communication to the municipality before starting the construction of such infrastructures. The prior communication procedure consists of a declaration that, if properly instructed, allows the interested party to proceed immediately with the execution of certain urban operations after the payment of the due fees, dispensing with the practice of any permissive acts. The factual elements of the prior communication are established in accordance with the provisions in number 4 of article 35 of DL555/99, and must peremptorily include: a) Confirming evidence of the prior announcement of the undertaking of construction works, provided within the time limit and under the terms established in article 9 of DL123; b) Statement of consultation of SIIA, showing the absence of information in SIIA relative to suitable Infrastructures integrated in the public domain that enable meeting the needs of the interested electronic communications company or confirming evidence of refusal of access based on one of the situations foreseen in number 2 of article 14 and in article 15 of DL123; c) Confirming evidence of the granting of the request to attribute right of way or of being within the time limit, established in numbers 4 and 6 of article 6 of DL123, if applicable to the case in question. Does it include various (national/regional/local) competent authorities or do you have a concentration on a single authority or centralised management? Regarding the construction, access and use of suitable infrastructures, there is no concentration on a single authority, thus there is no

27 Established in Decree-Law 11/2003 of 18th January.

	centralized competence and/or management. The legal framework explained above is applied by each of the 308 municipalities. The prior communication above referred has to be sent to the president of the municipality, thus, each Portuguese municipality is a competent authority regarding this matter.
RO	According to Law no. 50/1991 the authorities responsible for issuing the building permits are the local public administration units. Therefore, the competent authority for granting a building permit is generally the mayor of the territorial administrative unit where the construction will be built or, in some exceptional cases, the president of the county council where the works take place. The urban planning certificate indicates which approvals/agreements, and must be obtained by the applicant as a condition precedent for the issue of the building permit. In addition, several other approvals may be requested under Romanian law. By way of example, the following approvals are often requested if the specifics of the project demand it: o Approvals from other utility suppliers; o Approvals from the Ministry of Culture in relation to archaeological sites, historical monuments or protected developed areas; o Approval for a change in a designated agricultural use or for including the land on which a building will be developed within the inner limits of a locality; o Approval from the Romanian Civil Aeronautics Authority if the building will be developed in the vicinity of an airport; o Approvals regarding connections to municipal infrastructure; o Approvals regarding fire safety, civil protection and the protection of human health; o Approvals regarding specific areas subject to restrictions imposed by special regulations; • Issue of the environmental approval – the environmental approval document is a compulsory part of the documentation which must be filed in order to obtain a building permit. The competent authority issuing the building permit will refuse any building permit application which is not accompanied by a full set of supporting documentation. Considering this, Law no. 159/2016 stipulates that the local public administration authorities with attributions in the issuance of construction authorizations shall publish all relevant information regarding the conditions and the procedure applicable to authorizing the construction of communications networks and the associated physical infrastructure elements. All relevant information shall be published on the local public administration authority's websites, if available, or – in the absence of such website – by posting in visible spots, at their headquarters. According to the latest amendments of Law no. 50/1991, the urbanism certificate may be issued in a digital form, through electronic mail, in case the applicant has expressed its consent in this regard. Also county councils and county capital, have the obligation to set up the commission in charge with the sole permit issuance. Upon the applicant request filed in electronic format, such commission shall provide, at a cost, services for obtaining the approvals/agreements required for the authorization of the construction works. The urban planning certificate must be issued no later than 15 days and the building permit must be issued no later than 30 days.
SE	Sweden has 290 municipalities and each municipality has a building committee. The municipalities are responsible for the planning of land and water areas within their geographical boundaries. It is the building committee in each municipality that has the authority to adopt plans

	and grant or reject applications for building permits. The Planning and building act and the Planning and building ordinance is binding for all of them, but review and considerations is made by every separate building committee. An application for a building permit must be made in writing, contain blueprints and specifications and other relevant information needed for the review. It is not a requirement to use a certified architect/designer. The developer shall propose who should be in charge of the inspection and the person in charge of the inspection must be certified. The developer has the full responsibility for fulfilling all legal obligations pertaining to the building or the construction. When reviewing the building permit application there is different requirements to fulfill depending on if the building or construction is in or outside an area with a detailed development plan. The municipality has to make a decision about the permit within 10 weeks, starting from that point when the application is complete. In special cases, more complex, you can extend the time to 20 weeks. After the review of the application of building permit the building committee grant or reject the application. If they grant get a legally binding permit. The decision can be appealed by those concerned within three weeks. When the building permit has been granted you need to have a tecnical meeting. You also need a starting clearance to begin construction works and a final clearance to start using the construction.
SI	The competent authority for issuing building permits for all electronic communications network facilities (which is an exception, as described in pt. 1) is the locally competent administrative unit. An administrative unit is a territorially divided unit that performs administrative tasks and responsibilities of individual ministries. This is not the same entity as the municipality. For buildings of national importance, the competent authority is the Ministry of the environment and spatial planning.
SK	Permit granting procedure is in Slovak Republic under the competence of **construction offices on the municipality level**. Regarding the information from March 2020, we have 504 construction offices, from which 315 construction offices are for 1 municipality and the rest, 189 construction offices are for associated municipalities (2 or more). The competence of the construction office is a delegated performance of state administration. And is governed and specified in the Construction Act. The municipality, which is the seat of the joint municipal office, shall notify the regional construction office of its establishment, as well as the list of municipalities for which the joint municipal office performs tasks in the area of zoning planning and building regulations; the ministry publishes the list via the internet.

	In cases in which the municipality acts as a construction office in the first instance in administrative proceedings, the **regional construction office** performs state administration in the second instance. In the case of a construction or measure to be carried out in the territorial district of two or more construction offices, the relevant construction office shall be designated by the regional construction office. In the case of a construction or measure to be carried out in the territorial district of several regions, the relevant construction office shall be determined by the **Ministry of transport and construction**. If the municipality is competent to act as a construction office and is also the applicant, builder or owner of the building, the regional construction office shall determine which construction office will conduct the proceedings and issue a decision.

***Question 3**: Please name already existing and/ or planned best practices in your country as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Tacit approval processes with regard to the applications necessary for the roll-out of broadband networks in the absence of an explicit decision within the four-month period according to Article 7(3) of the Broadband Cost Reduction Directive (BCRD).*	
Member State	National best practice
AT	Tacit approval processes are currently not provided by law. Best practice is also called into question as such a best practice appears to be not recommendable for building projects. Competences of public sector bodies vary depending on the content of the permit and the Federal States have competences in some permits (e.g. building law, nature conservation, townscape)
BE	In the law of 1991 concerning the reform of certain public companies, art. 97/98 states that every operator is allowed to use the public domain to install cables and equipment. The operator wishing to install cables or other equipment has to ask the permission of the public body in question which has two months to reply. If it does not reply within this delay, the request is deemed to be accepted.
BG	
CY	➢ For fixed infrastructures the maximum time for granting permits is 4 weeks according to Order 10/2012. The non-observance of this time period by competent Authorities is considered as an implicit approval. ➢ For masts, the average time for granting permits, based on our experience, varies between the different Town Planning and Building Authorities. Irrespective of these differences, the Planning Authorities must reach a decision on an application to receive the relevant permits within a period 6 weeks from the submission of the application (According to the Minister of the Interior Order 3/2006). Unfortunately there are cases that the period of 6 weeks does not apply especially when a license needs to be processed (town planning and/or building permit) through the municipalities.
CZ	The Czech Telecommunication Office discusses the matter without undue delay and decides on the obligation to conclude the contract or to provide data, or dismiss the application for a decision. If the matter cannot be dealt with without undue delay, the Office decides on a dispute concerning access to physical infrastructure within 4 months, on a dispute concerning an on-site inspection, on a dispute concerning the coordination of civil works, on a dispute concerning access to in-building physical infrastructure and on the determination of an obligation to provide a minimum data set and data on civil works within 2 months. If the Office does not provide the decision in the set deadlines, it means no tacit approval for any further actions. The procedures follow generally the provisions of the Administrative Procedure Code. The administrative body handles matters without undue delay. If the administrative body does not perform the acts within the statutory time limit or within a reasonable time limit, if the legal time limit is not set, the provisions on protection against inactivity can be used to arrange the remedy.
DE	The assumption of approval in broadband roll-out in accordance with section 68(3) of the Telecommunications Act (TKG) limits the period for the granting of rights of way to a maximum of 3 months. After expiry of these 3 months, the consent of the authority responsible for the

	construction and maintenance of public ways is deemed to have been given for the rights of way (assumption of approval). Thus, it is ensured that there is a maximum processing period for submitted applications. If the complexity of the case justifies it, this period for tacit approval can be extended by one month if such a request is communicated in a timely and duly substantiated manner. In the past, problems regarding the completeness of application documents have led to procedural delays. However, only the submission of a complete application sets in motion the 3-month period for the assumption of consent. In accordance with the Telecommunications bill for the transposition of Directive (EU) 2018/1972, in the future, there is to be a legal fiction also with regard to the completeness of the applications in order to further accelerate the procedure. The application is to be deemed complete - which means that the aforementioned 3-month period for the assumption of consent is set in motion - if the public authority fails to raise objections within one month after receipt of the application. Within the framework of the recast of the Telecommunications Act (TKG) for the transposition of Directive (EU) 2018/1972, the granting of rights of way for minor construction measures is moreover accelerated further: in accordance with the Telecommunications bill, construction measures that, in accordance with the assessment of the telecommunications company, constitute minor construction measures initially merely have to be reported to the authority responsible for the construction and maintenance of public ways. If the authority responsible for the construction and maintenance of public ways does not request the reporting telecommunications company to submit an application for consent to the rights of way within one month, tacit consent to the rights of way is deemed to have been given. In this way, it is possible to grant rights of way within one month.
DK	No answer. *<u>Comment:</u> Denmark is sceptical about tacit approval processes, and no tacit approval processes have been reported from any Danish authorities in the coordination of this response. Where Denmark requires a permit, this is due to a) important public concerns regarding e.g. traffic safety and traffic flow (digging permits) or b) various important concerns regarding, among other things, the avoidance of duplicating existing structures (resources), landscape, nature, urban planning etc. (building / rural zone planning permits etc).* *In Denmark, digging permits are generally granted relatively fast and well within the four-month period. For masts, the most time-consuming issue is often not the formal permits, but the identification of a suitable area of land and entering into a leasing contract (often with private third parties), which is not formally part of the permit process or the four-month period. In Denmark, the situations where tacit approval might theoretically be accepted would largely overlap with the situations where an exemption from permits could equally well be considered. In any rare cases where processing a permit exceeds a four-month period, tacit approval of especially the construction of a mast would not have public support in Denmark, as masts are typically controversial; for digging works, works commencing without the ensuring of compatibility with traffic etc. that is part of the permit process may hinder traffic and be unsafe. As mentioned in the answer to question 4, some exemptions from permit requirements exist in cases where this is deemed appropriate. In summary, Denmark proposes that the sub-group should focus on identifying best practices for exemptions rather than tacit approval procedures. Denmark believes that using clear a priori exemptions instead of tacit approval procedures is in itself a best practice, as exemptions create more clarity.*

EE	-
EL	Law 4070/2012, in particular Annex X, includes provisions for tacit approval in case that the licensing procedures have not been accomplished within 4 months, pursuant to the provisions of BCRD. An electronic platform (one-stop-shop) that will implement the whole permit granting procedure and will facilitate the monitoring of the timing, is under preparation.
ES	Legal framework in Spain includes the tacit approval for deployment plans when, once it has been submitted by the operator, the competent public administration has not issued an explicit decision. (Article 34.6, General Law on Telecommunication). In this case, three months after the municipality has received the deployment plan and an explicit decision has not been issued, it is considered tacitly approved. Please read next point of the document to understand what is the function of a deployment plan.
FI	The government agency (Pirkanmaa Centre for Economic Development, Transport and the Environment) responsible for granting permits for network deployment alongside state-owned roads does not require the builder of the network to apply for a permit before starting certain amendment works of existing network infrastructure. However, it should be noted that for more comprehensive network deployments a prior permit is still required.
FR	L'article L231-1 du code des relations entre le public et l'administration fixe le principe selon lequel le silence gardé par l'administration durant deux mois vaut accord sauf exceptions. En matière d'urbanisme, l'article R.423-23 du code de l'urbanisme fixe les différents délais qui sont bien inférieurs à 4 mois (un mois pour une déclaration préalable, trois mois pour un permis de construire) toujours avec le même principe du silence vaut accord. En revanche, dans le cas des permissions de voierie, le silence du gestionnaire du domaine public concerné vaut refus. Il ressort, en effet, d'un impératif d'ordre constitutionnel que ne peut être mis en place un régime d'autorisation tacite du domaine public.
HR	There is no such process defined.
HU	• In Hungary the rules of administrative procedures concerning civil works are laid down in Act CL of 2016 on General Public Administration Procedures, Act C of 2003 on Electronic Communications, and in the NMHH Decree 14/2013 on the Setting of Electronic Communications Structures and the Related Administrative Procedures. Since these legal acts **do not recognise the notion of tacit approval**, the conclusion of administrative procedures concerning civil works requires an explicit decision. • In accordance with the aforementioned legal acts, administrative procedures concerning civil works should be concluded within **60 days** (well within the deadline specified by Art. 7(3) of the BCRD).
IE	Section 254 of the Planning and Development Act 2000 applies to applications for a license to erect, construct, place or maintain over ground electronic communications infrastructure and any associated physical infrastructure. It provides that where a planning authority does not make a decision within a period of 4 months commencing on the date of receipt of the application, a decision of the planning authority to grant the license shall be deemed to have been made following expiration of that period of 4 months i.e. a deemed decision to grant a licence.

	Where additional information has been sought from the applicant in relation to the application, and the planning authority has not made a decision within a period of 4 months of receiving the applicants response to the request, a deemed decision to grant a licence shall deemed to have been made following the expiration of that period of 4 months In the case of a deemed decision to grant a licence, the network operator concerned must, in advance of commencement of the related works, inform the relevant planning or road authority.
IT	Tacit approval processes are already foreseen in the Italian regulatory framework. It applies within a maximum of 90 days from the submission of the application, but also further forms of simplification are provided for in the aforementioned rules (tacit approval period reduced to 30 days for particular hypotheses or possible installation with mere communication/self-certification addressed to the reference body). However, according to national legislation, the indicated legal deadlines cannot be guaranteed in the event of interventions involving risks to road safety.
LT	We consider as a good practice in our country, that there is no specific permits needed to deploy fiber-optic (cable) networks and especially if you are planning to build it along the roads, an operator does not incur significant costs for network planning or access to the road complex land. Only the permission of the road administrator is required. Perhaps it should be mentioned that in Lithuania roads are owned by state (and managed by municipalities and Road administration).
LU	If the municipality doesn't answer within 3 months, the demand is deemed refused, which automatically gives the demander the right to do an appeal in court.
LV	A person shall propose construction and submit the information and documents necessary for the implementation of a construction intention to the building authority or an authority which carries out the functions of a building authority, using the Construction Information System. State and local government authorities and owners or lawful possessors of external engineering networks shall issue in the Construction Information System the technical or special regulations necessary for the implementation of the construction intention, and also agreements or permits. Construction permit should be issued within 30 days.
MT	When a private operator or a public body submits a request trough the RPS this will be processed within 10 days. This process can take less time, depending on the consultation with other local authorities such as EneMalta, to give their no objection to the permit request.
NL	Dutch legislation complies with the requirements stated in Article 7(3) of the Broadband Cost Reduction Directive to grant or refuse a permit within the four-month period and the necessity to motivate any refusal on the basis of objective, transparent, non-discriminatory and proportionate criteria. The granting of permits for both the construction, maintenance or clearance of telecom cables and the construction of antenna installations, must take place within 8 weeks. At this moment, the Netherlands does not make use of tacit approval processes and has no intents to do so.
PL	Notification of certain construction works (see point 5.2 of the table above) does not require a relevant authority to act if such authority does not have any objections to a notification. Similarly the notification of EMF emission does not require a relevant authority to act.
PT	The NRA (ANACOM) has no further information on this matter. The article 7(3) of BCRD is transposed into Portuguese national legislation by

	Article 7 of DL123/2009, and articles 33, par 2 and 35, par 1 of DL555/99 (see answer to question 1). Notwithstanding, as the instructional elements of the prior communication must include evidence of the granting of request to attribute right of way (for infrastructures integrated in municipal public domain), it should be noted that no more than 30 days may elapse between the date of submission of this application and the decision granting the right of way. In this context, if the Municipality does not comment within that period, this will correspond to the attribution of the right of way - see article 6 (6) of DL123/2009. • Best practices identified in other MS or non-EU countries Regarding the practices identified in other MS, 2018 WIK Report "Study on Implementation and monitoring of measures under BCRD", analyses the matter regarding the permit granting procedures.
RO	Given some national experiences with the chaotic development of public electronic communications networks, the competent authorities have not supported such a solution. According to Law no. 50/1991 the general deadline for issuing the building permit is 30 days from the date of filing the complete permit request. Failure to comply with the terms of issuance provided by the Law no. 50/1991 constitutes contravention.
SE	-
SI	The majority of electronic communications networks elements do NOT require a granted building permit in Slovenia, as described in pt. 1. The general deadline for granting other building permits is 2 months (Building Act, Article 46). No specific consequence for expiration of this deadline is set. General damnities regime applies.
SK	Tacit approval process in the absence of an explicit decision within 4 months period regarding broadband roll out is not applicable.

***Question 4**: Please name already existing and/ or planned best practices in your country as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Fast-track permit granting procedures and/ or permit exemptions where appropriate. If such procedures are in place or planned, please name the types of network deployment, which have been defined, that would benefit from these.*	
Member State	National Best Practice
AT	Exemptions from permits are partly provided for in building regulations. Best practices can be reported: e.g. Lower Austria Building Regulations 2014: § 17 "Projects that do not require approval or notification are in any case: ... 20. the construction of structures in connection with the provision of public communication networks (physical infrastructures in the sense of § 4 Z 12a such as junction boxes, conduits), with the exception of masts; ... "; Carinthian Building Regulations 1996 "§ 2 (2) This law does not apply to: ... g) structural systems of the communication infrastructure, with the exception of structural parts; ... ".
BE	<u>Regarding permit granting for antennas, in the Flemish Region:</u> • Antennas with less than 2W ERP (Effective Radiated Power) do not need a certificate of conformity. • Between 2 and 20W ERP, a certificate is only needed if a person can enter the security zone of the antenna (there is a table with distances in the legislation).
BG	
CY	➢ The masts that satisfy the following criteria, are treated as if they have received the necessary planning permit by the Planning Authority and, therefore, an application is not required to be submitted to the Planning Authority: ○ Below 6m height if they are installed in buildings of up to two floors ○ Below 9m height if they are installed in buildings above two floors ○ Below 25m height if they are installed on the ground outside urban areas
CZ	See question 1.
DE	At the **federal level**, various measures have been taken that aim to accelerate permit granting procedures for the roll-out of public telecommunications networks: The **Telecommunications Act (TKG)** is being comprehensively revised and recast for the transposition of Directive (EU) 2018/1972 - European Electronic Communications Code. Among other things, provisions on a privileged treatment of minor construction measures (see answer to question 3), on the completeness of applications for the rights of way-based use of roads and waterways (see answer to question 3) as well as a provision on a greater streamlining of permit granting procedures (one-stop shop) (regarding the latter, see answer to question 7) have been included in the bill.

	Permits for construction works necessary for the deployment of VHC networks are to be granted within three months in accordance with the Telecommunications Act (TKG). This period can by extended by a maximum of one month in complex cases. The **Building Land Mobilization bill** and the **Investment Acceleration bill** contain provisions that aim to, on the one hand, support the nationwide roll-out of mobile communications and, on the other hand, accelerate the permit granting procedure for mobile communications installations. In Germany, there are Model Building Regulations, which the federal states have developed and are continuously updating: These also include rules on the requirement to obtain a permit and on the exemption from the requirement of a permit granting procedure. As early as in September 2019, the Standing Conference of Federal State Ministers and Senators responsible for Urban Development, Building and Housing adopted an amendment to the **Model Building Regulations** (section 61(1)(5a) of the Model Building Regulations). For mobile communications, an expansion of the range of antennae (including masts) not requiring a permit granting procedure was incorporated. In accordance with the new rule, antennae up to a height of 15 m on white land (i.e., in simple terms, outside of continuous built-up areas and outside the scope of a qualified development plan) do no require a permit granting procedure (previously up to 10 m). Thus, they do not require a construction permit, nor do they require any other construction supervision procedure. This provision results in a faster roll-out of the mobile communications network. Moreover, it is clarified how the maximum height is determined for antennae on roofs. If located on roofs, antennae (including masts) up to a height of 10 m from the intersection of the installation with the roofing do not require a permit granting procedure. The individual federal states have implemented these provisions to a large extent or are currently implementing them. Furthermore, there already are provisions for the acceleration of procedures, e.g. **time-limits for decisions on applications**, in several of the federal state building regulations. The City of **Hamburg** offers network operators the conclusion of **framework agreements** that render the involvement of the authorities in certain parts of the consent procedure for path requests/excavation permits unnecessary. A procedure identified as best practice in **North Rhine-Westphalia** is based on an early assessment, by way of **joint on-site meetings,** of intended paths by holders of rights of way and representatives of the authorities responsible for granting the permits. The early identification of local particularities, and the, ideally, immediate clarification of how they can be dealt with can reduce the duration of the permit granting procedures. In addition, the risk of subsequent rectifications and changes of plan becoming necessary can be reduced significantly. What seems particularly effective here, is the involvement of, ideally, all competent authorities already ahead of the permit granting procedure. In some cases, holders of rights of way enter into **agreements for the concretization of their collaboration** and the legal requirements with local authorities in North Rhine-Westphalia. Here, early agreements help prevent disagreements during the permit granting procedures and construction execution.

DK	See the answer to question 1 for descriptions of the types of permits mentioned here. Overall, some exemptions exist, especially for smaller works, such as installing antennae on existing structures. ***Exemptions from digging permits (cables etc.):*** Emergency repairs on cables that cannot be postponed are exempt from both the requirement to apply for a digging permit and to run a query in LER, but must be reported to the road authority and queried in LER as soon as possible after the work has been completed. This means that such work can be done immediately without prior application processes. An Administrative Order based on a provision in the Road Act gives municipalities the option to allow registering small-scale, short-term digging works after completion rather than applying for a permit beforehand. For such small-scale works in cases where municipalities allow this, a query in LER (Danish Register of Underground Cable Owners) is still mandatory, meaning that you will have to check LER in order to have information allowing you to avoid digging damage, but you will not have to wait for a permit to start work. ***Exemptions from building permits (antennae, masts, equipment cabinets):*** According to Section 5, no. 11 in the Building Regulation, antenna systems used for radio communications in electronic communication networks (as defined in Section 2, nos. 4 and 5 in the Telecoms Act), including radio frequency based or cable based telecoms infrastructure, are exempt from the requirement of a building permit. The construction must still comply with the Building Regulation, but no prior building permit is needed. A new exemption is expected to enter into force on 1 January 2021 for small-area wireless access points as defined in the Mast Act (where the definition of small-area wireless access points from the EECC is implemented). ***Exemptions from rural zone planning permits (required only in rural zones) (antennae, masts, equipment cabinets):*** According to the Planning Act, Section 36, paragraph 1, no. 17, rural zone planning permits are not required for panel antennas for mobile communications with accessory radio modules and transmission links in neutral colour which are installed on existing masts used for public mobile communications, on silos or tall chimneys, when the structure's height is not thereby increased. Further, according to the Planning Act, Section 36, paragraph 1, no. 19, rural zone planning permits are not required for equipment cabinets in neutral colours with a ground area of maximum 2 sqm and a height of maximum 2.5 m used for the panel antennas referred to in no. 17, which are installed directly next to the mast, silo or tall chimney. The stipulations mean that panel antennas and equipment cabinets fulfilling these criteria can be installed without further requirements arising from the Planning Act. If panel antennas and equipment cabinets do not fulfil the requirements in Section 36, paragraph 1, nos. 17 and 19, a rural zone planning permit is required to install them. ***Faster environmental assessment (where relevant):*** Pursuant to the Environmental Assessment Act, section 15, a construction project owner can request that a project within the scope of Appendix 2 to the Environmental Assessment Act must undergo an environmental assessment without a prior screening. ***Scope of exemptions:*** The exemptions for antennas from building permits and/or rural zone planning permits will often lead to no formal permit being necessary to install antennas. It is also possible for one type of permit to be necessary but not the other. Where other rules apply

	as well, such as certain protections (nature/heritage conservation), a need to obtain exemptions from these protections may arise even though no other permits are needed. Nature and heritage conservation rules may also apply to digging works. Where a zoning plan applies, this has to be adhered to, even when no permit is needed.
EE	In case of putting new fibre-optic cables on existing electricity poles, no additional permits need to be applied from the municipality. Only the agreement with the owner of the electricity poles needs to be reached and the general safety of people and traffic need to be maintained. In case of building the cable line that connects broadband network termination point with access point in end-users premises, no notification has to made to municipality.
EL	Law 4727/2020, Article 151, paragraph 15 provides the mandate for a Joint Ministerial Decision (Ministry of Digital Governance and Ministry of Environment and Energy) which will include provisions for either fast-track procedures or/and permit exemptions. We are now elaborating on the issue.
ES	Spanish law replaces prior authorization of installations, operating or activity license, environmental license and other similar permits by a prior single notification in the following cases: 1. Installations that fulfil the following characteristics: • They are used to provide public electronic communications services. • They occupy less than 300 square meters. • They have no impact on historical-artistic heritage. • They have no impact on the use of the public domain. • They have no impact in protected natural areas. 2. Any other kind of public electronic networks or radio stations in the private domain when the operator has submitted to the competent public administration a Deployment Plan which includes such infrastructures or stations, and the plan has been approved (Art. 34.6, General Law on Telecommunication). As explained before, the Deployment Plan is subject to tacit approval (3 months). 3. The installation of network infrastructure or radio stations in privately owned buildings will not require obtaining a building or construction license or other authorizations, but a prior notification with an affidavit stating that the works will be performed in accordance to a technical project must be presented to the competent authority (mostly municipalities). 3rd Final Disposition of General Law on Telecommunications. Please note that any radio station or public electronic network infrastructure subjected to the aforementioned prior single notification may be installed immediately after the notification has been delivered to the competent authority. The prior single notification authorization regime does not affect the powers of the competent authority to perform necessary inspections and enforce the law under its competences. It does not affect applicable fees, either. In the practice this means that in Spain:

- The big majority of radio stations (i.e: 4G, 5G), may be installed very quickly as they would be covered by the case 1) or 3) explained above.
- Another number of stations not fulfilling 1) could be installed using the deployment plans (case 2)). Additionally, a very important number of FTTH installations (most of them) use the deployment plan.

Our legal framework also considers permits exemptions in the cases of technological innovation or technical adaptation actions on a fixed or mobile public network, when the elements of civil works do not suffer any change. (Art. 34.7, General Law on Telecommunication). In this case, neither permit nor notification is needed at municipal/regional level (the only authorization needed in this case would be the radio project from the Ministry, if applicable, which also may be subject fast-track procedures)

Other tools that must be mentioned from our legal framework, are the straight forward procedures to gain access to the in-building physical infrastructure in Spain and the installation of final section of telecom networks in buildings, according to article 45.4 of General Law on Telecommunications. This makes deployments much easier and allow operators to gain time and save money.

SUGGESTED BEST PRACTICES

BEST PRACTICE 1: DEPLOYMENT PLAN

Practice implemented at national level.

A Deployment Plan describes the new telecommunications infrastructures that an operator foresees to deploy in an given area **in private domain** (usually a municipality), over a period. Any telecom operator has the possibility to submit a Deployment Plan to the competent public administration (usually a municipality), who has 3 months to explicitly approve (or disapprove) the Plan. Positive silence applies after this 3-month period.

Any infrastructure (wired or radio) for a public telecom network contained in the Deployment Plan can be installed immediately after the submission of a prior single notification to the competent public administration, once the deployment plan has been approved.

Suggested content for the Deployment Plan of radio infrastructures

1. The Deployment Plan may contain the series of actions foreseen in those areas of the municipality where the operator intends to deploy new radiocommunication infrastructure (search areas), within a specific period. This information is merely for informational purposes.
2. Deployment Plans shall include a search area for each planned infrastructure. This information is not binding on the operator, although it should be respected as far as possible. The extent of each search area will be the minimum necessary for the deployment of the planned infrastructure.
3. Deployment Plans may include:
    a. Brief overview of the services to be provided and the constructive solutions.
    b. Affidavit from the telecom operator stating that fulfil any necessary condition for the operation of networks or the provision of radiocommunication services.
    c. Description of each search area: id code, UTM coordinates and central datum point and estimated surface.
    d. For Small-Area Wireless Access Points (SAWAPs) included in the Plan, the search area will consist only of one central point. In these cases, the Plan must contain if it uses existing urban furniture for the deployment or if it plans to install other infrastructure associated with each SAWAPs. If existing urban furniture is used in the deployment, the Plan will contain which elements would be used and how.
    e. General scheme of the planned network, including the foreseen search areas. Street names will be included in the drawings whenever possible. The geographic scale will allow visualizing at the same time the whole of it and the details for each site.
    f. A contact to which the City Council can address in case it is required to correct any deficiencies in the installation that compromise the safety of the people or that contravene urban regulations.

<u>Suggested content for the Deployment Plan of wired public electronic communications networks</u>

1. The Deployment Plan may contain the series of actions foreseen in those areas of the

municipality where the operator intends to deploy new wired electronic communications infrastructure (search areas), within a specific period. This information is merely for informational purposes.

2. Deployment Plans shall indicate the approximate layout of the wired electronic communications network. This information is not binding on the operator, although it should be respected as far as possible.
3. Deployment Plans may include:
    a. Brief overview of the services to be provided.
    b. Affidavit from the telecom operator stating that fulfil any necessary condition for the operation of networks or the provision of radiocommunication services.
    c. The expected network layout. Planned deployments will be placed on maps that include street names whenever possible. It will also be highlighted on a general level the geographical framework in which it is intended to act.
    d. A brief description of the typology of the planned network.
    e. Type of wired deployments: sections on facade, aerial/underground roll-outs, etc…
    f. Access to users: overview of connections.
    g. When deployment affects building or areas catalogued with a certain degree of cultural/historic/artistic protection, the Plan will describe the specific solutions proposed to protect them.
    h. Expected timetable for the implementation of the new facilities.
    i. A contact which the City Council can address in case it is required to correct any deficiencies in the installation that compromise the safety of the people or that contravene urban regulations.

<u>BEST PRACTISE 2 - Permit exemptions in the cases of technological innovation or technical adaptation</u>

Practice implemented at national level.

Permit exemptions in cases of technological innovation or technical adaptation actions on a fixed

		or mobile public network, when the elements of civil works do not suffer any change, are to be applied. (Art. 34.7, General Law on Telecommunication). In this case, neither permit nor notification is needed at municipal/regional level (the only authorization needed in this case would be the radio project from the Ministry, if applicable, which also may be subject fast-track procedures)	
		BEST PRACTICE 3 – Prior Single Notification for all radio stations Best Practice implemented by Alcobendas City hall (received via FEMP-RECI-DIGITALES Group) Alcobendas has generalized the prior Single Notification figure to ALL radio stations (not only the ones explained above). This is one of the most important best practices in this entire document concerning fast-track procedures.	
		BEST PRACTICE 4 – Generalize prior single notification to public domain infrastructures Best practice proposed by DIGITALES (received via FEMP-RECI-DIGITALES Group) DigitalES is the major telecom operator and manufacturers association in Spain. They propose to generalize the prior Single Notification figure even to telecom infrastructure to be installed in public domain.	
		BEST PRACTICE 5 – Tacit approval for binding reports regarding telecommunication infraestructures. Best practice proposed by DIGITALES (received via FEMP-RECI-DIGITALES Group) proposal	

	DigitalES proposes that, whenever a binding report must be issued when processing a license request at municipal level (these reports are usually asked by the city hall to the autonomous community services, such as roads, water, cultural-artistic protection, territorial commissions of urbanism, environment, etc.), these reports will be issued under tacit approval regime after a given period of time (usually 30 days).	
FI	-	
FR	La loi « ELAN », portant évolution du logement, de l'aménagement et du numérique, a été l'occasion pour le Gouvernement français d'opérer des simplifications concrètes pour se donner les moyens d'atteindre ses objectifs des couverture à très haut débit de son territoire à horizon 2022. La loi ELAN a été promulguée en novembre 2018, et vise notamment la simplification des démarches administratives pour accélerer les déploiements de réseaux à très haut débit; par exemple: - Avant la loi ELAN : Dans le périmètre d'un site patrimonial remarquable ou aux abords d'un monument historique, **les autorisations d'urbanisme, environnementales ou au titre des sites classés étaient soumises à un avis conforme de l'architecte des Bâtiments de France.** ⇨ depuis la loi ELAN, ces autorisations sont désormais soumises à un avis consultatif de l'architecte des Bâtiments de France. En cas de silence de l'ABF, l'avis est réputé favorable. - Avant la loi ELAN : Tout opérateur qui exploite une installation radioélectrique soumise à l'accord ou l'avis de l'Agence nationale des fréquences devait présenter un **dossier d'information auprès du maire deux mois avant le dépôt de la demande d'autorisation d'urbanisme.** ⇨ depuis la loi ELAN, le délai entre le dépôt du dossier d'information auprès du maire et la demande d'autorisation d'urbanisme est réduit à un mois. Le maire peut prévoir un délai plus court. - Avant la loi ELAN : La **délivrance d'une autorisation d'occupation du domaine public** était soumise à une procédure de publicité et de mise en concurrence préalable ⇨ depuis la loi ELAN, cette procédure est facultative, **afin de sécuriser davantage le cadre juridique régissant l'occupation du domaine public par les opérateurs** - Avant la loi ELAN : Les antennes étaient construites en continuité avec l'urbanisation existante en zone de montagne. ⇨ Depuis la loi ELAN, les implantations d'antennes bénéficient d'une dérogation au principe de continuité de l'urbanisation, **afin de lutter efficacement contre les zones blanches en montagne et amener le très haut débit à l'aide du mix technologique,.** Un document édité par le Gouvernement français a par ailleurs été mis à la disposition des collectivités, propriétaires et opérateurs, afin de faciliter la mise en oeuvre sur le terrain des dipositions simlpifiées par ce texte de loi. Il peut être consulté sur le lien suivant :	

	http://infranum.fr/wp-content/uploads/2019/05/L19061_Disposition_Elan_-couvertureNum%C3%A9riqueTerritoire_A5_VersionPapier.pdf
HR	There is no fast-track permit granting procedures. The regulatory framework had objective to shorten the procedures by eliminating one required step (it is no more required to obtain building permit for some type of constructions, as described in answer in Q1 but this did not significantly speed up the process.
HU	As set in the relevant NMHH Decree28 applicants for deployment of electronic communications structures are **not required to submit request for permission, nor notification** in the following cases: a) any building activities within the limits of the property owned by the developer except for antennas and antennas holding structures; b) locating or demolishing structures housing electronic communications equipments not larger than 15m^2 and not higher than 4.0m above ground or on structures, without the need to reinforce its support fixture; c) building such electronic communication infrastructures included in the building permit of basic facilities, that ca. are to house electronic communication infrastructure with operational functions on railway lines and expressways except for antennas and antennas holding structures, only when using property owned by the developer or the Hungarian State; cb. are accessories of electronic communication infrastructure, natural oil and gas pipelines, electrical plant, water pipeline, sewage pipeline, district heating network, zip line; d) electronic communication infrastructures with operational functions underground – deep level – mine; e) activity related to troubleshooting and maintainance; f) implementation or demolition of antennas holding structures, if its size is not larger than 6.0m in all direction, not inclouding length of lightening protection device; g) implementation of antennas on structure irrespective of the size of the antennas holding structures, if size of antennas is not larger than 4.0m in all directions and reinforcement of support fixture is not needed; h) implementation of part of the network not longer than 100m, connected to electronic communications network with final building or occupancy permit, or noticed under Section 19-20.;

28 14/2013 on the Setting of Electronic Communications Structures and the Related Administrative Procedures

i) activity included in the mandatory requirements of maintenance standards referred to under Section 2 d);

An amendement of the abovementioned decree is planned to come into force at the end of December 2020. Among other amendments a streamlined permit granting procedure is to be introduced enabling NMHH to issue permits within **15 days** if its conditions29 defined in legislation are met. New rules intend to accelerate and streamline deployments using already existing infrastructure (promotion of property or facility sharing).

Deployment and demolition of short range wireless access points (SAWAP) is to be added to the scope of the activities that may be undertaken without permit granting.

- Best practices identified in other MS or non-EU countries

  In the United States, the Federal Communications Commission (FCC) issued three orders in 2018 to promote investments in broadband infrastructure, including 5G small cells. In August 2018, the FCC adopted the **Moratoria, and One-Touch Make-Ready (OTMR)**30 orders to accelerate the process and reducing the costs of attaching new facilities to utility poles.

  - The **OTMR process** gives an entity seeking to attach to a utility pole the choice either to perform all work necessary to prepare the pole for its facilities (called "make-ready" work) or follow the current practice where each attacher performs the necessary make-ready work on its own facilities.
  - The **Moratoria Order** was issued in response to complaints that state and local ordinances and practices were either explicitly or having the effect of barring small cell deployment. The FCC's Order therefore prohibited express and "de facto" moratoria that effectively halt or suspend the acceptance, processing, or approval of applications or permits for wireless facilities as in violation of Section 253(a) of the Communications Act.
  - The FCC's September 2018 **Small Cell Order**31 was designed to remove various state and local barriers that would prevent 5G providers from accessing existing facilities for installation of small cells. Among other things, the order limited fees that

29 Submitting all of the documents defined in the NMHH Decree on time,

30 Report and Order, Declaratory Ruling In the Matter of Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment. Aug 3, 2018. https://www.fcc.gov/document/fcc-speeds-access-utility-poles-promote-broadband-5g-deployment-0

31 Declaratory Ruling, Report and Order In the Matter of Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment; Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment. Sep 27, 2018. https://www.fcc.gov/document/fcc-facilitates-wireless-infrastructure-deployment-5g

	local governments can impose for accessing public rights-of-way (ROW), above a safe harbor amount, to a "reasonable approximation" of the costs of processing applications and managing the ROW; and shortened the FCC's timelines for approving permit applications ("shot clocks") to deploy wireless facilities from 90 to 60 days to review applications for installations on existing infrastructure and from 150 to 90 days for all other applications. Local government and municipally owned utilities challenged these requirements, but they were affirmed by a Ninth Circuit panel on 12 August 2020.32
IE	Class 31 of Part 1 of Schedule 2 of the Planning and Development Regulations, 2001, as amended, provides exemptions for certain works undertaken by statutory undertakers authorised to provide a telecommunications service. Class 31 also prescribes the conditions and limitations imposed on such exempted development. The types of network deployment which benefit from these exemptions include: (a) underground telecommunications structures or other underground telecommunications works (b) overhead telecommunications including the erection of poles or other support structures or the use of existing poles or other support structures (c) equipment for transmitting or receiving signals from satellites in space, (d) permanent telecommunications exchange and radio station containers, including containers for electronic equipment required for transmitting, receiving and processing telecoms data for both wireless or wired networks (e) cabinets forming part of a telecommunications system (f) transportable radio installation (g) antennae for high capacity transmission links by way of attachment to existing high capacity antennae support structures (h) antennae, including small cell antennae This is not an exhaustive list and the exemptions are subject to conditions, which are clearly outlined in Class 31 of Part 1 of Schedule 2 of the Planning and Development Regulations, 2001, included in Appendix 1.
IT	The Law Decree no.76/2020 contains measures to accelerate the work necessary for the deployement of broadband infrastructures. The simplification of both the administrative procedure and the timing, derives from the provision that for the installation of optical fiber for electronic communication networks doesn't apply the building and urban planning regulations This provides for the submission of a single application for excavations, land occupation and the construction of any civil works pursuant to Legislative Decree no.259 of 2003 Further simplified procedures are envisaged in the case of use of existing physical infrastructures and excavation technologies with low environmental impact (micro trench).
LT	As mentioned above, fast-track to deploy a cable network is to go "along the roads" (use road complex).

32 https://cdn.ca9.uscourts.gov/datastore/opinions/2020/08/12/18-72689.pdf

LU	-
LV	No fast track available for construction of networks. Electronic Communications Office shall issue permit for installation of radio equipment or mobile base station within 10 days.
MT	Transport Malta does not require operators or public entities to provide specification of the type of network they will be operating. During the permit consultation period, entities that may be affected by a road works proposal, are requested to provide details of the location of their underground/buried services so as to ensure that any new works in the respective area is carried carefully and minimise the risk of damaging any existing third party underground infrastructure.
NL	As stated in the answer to question 2, there is a permit exemption for antenna installations for mobile telecom which are lower than 5 meters in height. However, mobile telecom operators, municipalities and the national government (Ministry of Economic Affairs and Climate Policy) have, on a voluntary basis, established rules and procedures (laid down in a covenant) regarding the deployment of such antenna installations. This covenant has been in place since 2002 with the aim of promoting the careful deployment of permit-free antenna installations. The working of the covenant is discussed on annual basis between the signatories.
PL	Certain categories of infrastructure is exempted from the building permits (see points 5.1 and 5.2 of the table above).
PT	Apart from the procedures already explained in previous answers, the NRA (ANACOM) has no further information. In any case, DL123/2009 is technologically neutral and therefore does not include specific dispositions regarding the deployment of certain types of network deployment. • Best practices identified in other MS or non-EU countries Regarding the practices identified in other MS, 2018 WIK Report "Study on Implementation and monitoring of measures under BCRD", analyses the matter regarding the permit granting procedures.
RO	As mentioned in point 1 above, two exceptions are regulated. Can be carried out without a building permit the repair/rehabilitation/refurbishment works, including modification, replacement or addition of equipment to electronic communications networks, if no work is required on them physical support infrastructure, performed by the beneficiaries of the general authorization in the field of electronic communications and/or network operators. Also, can be carried out without a building permit the installation of electronic communications networks and equipment in the existing underground physical infrastructures, built for this purpose, as well as the installation of electronic communications networks and equipment in the existing in-building physical infrastructures. A draft-law transposing the EECC proposes to exempt the installation of small area wireless access points from permit granting procedures.
SE	-
SI	The majority of electronic communications networks elements do NOT require a granted building permit in Slovenia, as described in pt. 1.
SK	We have no special or other fast track permit granting procedures or permit exemptions other than those mentioned in response to question no.1.

***Question 5**: Please name already existing and/ or planned best practices in your country as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Providing operators with the right to submit, by electronic means via the single information point, applications for all the necessary permits required for civil works to deploy elements of very high capacity networks. If there are best practices, please explain details of the procedure.*	
Member State	National Best Practice
AT	A single information point for submitting applications does not exist in Austria as the responsibilities for various permits are distributed between the Republic of Austria, the Federal States and the communities.
BE	In the Walloon Region, this is possible with the POWALCO platform, obliged by the "Décret impétrant" of "Service Public de Wallonie" (SPW). It could be considered a best practice that it is obligatory to precede the application for authorization by a demand for coordination of the civil works (exceptions possible).
BG	
CY	OCECPR developed an electronic permit application system for the deployment of fixed infrastructures which is gradually released per Municipality/District.
CZ	Operators can not apply for any permits required for civil works to deploy elements of very high capacity networks via Single Information Point (SIP) in Czechia.
DE	-
DK	Digital government in Denmark is ubiquitous and applications etc. will normally have to be submitted electronically. Generally, applications for the relevant permits can be submitted electronically to the relevant municipality. Where additional permits from other authorities are needed, this will usually be identified by the municipality in the process. The municipalities have relevant information on permit procedures etc. on their homepages and signpost to the relevant online application systems. *Digging permits* To apply for digging permits for public roads, applicants must use the general online self-service portal virk.dk where companies also apply for or report many other things. This system is a single point of entry used for all public roads i.e. both where the permit is issued by the municipality, and where the permit is issued by the Danish Road Directorate. A query in the Danish Register of Underground Cable Owners (LER) must also be done (see questions 11 and 12). Information on municipal district heating and low voltage cables etc. can also be found digitally. *Building permits etc.* For applications for construction of masts, operators must apply via the digital portal *Byg og Miljø,* which is used by all municipalities. *Byg og*

	Miljø is a web-based IT platform which makes it easier for citizens and companies wishing to apply for a permit to build a mast. The platform is generally used for permits regarding construction, expansion or alteration of buildings and for environmental permits. The platform guides the applicants through the steps in the application process. All information relevant to the application is displayed as needed in the application process, which may include e.g. overview maps, property information, applicable zoning rules/plans, history of building permits on the premises, and/or geographic information (GIS). In the application process, the applicant chooses location, type of building activity, object type, and use. Based on this, the system informs the applicant about what documentation it is necessary to attach to the application. All Danish municipalities use *Byg og Miljø*, which results in a better, faster and more uniform application process. Processing the application, issuing the building permit and collecting fees (if any) is still the responsibility of the individual municipality. Municipalities also encourage telecom operators to engage in an informal preliminary dialogue before submitting an application so that possible locations of a mast/antenna and other aspects (e.g. process) can be discussed in order to ensure a smooth application process.
EE	All permits are being submitted through online Register of Buildings. Register of Buildings (www.ehr.ee) is the single information point. It is managed by the Ministry of Economic Affairs and Communications. https://www.mkm.ee/en/estonian-register-buildings The network operators can get access to the information through www.ehr.ee. To access they need to authenticate themselves digitally. All the information will be share by digitally.
EL	The information system is under preparation (see answer to Question 3)
ES	GENERAL EXPLANATION The running single information point in Spain does not currently include this possibility, even though the legal framework foresees it. More concretely, article 35.8 of General Law on Telecommunications, establishes this possibility. However, the aforementioned article does not force municipalities to adhere to the mentioned system, but suggests a collaboration agreement to be signed between the interested municipalities in Spain and the central state administration instead. Obviously, not all the municipalities are interested in playing a part in this mechanism. Additionally, this would require to allocate human resources to channel all the requests and this is not something currently available. **Nevertheless, the Spanish Connectivity Plan 2021-2025 foresees a Single Information Point providing the service as described in the question**, so the situation will change soon, even though not all the municipalities in Spain would be included in the SIP (as explained before).

FI	-
FR	Le guichet unique "réseaux et canalisations", auquel est intégré le guichet unique génie civil (telecom) assuré par l'institut national de l'environnement industriel et des risques (INERIS), permet de déposer notamment des demandes de travaux, ou en cas de nécessité des avis de travaux urgents. La réponse fournie par le guichet unique recueille la liste des exploitants potentiellement impactés par ces travaux. Il ne s'agit pas d'un permis de réaliser les travaux. Néanmoins cette étape est obligatoire dans la procédure. Si les travaux doivent se dérouler sur le domaine public, l'exécutant des travaux devra également demander une autorisation de voirie à la mairie concernée. En cas de contrôle des travaux par l'autorité compétente (DREAL) il sera demandé la communication de la déclaration de travaux et des plans reçus en réponse.
HR	Yes, there is a single web portal as mentioned in the answers above. This is the information system of the Ministry of Physical planning, Construction and State Assets (e-permit https://dozvola.mgipu.hr/naslovna) as the central place for issuing construction permits. The system makes possible for operators to submit in electronic form applications for all the necessary permits. It also enables operators to monitor permit granting procedures at most of administrative stages, but not all. However, the local construction body's administrative personnel and other public bodies do not respect the legal deadlines. The desired objective of shortening the deadlines for issuing permits has not been achieved.
HU	• In Hungary, it is a legal requirement for planners, designers and architects to conduct consultation with public utility companies related to permitting procedure necessary for building and construction works during the elaboration of building and construction plans and designs. In the course of the consultation, public utility service providers furnish information on the location and positions of their public networks which has to be considered during the elaboration of building and construction plans and designs. Furthermore, public utility companies may also make comments and formulate specific instructions related to planned building and construction works. • The substance of e-utility is in driving the above-mentioned procedure towards an **electronic way,** related to decreasing administrative burdens as well as bureaucracy limiting business activities and administration of citizen requests.
IE	In Ireland the single information point, the Commission for Communications Regulation (ComReg), as established under the provisions of the Broadband Cost Reduction Directive, does not operate a centralised electronic planning application system. However, an online ePlanning System is currently being developed by Ireland's Local Government Management Agency (LGMA). This portal will integrate the IT systems of Ireland's 31 Planning Authorities to enable the lodging of planning applications online. In addition, the Roads Management Authority operates the MapRoad Licensing (MRL) online system, which facilitates the submission of applications for licenses to excavate a public road for the purpose of telecommunications works.

IT	The permitting/granting procedure concerning planned civil works in Italy are delegated to local authorities (municipalities, provinces, concessionaire of public infrastructures like roads and rail roads, superintendence authorities). There are collection points on a regional basis for the submission of applications. The SIP at local level is called SUAP and the web site "impresa in un giorno" gives all the information needed, supplying links to all the local SUAPs. However, not all portals have a timeframe for issuing authorizations yet and not all Italian Regions are properly equipped with IT portals.
LT	As it was indicated, we have a few SIP's. The Communications Regulatory Authority of the Republic of Lithuania (hereinafter referred to as RRT) - a competent body that performs the functions of a single information point (SIP) under Article 4 (transparency concerning physical infrastructure) and Article 6 (transparency concerning planned civil works) of the Broadband Cost Reduction Directive. The functions of SIP under Article 7 (permit-granting procedure) are performed by local municipalities (if permits are needed for excavation and fencing works or for building structures or buildings (constructing real estate objects). In Future: Topography and Engineering Infrastructure Information System is being developed which will contain most of the data managed by RRT in the future.
LU	The National Road Works Register (*Registre national des travaux*) is a register which contains all the applications for road and roadside permits which have been submitted by businesses as well as all information concerning **public infrastructure works** planned by the communes and the public administrators (e.g. telecommunications, gas, electricity and water networks, etc.) This information is published in the register for **30 days**, which allows businesses to: - be informed about which works are planned on the parcel of land on which they intend to carry out works themselves; - better coordinate their own work sites with those of other businesses or public administrators; - achieve cost reductions by sharing the cost for infrastructure works based on an agreement between concerned businesses and other interested parties; - guarantee conditions that cause the least possible damage to public areas all the while respecting the environment and the aesthetic quality of the surroundings. Businesses who wish to carry out civil engineering works **on public land** can consult the National Road Works Register.
LV	Operators shall propose construction and submit the information and documents necessary for the implementation of a construction intention to the building authority or an authority which carries out the functions of a building authority, using the Construction Information System. State and local government authorities and owners or lawful possessors of external engineering networks shall issue in the Construction In-formation System the technical or special regulations necessary for the implementation of the construction intention, and also agreements or permits.
MT	In Malta, this system is already electronic and operational, since Transport Malta is the regulatory authority for civil road works, operators submit their permit request through the RPS which is accessible to contractors registered with Transport Malta, and to entities which either have underground infrastructure or are directly/indirectly affected by any proposed road works. Once submitted, the online request will be

	processed by Transport Malta, coordinating with the relevant local Authorities.
NL	In the Netherlands there is no possibility to apply for permits required for required for civil works to deploy elements of VHCN via the SIP. However, there are other centralized digital facilities though which telecom operators can apply for permits, please see the answer to question 9.
PL	At present, the role of a single information point does not provide for the possibility of submitting applications for permits. We also do not plan to introduce such functionality into the system. Most of permits are issued by local government units and the entrepreneurs should apply to them with appropriate applications. Because of too many local government units, it is not possible to handle all procedures through an information point. The system provides detailed descriptions of procedures required under the investment process.
PT	As already mentioned, regarding the construction of infrastructures suitable for accommodation of electronic communications networks, DL555/99 foresees a procedure under which a prior communication should be sent to the president of the municipality. According to DL555/99 (article 8-A), the procedures foreseen in this framework are processed through an electronic platform (not the SIIA) whose terms of operation were regulated in an ordinance by the members of the Government responsible for the areas of administrative modernization, local authorities and spatial planning. Through this electronic platform, the interested parties may, namely: a) Deliver requests and communications; b) Consult the status of the procedures; c) Submit procedures for consultation by entities external to the municipality; d) Obtain automatic proof of submission of requests and communications and the occurrence of tacit approval, when the respective legal deadlines have elapsed; e) Provide information on prior communication procedures for the purposes of land and land registration. The NRA (ANACOM) has no information on how this electronic platform works. • Best practices identified in other MS or non-EU countries Regarding the practices identified in other MS, 2018 WIK Report "Study on Implementation and monitoring of measures under BCRD", analyses the matter regarding the submission, by electronic means via the single information point, applications for the permits.
RO	At the national level, it does not exist a single information point where applications for all the necessary permits required for civil works could be submitted.
SE	-

SI	Currently it is possible to submit the requests for building permits via e-mail, but with an overall limit of sent files of 8 MB. The Slovenian construction and building legislation is undergoing the process of revision and amendments, which will bring additional simplifications in administrative procedures (described in pt.6).
SK	We have no relevant practices regarding the operator's right to submit by electronic means via SIP applications for all the necessary permits required for civil works to deploy elements of VHCN. The Ministry of transport and construction should be the operator of the information system on zoning planning and the information system on construction. Information systems should be part of the state information system. The purpose was to harmonize, integrate, and streamline the implementation of construction and zoning agendas in the field of regional development using the possibility of data interoperability using information technology, including the possibility of electronic operations and online access to digitized spatial data. The system should provide the citizen with the possibility of implementing the necessary steps within the processes of building regulations and zoning planning through a web interface in accordance with the concept of eGovernment. At the same time, other entities that are involved in the implementation of building regulations and zoning planning, should be able to communicate through this system. The approval process has been interrupted in 2018 and has not yet been renewed.

***Question 6**: Please name already existing and/ or planned best practices in your country as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Establishment of the single information point as a single entry point for submitting applications for such civil works. Making use of the single information point to coordinate and monitor permit granting procedures at all administrative levels. The single information point is required to facilitate the exchange of information on the progress of these procedures between the applicants and the competent authorities, including communicating the decision issued by the competent authority/ies to the applicant.*	
Member State	National Best Practice
AT	This concept is not provided for by law due to the distribution of competences between the state, federal state and local authorities.
BE	For the Walloon Region, the permit procedure is handled via the POWALCO platform, which facilitates the exchange of information.
BG	
CY	According to the "acquisition of rights of way Order" of 2012 all competent authorities follow specified procedures and timeframes when dealing with EC network operators applications for permit granting.
CZ	SIP is not involved in granting procedures in the area of civil work. SIP, therefore, has no recommendations nor best practices to share.
DE	-
DK	The responsibility for the most common types of permit as well as exemptions from some common types of nature etc. protections are already "bundled" at the municipal level, meaning that the local municipality will usually be a single entry point. Cases where permits from other authorities are needed are considered too few to merit establishing a system which also encompasses these authorities. Generally, the municipality will know what other permits may be needed and how to apply for these, and will usually point this out to the applicant. The Danish Energy Agency also collects information on different applicable legislation and can advise on this in general terms.
EE	All permits are being submitted through online Register of Buildings.
EL	So far, the functionalities of the Single Information Point are distributed/fragmented. The envisaged information system (see answer to Question 3) will integrate all these functionalities and, moreover, allow for the electronic submission and management of applications (centralized service).
ES	GENERAL EXPLANATION As explained before, General Law on Telecommunications foresees a mechanism for allowing telecom operators to submit by electronic means, via the single information point, applications for all necessary permits that are required for civil works to deploy elements of very high capacity networks. The possibility of the SIP coordinating and tracking progress of these procedures, including the communication of the decision issued by the competent authority would need to be included in the collaboration agreement. This system is not currently available in Spain.

	This does not mean that it might be activated in the future: The Spanish Connectivity Plan 2021-2025 foresees a Single Information Point providing the service described in the question. Best practices identified in other MS or non-EU countries A best practice has been identified giving answer to questions 5 and 6: BEST PRACTICE 6 - PERMIT SUBMITTING VIA SIP The best example of identified best practice is EUGO portal, which is intended to facilitate business start-ups or expansions: https://www.eugo.es/ . This would mean to translate this model to the application **not only to civil work permits**, but also to electronic communications infrastructures installation. This would mean that a telecom operator would submit its permit request/deployment plan/prior single notification to this SIP. The administrative fees would be paid in that moment (not for the deployment plan, that must be previously approved – once it is tacit or explicitly approved, the fees are paid with the subsequent prior notification submission). Once the request has been submitted, the competent authority that is addressed would require additional information in case it is needed to be considered as a complete request. Once this step is complete, the process continues. Depending on the request, the competent authority would require to other authorities their input (i.e: in case a binding report on environmental is needed according to regional/national Law). Once received, they would issue their decision. At any time, the competent authority that has been addressed to issue the permit would have the possibility to contact the telecom operator. Before the end of legal deadlines, competent authorities subscribed to the SIP would deliver their decisions through the SIP. In the case of a single prior notification, taking into account that it is a tool intended to allow operators to start their deployments the instant after it has been submitted, legislation could set periods of a number of days in case an irregularity is found to be amended by the telecom operator. SIP could interact with e-administration tools in order to deliver these kind of notifications. SIP also will monitor deadlines in order to accomplish with legal periods and tacit approvals.
FI	-
FR	Le guichet unique ne permet pas l'échange d'informations sur l'état d'avancement des procédures entre les demandeurs et les autorités

	compétentes et ne communique pas la décision rendue par l'autorité compétente au demandeur.
HR	See the answers under Q2 and Q5. It does not allow monitoring of the issuing of permits at all stages of the procedure. For example, in the information system, it is possible to oversee the procedure after the request was assigned to the authorised person. However, this is not possible for the period after it was received in procedure to the time when it was assigned authorised person.
HU	In Hungary the e-utility system is the online platform for consultation with public utility companies, as shown in the previous point.
IE	As per response to Q5, the single information point as established under the provisions of the Broadband Cost Reduction Directive does not operate an electronic application process in respect of permits for civil works. As referenced at Q5, the ePlanning system (for obtaining planning permission), when fully developed and rolled out, together with the already established MRL system (for obtaining a license to excavate public roads for the purpose of telecommunications infrastructure deployment), will collectively provide for a simplification of the application process for such civil works.
IT	This functionality is not currently implemented at national level as under the Italian constitutional rules this power is attributed to Local Authorities. However, the operators who have been consulted on this issue, suggest to consider with caution the introduction of this functionality, which could complicate the authorization procedures rather than simplify them. Instead, operators appreciate the possibility of using a single SCIA (Certified notification of start of activity) to be sent to the competent local administration and control bodies, in order to obtain a single "local" authorization for all aspects (excavations and civil works, concession of the soil and public subsoil, permits relating to the protection of cultural heritage and the landscape) related to the construction of the infrastructures which affect a specific local territory. An example of best practice is given by the "SCIA (Certified notification of start of activity) modality with deferred effectiveness" procedure, adopted by the municipality of Milan through its single point of information at the local level (SUAP Milano). In particular, the SUAP interfaces with the operators by coordinating (with defined deadlines) all the bodies involved and providing the necessary information (sensitive sites, preferential areas, rates of local taxes to be payed, etc). The SUAP allows, then, operators to submit the SCIA accompanied by requests for the release of the necessary opinions/authorizations, deferring the effectiveness of the SCIA to obtaining the last Opinion. This procedure reduces the time required to obtain authorizations by 30 days. Contrary, other local administrations still do not allow the presentation of the SCIA in the absence of opinions/authorizations deemed necessary. This aspect entails to a lengthening of the times of administrative proceedings.
LT	All SIP's have digital access to their services and also all are using ICT these times, so to get a permit or any information that is needed is not a problem.
LU	Decisions are communicated electronically trough the SIP.

LV	State and local government authorities and owners or lawful possessors of external engineering networks shall issue in the Construction In-formation System the technical or special regulations necessary for the implementation of the construction intention, and also agreements or permits.
MT	Malta is already using the RPS as a SIP, since all documentation for permit granting for civil works is made through this electronic platform.
NL	At this moment, there are no plans for the establishment of the SIP as a single entry point for submitting applications for civil works to deploy elements of VHCN.
PL	As mentioned in point 5, the information point system does not offer such functionality. We also do not plan to introduce such functionality into the system. Instead, it offers a description of procedures required at individual stages of the investment. The descriptions of the procedures are very detailed and are intended to guide the entrepreneur through the entire investment process (taking into account formal requirements). The procedure descriptions are equipped with diagrams that facilitate the visualisation of the process and contain information about all current legal acts.
PT	As explained before (questions 1 and 2), in Portugal it is foreseen that a prior communication is sent to the municipality, thus the SIIA (managed by the NRA – ANA-COM) is not a single-entry point for submitting applications for civil works. Nevertheless, in the future we could consider making the necessary adjustments to the SIIA, so that the network operator would indicate in which municipality intends to build and attach all the necessary documents, that afterwards would be sent to the Mayor. . • Best practices identified in other MS or non-EU countries Regarding the practices identified in other MS, 2018 WIK Report "Study on Implementation and monitoring of measures under BCRD", analyses the matter regarding the establishment of the single information point as a single entry point for submitting applications.
RO	As mentioned in point above, in Romania has not been implemented a single information point as a single entry point for submitting applications for such civil works. According to the latest amendments of Law no. 50/1991, the urbanism certificate may be issued in a digital form, through electronic mail, in case the applicant has expressed its consent in this regard. Also county councils and county capital, have the obligation to set up the commission in charge with the sole permit issuance. Upon the applicant request filed in electronic format, such commission shall provide, at a cost, services for obtaining the approvals/agreements required for the authorization of the construction works.
SE	-
SI	The establishment of the eGraditev (''eBuilding'') system is being prepared, which will enable the electronic acquisition of building permits and building permits through a single entry point. The eBuilding system is expected to be implemented in 2021.
SK	We have no national practices in the field of SIP coordination and monitoring of permit granting procedures at all administrative level. SIPs task is to collect, process and store information on existing and planned infrastructure and makes this information available in electronic form free of charge to undertakings under reasonable, non-discriminatory and transparent conditions. According to national legislation SIP shall

	publish on its website the relevant information on the conditions and procedures relating to the granting of construction permits required for the purpose of building high-speed networks. https://www.teleoff.gov.sk/informacie-o-podmienkach-a-postupoch-vztahujucich-sa-na-udelovanie-povoleni-na-stavebne-prace-ktore-su-potrebne-na-ucely-budovania-vysokorychlostnych-sieti/

***Question 7**: Please name already existing and/ or planned best practices in your country as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Best practices for the granting of rights of way provided in Article 43 of the European Electronic Communications Code with regard to the deployment of elements of very high capacity networks. There is particular interest in any best practices to ensure that, where the deployment of such network elements requires both civil works permits and rights of way, competent authorities grant or refuse the necessary permits in parallel within maximum 4 months from the application.*	
Member State	National Best Practice
AT	This concept is not provided for by law and, due to the distribution of competences between the federal, state and local governments. In addition, a fundamental change in responsibilities would also affect many legal matters outside of telecommunications.
BE	In the law of 1991 concerning the reform of certain public companies, art. 97/98 states that every operator is allowed to use the public domain to install cables and equipment. The operator wishing to install cables or other equipment has to ask the permission of the public body in question which has two months to reply. If it does not reply within this delay, the request is deemed to be accepted.
BG	
CY	There is no distinction between very high capacity networks and other networks. All follow the same procedure.
CZ	See question 1.
DE	The assumption of approval in broadband roll-out in accordance with section 68(3) of the Telecommunications Act (TKG) limits the period for the granting of rights of way to a maximum of 3 months. After expiry of these 3 months, the consent of the authority responsible for the construction and maintenance of public ways is deemed to have been given for the rights of way (assumption of approval). Thus, it is ensured that there is a maximum processing period for submitted applications. If the complexity of the case justifies it, this period for tacit approval can be extended by one month if such a request is communicated in a timely and duly substantiated manner. Within the framework of the ongoing Telecommunications Act (TKG) recast, it is planned to combine the granting of rights of way with certain other permit requirements for the roll-out of telecommunications networks. Decisions of public authorities in accordance with nature conservation law, water law, heritage protection and the Road Traffic Regulations are thus to be issued together with the rights of way, cf. section 124(5) of the Telecommunications bill. The regular period for the granting of the combined permits is 3 months. The federal states designate one or more coordinating bodies and ensure compliance with the procedural time-limit.
DK	See point 2b under the answer to question 1. With this in mind, the following can be mentioned: *Background:* For public roads, property ownership and permit responsibility always coincide (municipality or Road Directorate), and the granting of rights of way and a permit are one and the same decision. As referenced in the answer to question 1, using public property other than roads to permanently place above-ground infrastructure on the

	property is a matter of a commercial rental agreement. Where public authorities own property other than roads, these public authorities assume the role of landlord. The landlord can be the municipality, in which case permit granting and land lease/access are separate decisions by the same authority – one a decision on whether to grant a permit, the other a commercial decision on whether to rent out property. The property owner may also be an authority that has no role in permit granting. Examples are The Danish Building and Property Agency (most government offices), The Danish Nature Agency (forests, nature areas), the military (barracks, training facilities, hangars), The Agency for Culture and Palaces (castles, parks) and Banedanmark (railroads). In these cases, the property owning authority has to process a request for a land lease, which is not an issue of granting a permit, but of entering into a commercial agreement. *Best practice:* The Danish Energy Agency encourages public authorities to assist the roll-out of digital infrastructure by renting out their property for this purpose on reasonable terms (keeping in mind that rentals must be at market conditions). The Danish Energy Agency has issued guidelines on how to ensure that payments for renting property from public authorities reflect market conditions and expects to issue a revised version of these guidelines in early 2021. The Danish Energy Agency also encourages public-sector owners of property to enter into dialogue with telecom operators seeking to establish new sites in an area to identify any public property which is suitable for the purpose. The Danish Energy Agency can give municipalities expert opinions on the technical suitability of a site based on coverage simulations provided by the operator and so assist the "site hunting" process and the choice between different municipal/public (and/or private) properties. The Danish Energy Agency also has an ongoing dialogue with telecom operators and authorities etc. owning relevant properties whenever advice is needed.
EE	-
EL	Permits for both the communication network installation and the civil works are -in principle- included within the same decision. In any case the whole licensing procedure should be accomplished within four (4) months. When it comes to VHCN and bearing in mind the limited dimensions of excavations etc. it is anticipated that the Joint Ministerial Decision (see answer to Question 4) will facilitate and expedite their deployment.
ES	GENERAL DESCRIPTION First of all, it must be noted that Electronic Communications Code does not necessarily group rights of way with issuance of permits. The first one sets a period of 6 months (except in the case of expropriation, where it can be longer), while the second is 4 months. Additionally, the way in which each one of the two cases progress is usually different in Spain: different legislation, different procedures and reports to be obtained and quite often, different public authorities conduct each one of the processes.

	It is rather unrealistic to set a way to process them in parallel in Spain. That being said, the draft bill concerning the new General Law on Telecommunications foresees legal provisions that may be considered as best practice in order to reduce the period of 6 months for rights of way granting. BEST PRACTICE 7- (reducing rights of way granting periods) Rights of way management in Spain involves several procedures that are contained in the Obligatory Expropriation Act. Ways of accelerating these procedures are described as follows (all of them are contained in the Spanish preliminary draft Law on Telecommunications, which will transpose EECC Directive) : - The approbation of the administrative file implies by itself the declaration of public interest. This means that there is no need of opening another file for achieving this declaration. - The approbation of the administrative file implies by itself the declaration of need of occupation for the installation of public electronic communication networks. This declaration of need is another necessary administrative procedure set in the Expropriation Act, so doing this procedure in an automatic way reduces deadlines. - Reports from other administrations must be issued within 30 days (so the final deadline is not compromised by these reports), except in the case of land under environmental protection/issues. After those 30 days, a tacit favourable report is understood. - In case of public electronic communication networks linked to service obligations (i.e: universal service or coverage obligations), the files will be conducted under an urgent procedure. BEST PRACTICE 8- (transparency when granting occupation rights to telecom operators in public roads). <u>Description</u> When an electronic communications operator makes a request for the occupation of a road section, the telecommunications competent authority, at the request of the road competent authority, agrees to carry out a public information procedure in order to make available this information to those electronic communications operators who are interested in the shared location and shared use of the public domain for their deployments. This practice is performed in Spain both by the central administration and the Junta de Andalucía (for the roads that are under their competence).

	More information: https://avancedigital.gob.es/es-es/Participacion/Paginas/DetalleParticipacionPublica.aspx?k=239 https://bit.ly/3lPraYL Recipient: Electronic communications operators Potential Benefits: Avoids having to launch several occupation/rights of way procedures when there is an interest of various operators to deploy using roads public domain. This accelerates investment in these kind of networks and, at the same time, promotes shared use and coordination of civil works.
FI	-
FR	Rien ne s'oppose à ce qu'un droit de passage puisse être demandé simultanément à une déclaration préalable, un permis de construire, ou une permission de voierie.
HR	The process of obtaining permits is separated from the process of resolving property rights (right of easement, right of way, etc.) between ECI operator and the owner/manager of the property. Until recently, resolving property rights was a precondition for obtaining a building permit. But the new Construction Act prescribed that it is sufficient for the documentation to contain proof of the legal interest of build. The process of resolving property rights typically takes between 3 to 6 months, provided that the conditions offered by the local authorities/road manager are reasonable. This process is now carried out in parallel with the process of obtaining the building permit. To avoid misinterpretation, the proof of the legal interest of build is under one legal act and property right is under another legal act. **Separating process of obtaining permits from the process of resolving property rights is a step forward. But problem is that participants in the procedure frequently do not respect prescribed deadlines**.
HU	As described in our response to question 3, civil works permits should be granted by NMHH within 60 days. Current Hungarian legislation does not impose parallel procedures on the authorities concerning the granting of civil works permits and rights of way within four months. However, since this would contribute to the significant acceleration of permit granting procedures, NMHH will assess whether such a

	provision could be introduced in the future.
IE	No current best practices identified by Ireland.
IT	The synchronization is important. In some cases, there is a misalignment in the timing provided for the different acts. It is necessary to intervene not only by reducing the times for issuing permits (as in the case of the landscape authorization by the Superintendency and the authorization procedure), but also by guaranteeing equal timing for all requests relating to employment in areas of public interest (case of the railway and motorway grounds). Furthermore, the administrations involved should ensure an alignment for the authorization timelines. Synchronization occurs in Italy as a result of authorizations issued through the use of "Conferenza dei Servizi" (i.e. the conference of all the responsible administrations, as described in the answer of question 2) with timeframes ranging from 30 to 90 days. Promotion and support of the Services Conference tool - The Services Conference has proved to be an effective tool in order to speed up the authorization process for complex projects. Operators hope for greater dissemination of this tool. The Conference of Services used by the Sardinia Region is considered a best practice: the Sardinia region uses the service conference for the authorization procedures referred to in Legislative Decree 259/03. The adoption of this measure allows a bureaucratic streamlining (only one administrative procedure is activated) and provides certain times that 90% are respected by the Public Administration (from 45 days up to 120 for the more complex proceedings with Constraint as per Legislative Decree 42/04 Title I).
LT	In Lithuania, the longest term for issuing a permit is a building permit (for real estate) and it is significantly shorter than 4 months. In order to fully comply with the requirement of Article 43 of the EECC, the Law of Electronic Communications in Lithuania provides for a maximum time limit for the court to establish an easement (6 months).
LU	No best practices identified yet – in waiting for the law transposing the Code
LV	Electronic Communications Office could issue permit for installation of radio equipment or mobile base station within 10 days. The building authority should issue permit within 30 days.
MT	Such cases are extremely rare in Malta and if such case happens generally the operators reach an agreement among themselves before going to Transport Malta. Operators making the request will be advised to negotiate an agreement. If this is not resolved, permits will be granted on a first come first served basis.
NL	According to the Dutch Telecommunications Act the titleholder or manager of public land shall be obliged to tolerate that cables are installed, maintained, or removed in and on said land (see also answer to question 2). Before a telecom provider can start carrying out the civil works involved, he must first get a consent from the municipality. Besides, he must also reach agreement on the time of the works. In the case that the municipality is the titleholder or manager of public land, consent for rights of way of the public land and civil work permit will be combined and provided withing the 8 weeks period for the civil works consent.

PL	Right referred to in Article 43 of the EECC may be granted in different procedures. Telecommunications undertakings' rights related to property can be divided into two groups according to two branches of law – civil and administrative. Under civil law procedures particularly important is institution of transmission easement according to which real estate may be encumbered with a right in favor of an undertaking who intends to construct or which owns the facilities inter alia for supplying telecommunication services under which the undertaking may use the servient estate within a designated scope, in accordance with the purpose of the facilities. Transmission easement may be established by contract or by a judgment of a civil court. Telecommunications undertakings may also apply, inter alia, for access to: - physical infrastructure. As a rule for a fee, but in the case of access to a public physical infrastructure in order to locate a small-area wireless access point, is proposed a solution whereby this access will be free of charge; - property to provide telecommunications in the building. This right results directly from generally applicable regulations and any disputes are settled by the President of UKE as national regulatory authority; - property for the purpose of placing telecommunications infrastructure facilities and devices on the property for purposes not related to the provision of telecommunications in the building located on the property (so called “transit-purpose”). This right results directly from the provisions of abovementioned Act, as a rule involves fee for access provider and any disputes are resolved by the starosta (head of country administration which is body of local government as a competent authority, sub-region below NUTS 3). Pursuant to the Act of 7 May 2010 on supporting the development of telecommunications networks and services, the coordination of civil works consists in: 1) cooperation between the network operator and a telecommunications undertaking to enable the undertaking to perform construction works related to a high-speed telecommunications network at the same time and in the same place, in particular in the same building or in a joint excavation, as the construction works performed by the operator network; 2) the design and implementation by the network operator of physical infrastructure, in particular cable ducts, cable cabinets, point of contact or antenna support structure, taking into account the needs of the telecommunications undertaking regarding the implementation of elements of a high-speed telecommunications network, if duplication of this infrastructure by the telecommunications undertaking is technically not feasible or economically inefficient. The telecommunications undertaking and the network operator should regulate the rules of providing access to property in the contract which means that each party to the contract should ensure the right of way in the form of: purchase of property, rent, lease or easement. If the network operator has rights to property, which can be disposed, it should also establish them for the benefit of the telecommunications undertaking. The establishment of such a right may take place against payment and free of charge. It should be noted that the right to access the property also includes the right to enter the property in the future, in order to, for example, remove a failure or repair. Access to property in the case of investments located in road lanes is provided on the basis of the provisions of the Act on public roads: In terms of deadlines:

	- the network operator is obliged to state the reasons for the refusal to consider the application for the coordination of civil works as justified within 30 days of its receipt; - in the event of a dispute, the starosta, competent for the place of the works, shall issue a decision on the coordination of construction works immediately, but not later than within 60 days from the date of submitting the application for its issuance. In the case when the coordination of civil works includes facilities and construction works located within the technical zone, ports and marinas, internal sea waters, territorial sea and the exclusive economic zone, as well as in other areas intended for traffic maintenance and maritime transport, the decision is issued by the voivode (instead of starosta). The voievode represents government in the voievodship which corresponds to NUTS 2. All of above-mentioned decisions (permits) shall be granted explicit. if competent authority doesn't timely end of the procedure by issuing an appropriate decision, specific permit is not granted.
PT	DL123/2009 already ensures the link between the granting of a right of way and the procedure associated with the construction of physical infrastructures suitable for accommodation of electronic communications networks. Thus, it is mandatory to instruct the procedure of prior communication with confirming evidence of the granting of the right of way. As referred before, the procedure of attribution of rights of way relative to assets integrated in the municipal public domain is instructed in conformity with article 6 of DL123/2009, accordingly which, more than 30 days cannot elapse between the date of submission of the request and its decision. If this time limit (30 days) elapses without the municipal council having issued its decision, this will correspond to the attribution of the right of way. EECC (Article 43 procedure) transposition presently is underway.
RO	According the Law no. 159/2016, are deemed titles for the issuance of the urban planning certificate and of the building permit : leasing contracts concluded by the providers of electronic communications networks with the owners, other holders of main real rights, the administrators, the assignors, the lessors, the holders of the right of commodatum over the land or buildings where electronic communications networks or physical infrastructure elements necessary for their support are to be installed or deployed, as well as electricity connection contracts, if these contracts explicitly include the owners' consent for the execution of the construction works or, in the absence of such leasing contracts, the final court decisions standing as a contract between the parties. Therefore, the two procedures, obtaining the right of way and the civil works permit, cannot be performed in parallel. At the same time, according the Law no. 159/2016, the holder of the right of administration, established according to the law, as applicable, or the holder of the right of concession, of lease or of commodatum, as applicable, when enabled to settle the request, will analyse the observance of the access conditions provided by the law and will communicate to the requester the grounded answer, within 30 days from the date of receiving the request accompanied by the documents attesting compliance with the access conditions.

	Considering that urban planning certificate must be issued no later than 15 days and the building permit must be issued no later than 30 days, even unrealized in parallel the said period of 4 months should not be exceeded.
SE	To grant the right to deploy and maintain equipment for electronic communications on buildings belonging to another property owner the right of way can be applied. In the Swedish ”Ledningsrättslagen”, regulating rights of way, paragraph 23a, it is stated that a legal decision shall be made within maximum 4 months from the complete application. The Swedish mapping, cadastral and land registration authority (Lantmäteriet) has appointed special teams of administrators, and a broadband coordinator, to handle these issues to create conditions for a uniform and legally secure handling of the legal matters, and to grant or refuse the application within 4 months. The Swedish mapping, cadastral and land registration authority work process regarding rights of way in the field of electronic communicaitons is compressed and the different steps are handled in parallel. These matters are prioritized during the whole process.
SI	Art. 20 of the Slovenian Electronic Communications Act (ZEKom-1/ECA) stipulates that when concluding an easement agreement (if it is concluded by any network operator), one of the obligatory components of such an agreement is also a provision on the admissibility of joint use by any other electronic network operators. If the rights of way on real estate, owned by the state, is not established by a contract, the government may, at the proposal of the operator (regardless of the provisions of the law governing real estate expropriation and restriction of property rights!), decide on the public benefit of public communications networks other public benefit (Art. 16 ECA). In all other cases, if the owner of the real estate does not agree to signing the contract for the right of way within ten days of receiving the draft, the builder may request that the establishment of the easement be decided by the competent administrative body in an expedited procedure (this counts as an emergency procedure within the meaning of the law governing expropriation and property rights restrictions) (Art. 20 ECA).
SK	We have no best practices in Slovak Republic in this matter. There are unclear conditions concerning the rights of way in Slovak Republic. Undertakings have the right to deploy ECN without prior consent of the landlord or property owner in case that such a deployment is in **general interest**. There is only an obligation in place to **notify** the exercise of the right to the landlord/owner and to pay a **one-off fee** for the use of the property. As this regime seems to be in favor of faster and more efficient deployment, there are still concerns regarding the fulfilment of conditions of the deployment in general interest. These conditions must be evaluated on ad hoc basis (due to specific and unique circumstances) and is exercised by permit granting bodies – construction offices and thus can be very time consuming.

***Question 8**: Please name already existing and/ or planned best practices in your country as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Mechanisms to ensure that fees charged for the granting of permits for civil works that are needed to deploy very high capacity networks are objectively justified, transparent, non-discriminatory and proportionate to their intended purpose and that they cover only the administrative costs incurred for the provision of such permits.*	
Member State	National Best Practice
AT	Please see answers to Q4.
BE	Fees are intended to cover administration costs. <u>Regarding permit granting for antennas, in the Flemish Region:</u> • For the certificate of conformity for operating an antenna, a fee is asked for reviewing the submissions. The fee is to cover the costs resulting from file handling. The fee is fixed (base price is 200 or 75 euro with annual indexation) in the legislation. • By law, the cost for an integrated environmental permit applications is fixed for all permit applications (500 Euros). This is not a tax, but only an amount that covers the administrative costs of treatment of the application.
BG	
CY	-
CZ	1) This has been a big issue for many years in the Czech Republic, even the National Plan for the Development of Next Generation Networks of 2016 mentions problems of this kind. To solve it, a working group of experts from both – the governmental level and industry level – worked on an Action Plan to enable wider discussion and finding a solution. In consequence, the "Action Plan 2.0 to implement non-subsidy measures to support planning and construction of electronic communications networks" presents this issue as a core one. Discussions on level of fees, conditions and responsibilities of each party involved are still ongoing. 2) To ease the situation, the National BCO is involved to serve municipalities and investors in electronic communications networks as a mediator explaining the role of those networks and assisting in finding a win-win solution.
DE	In general, the intention is to keep the administrative costs charged as low as possible and to only cover the actual administrative expenses. Here, no additional financial burden is to be imposed on network operators.
DK	Generally, fees usually must be proportionate with the actual administrative burden incurred. For digging permits, there is no fee. However, a query in the Danish Register of Underground Cable Owners (LER) in order to avoid digging damage etc. is mandatory before digging, and these queries cost a fee. However, there is an annual maximum per digging entity for these

	fees. The fees fund the LER registry and so are used to maintain a registry which protects all underground infrastructure owners from digging damage. The LER Act states that expenses for running and maintaining LER must be covered by fee revenue, so that it is ensured that revenue over a four year period corresponds to the expenses. For building permits, municipalities can choose whether or not to require fees. If they do choose this, fees must either be a fixed fee for that type of permit, with the total revenue not being allowed to exceed administrative cost for that type of permit, or based on time spent processing the permit (an hourly fee). Fees/hourly rates are set locally in accordance with applicable national rules. For rural zone planning permits and other relevant permits/exemptions, there are usually no fees.
EE	The fees are set in the State Fees Act. The local municipalities have to follow the State Fees Act. There are no special fees for granting permits for civil works that are needed to deploy very high capacity networks.
EL	Pursuant to Law 4727/2020, Art. 151, par. 9, all issues concerning the fees are settled by decisions issued by the NRA.
ES	-
FI	For permits granted by government agencies the basis for the fees are defined in legislation (Act on criteria for charges payable to the state and decrees based on the Act issued by various ministries). The general principle is that the fees are based on the costs incurred.
FR	Il n'y a pas de frais administratifs prévus pour autoriser le lancement de travaux de déploiement de réseau.
HR	Fees for most procedures have been abolished by the latest legislation amendments. There is only a fee for obtaining a usage and building permit. Also, there are additional benefits (reduced amount for the issuance of a usage permit for a building built on the main project and further reduced by 15% if the application is submitted electronically).
HU	In accordance with the provisions of the European Electronic Communications Code, these principles will be transposed into Hungarian law, and will form the basis of the fees charged for the granting of civil works that are needed to deploy very high capacity networks.
IE	Following engagement with the telecommunications industry and through collaboration with the Mobile Phone and Broadband Taskforce, the County and City Management Association (CCMA) introduced a revised standardised pricing framework for the granting of road opening permits in 2018. This revised pricing framework – the 'National Charging Framework' – aimed to provide clarity and certainty and, when combined with the new National Deposit Scheme, would serve to reduce the cost to telecommunication companies (and other utilities) of opening roads and pavements. The revised framework addressed application fees, bonds and refundable deposits and long-term impact charges consistent with the guidelines for managing openings in public roads, published by the Department of Transport, Tourism and Sport (DTTAS). The Mobile Phone and Broadband Taskforce identified the need to monitor the implementation of the National Charging Framework during its first stages of development, in order to ensure efficient and timely rollout. By Q2 2018, the CCMA had collated the pricing framework for all local authorities in line with the guidelines and all local authorities had implemented the framework. By Q3 2018, the standardised application fees had been implemented nationally. In addition, a general agreement between the sector and Industry on the structure and

	implementation of a National Deposit Scheme was met, which would move to "median" rates for Long-Term Impact Charges under the National Charging Framework. The National Deposit Scheme (NDS) was implemented in 2019.
IT	According to the above-mentioned Decree no. 33/2016 no fees can be charged for granting of permits for civil works that are needed to deploy very high capacity networks, Only local taxation for the use of public areas may be imposed by local administrations.
LT	Fees for public administrative services were set centrally and are transparent and reasonable.
LU	The fees are published on the website of the municipality
LV	According to the law on High-speed Electronic Communications Network any charge shall be objectively justified and cost-based. Permit for new construction is 51,22 EUR, permit for reconstruction is 30,73 and renovation – 24, 62 EUR. Mobile base station or radio equipment installations permit is 35, 57 EUR
MT	No secondary legislation has been adopted under CAP. 81 Utilities and Services (Regulation of Certain Works) but the SUBSIDIARY LEGISLATION 499.37 RIGHT OF WAY FOR UTILITIES AND SERVICES (FEES) REGULATIONS regulates the fees to be charged by The Authority for Transport in Malta by operators for rights of way.
NL	Permit granting procedures for civil works (municipal fees) are an important factor for the deployment of very high capacity networks. Whilst respecting the local autonomy of municipalities in the Netherlands, we strive for harmonisation of local policy where possible and exchange of best practices to accelerate deployment. This is one of the key priorities of the Dutch Connectivity Action Plan. In October 2019 we hosted 7 regional round tables with provinces and over 200 municipalities about connectivity and local policy (fixed broadband and 5G). Also we have launched a special website (www.overalsnelinternet.nl) for municipalities where they can find relevant information for shaping their local policies with respect to matters concerning the deployment of VHCN. Since the launch we have published several best practices from local authorities about harmonisation and other efforts regarding local fees and conditions to accelerate deployment VHCN. Specifically for the deployment of fibre networks in rural areas, various municipalities have adjusted their calculation method for levying fees for permit granting for civil works. Instead of levying fees per linear meter of civil works, fees have been levied per (home) connection, which makes the business case in rural areas (due to the large distances) more viable. Further steps in 2020/2021 include the adoption of a recommendation for the calculation of municipal fees with respect to the deployment of VHCN.
PL	Fees related to obtaining building permits were regulated in the Stamp Duty Act of 16 November 2006 (Ustawa z dnia 16 listopada 2006 r. o opłacie skarbowej Dz.U. 2006 nr 225 poz. 1635). As far as telecommunications networks are concerned, regardless of whether they are very high capacity networks, the Act provides for a fee of 2143 PLN. It is also worth noting that the current regulations require the construction of technological ducts (ducts designed to accommodate fiber optic cables) in case of public roads construction. In this case, fees are also charged for obtaining a road construction permit. The fees are the same as above, but they are not charged additionally for the construction of these ducts. Additionally, in case of the situation of the very high capacity networks on general terms, a fee of PLN 598 can be expected for the issuance of such decision on building conditions and land development in areas not covered by the local spatial development plan. The fee is the same for any applicant who is not the owner of the land applied for.
PT	With regard to municipal authorization (foreseen in DL11/2003, referred in answers to questions 1 and 2), it is up to the municipalities, by

	regulation, to set the applicable rates. As for fees charged by municipalities under the prior communication procedure, the NRA (ANACOM) has no concrete information on the application of this regime.
RO	The applicant has to pay a fee to obtain a building permit which is determined according to construction cost. Beyond the building permit fee, other fees may be required.
SE	-
SI	The majority of electronic communications networks elements do NOT require a granted building permit in Slovenia, as described in pt. 1, therefore no fees are charged. For other building permits, fees are meant to cover administrative costs and can vary from 22 EUR to 0,01% of the building value. The price agreement specifically regarding the rights of way is a relationship in the private sphere of the parties, but in the event of a dispute, the monetary compensation for the easement may not exceed the reduction in the value of the serving property or actual damage and lost profits.
SK	We have no best practices in Slovak Republic in this matter. Permit fees have to be strictly distinguished from fees for rights of way exploitation or other property reuse based fees as municipalities are often also owners of the property affected by the planned deployment or civil works. Therefore permit granting fees should be strictly limited to the level of administrative cost.

***Question 9**: Please name already existing and/ or planned best practices in your country as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Other mechanisms to facilitate compliance with the maximum deadline of 4 month for granting or refusing permits.*	
Member State	National Best Practice
AT	Not applicable; see also Q7.
BE	<u>Regarding the Walloon Region:</u> Reference is made to the POWALCO platform, in relation with the "Décret impétrant" of SPW. In POWALCO the status of the authorisation request is shown which facilitates compliance with deadlines. If the deadline is exceeded, a notification is sent by email. <u>Regarding the Flemish Region:</u> The maximum allowed time to handle the request for the certificate of conformity for antennas is 60 days. A maximum time limit of 120 days is written in the law, to handle permits for civil works for telecommunications infrastructure.
BG	
CY	-
CZ	see question 8
DE	-
DK	See the answer to question 10.
EE	-
EL	-
ES	Points 3 and 4 in this document already explain mechanisms that directly impact on this 4-month compliance. **Please note that in Spain we consider those mechanisms** (deployment plans and prior single notifications) **as a key case of success and a clear best practice**. Without them, it would have been very difficult to reach the figures concerning FTTH and broadband coverage in Spain.
FI	-
FR	Voir question 3
HR	Deadlines prescribed by the *Building Act* are in line with the required maximum deadline of 4 months for most ECI (connection to the building, cabinet, masts, roof-top antenna installations) with **exception for cable duct for which it is necessary to obtain a building permit**. Main problem is that administrative bodies do not follow prescribed deadlines by law. Therefore, it should be enforced that all the participants in the process respect prescribed deadlines. In addition to above the Ordinance should define the construction of cable ducts as "simple construction", regardless if it is built with a

	mini/micro trench or in the trench excavation (normal) way. **Without this change, it is impossible to achieve a deadline of 4 months for receiving of all the building permits. Also it would be very good if we can get statistic about duration of the procedure getting permits.**
HU	Current Hungarian legislation specifies a deadline of **60 days** for the procedures concerning the granting of civil works permits. We would stress that the timely conclusion of these procedures hinges upon the quality and admissibility of the documentation submitted by applicants.
IE	No other mechanisms identified in Ireland.
IT	It would be desirable the realization of the one-stop-shop for applications, with synchronization of the permits referred to the same intervention.
LT	No additional comments.
LU	If the municipality doesn't answer within 3 months, the demand is deemed refused, which automatically gives the demander the right to do an appeal in court.
LV	-
MT	As explained above, Transport Malta takes few days to grant of refuse a permit. This is easily done in Malta due to its size and structure, as well as the number of permit requests made daily which when compared to other countries is minimal.
NL	-
PL	No other mechanisms.
PT	The NRA (ANACOM) has no additional information on this.
RO	Failure to comply with the terms of building permit issuance provided by the Law no. 50/1991 constitutes contravention.
SE	-
SI	The majority of electronic communications networks elements do NOT require a granted building permit in Slovenia, as described in pt. 1. The general deadline for granting other building permits is 2 months.
SK	We have no mechanism to facilitate compliance with the maximum deadline of 4 months for granting or refusing permits. According to the BCRD requirements the maximum period for permit granting shall not exceed 4 months period. Unfortunately, the practical experience in Slovak Republic (based on the debate with sector players) is not fully in line with the prescribed limit. The permit granting procedure usually takes 6 to 9 months (even more in some cases), this situation is caused by rigid requirements on participation of large amount of stakeholders in permit granting procedure. Timelines for permit granting procedure in accordance with BCRD have not been enforced in Slovak Republic yet. There are strong differences in the time for permit granting procedure depending on the local authorities concerned. According to Study of World bank (Doing business) from 2020 Slovak Republic has the average time of permit granting procedure 300 days. Also there is no electronic permit application system.

***Question 10**: Please name already existing and/ or planned best practices in your country as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Other mechanisms to simplify and streamline permit granting procedures.*	
Member State	National Best Practice
AT	Not applicable; see also Q7.
BE	For the Walloon Region, reference is made to the POWALCO platform, in relation with the "Décret impétrant" of SPW. See http://www.powalco.be/tutoriels-et-guides/. The platform integrates the different steps of the procedure, such as sending a demand for extra information, organising a meeting, etc. <u>Regarding permit granting for antennas, in the Flemish Region, there are various online tools:</u> • In Flanders all integrated environmental permit applications can be submitted digitally through the dedicated website www.omgevingsloket.be. Permits are also issued digitally. All information and communication (from government to operator, between governments, from operator to government, …) is done through the digital portal. • For the certificate of conformity for operating an antenna, the Department of Environment developed a webtool to handle the requests for a certificate. This online tool for the attests of conformity uses existing data layers with buildings (with the height of the buildings) and hosts an antenna database (filled by the operators) to facilitate the permit granting. The tool for submitting requests can also handle questions and clarifications. When approved, the tool makes and sends the certificate to the operator.
BG	
CY	-
CZ	see question 8. In addition, BCO prepares for municipalities a set of materials describing procedures, best practices and essentials of contracts to speed up and ease the procedures. First prints of the most urgent information will be published and disseminated in December 2020.
DE	The **Act to improve online access to administrative services (Online Access Act - OZG)** obliges the Federation, federal states and local authorities to also offer their administrative services via administrative portals in digital form by the end of 2022. This also concerns permit granting procedures for the deployment of VHCN. Within the framework of the Online Access Act, the network operators are given the opportunity to provide the competent authorities with all applications and information via a one-stop shop and by electronic means. However, this one-stop shop is not the German Single Information

	Point within the meaning of the BCRD. Since the go-live of the **digital construction permit**, for instance, is still pending, we cannot report on best practices already applied. However, it is to be expected that this will change very soon when the digital construction permit goes online. With regard to the online solutions, the intention is to create **transparency concerning the required documents/conditions early on.** In this way, applicants are to be informed of what they have to submit from the beginning, and potential inquiry loops are to be avoided. Within the framework of the implementation of the Online Access Act, in Hesse, for instance, the Digitalization of the consent procedure in accordance with section 68(3) of the Telecommunications Act (TKG – **Consent of the authority responsible for the construction and maintenance of public ways regarding the laying or modification of telecommunications lines**) is enshrined in the **Broadband Roll-out Digitalization Lab**. Under the joint lead of Rhineland-Palatinate and Hesse, it was determined together with potential applicants how the application procedure can take place digitally and in a user-friendly manner in the future. Now, after completion of the reference implementation, the application portal of seven selected pilot local authorities in Hesse, Rhineland-Palatinate and Baden-Württemberg can currently be tested in real world conditions. This is to help further simplify permit granting processes in the context of broadband roll-out and accelerate the roll-out of gigabit networks providing nationwide coverage. In the medium term, all applicants relying on public ways for their deployment activities will benefit from this procedure. Building on this basic digital system (CIVENTO design tool for digital processes), an end-to-end digitalization of further permit granting procedures will be possible later on. In the City of Hamburg, the submission of applications for path permits/excavation permits (Trassengenehmigungen/Aufgrabescheine) has already been digitalized. The digitalization of administrative coordination processes for consenting to path permits/excavation (Trassengenehmigungen/Aufgrabescheine) permits is currently being implemented. The digitalization of the construction permit application procedure for mobile communications masts is scheduled for 2021. Moreover, the federal states, with the involvement of the Federation, have prepared comprehensive **implementation guidance** on the assessment under building law of mobile communications installations (one focus: mobile communications installations on white land), which the Standing Conference of Federal State Ministers and Senators responsible for Urban Development, Building and Housing adopted in September 2020 and has now published on its website. The federal states have agreed to promulgate it within their remits. **Single, local authority contact points for the gigabit roll-out** may be a possible instrument for the coordination of inquiries and the prevention of inconsistencies concerning permit granting processes: The State of North-Rhine Westphalia provides funding for broadband coordinators and gigabit coordinators who work at the local authority level. The coordinators, among other things, also strive to improve communications processes and the temporal coordination of the authorities involved in broadband roll-out. Within the framework of the Building Land Mobilization Act, to support the nationwide roll-out of mobile communications, the requirement

	catalogue of section 1 of the Federal Building Code (BauGB) is to be expanded to include the roll-out of mobile communications, and section 14 of the Federal Land Utilization Regulations (BauNVO) is to be amended to provide facilitations, in particular for residential areas. In the future, the **Mobile Communications Infrastructure Company (MIG)**, which is to be established within the framework of the German Mobile Communications Strategy, will monitor and provide technical expertise for the implementation of construction measures performed with Federal Government funding and be in charge of enhancing coordination with the federal states and local authorities. The primary purpose of this is to accelerate the roll-out of mobile communications.
DK	The Danish Energy Agency is continually developing a toolbox for Danish municipalities, which grant the majority of relevant permits. The toolbox consists of: - Suggestions for ways to streamline permit procedures which have been experienced as positive by both certain municipalities and the telecom providers ("municipal best practices"). - Compilations of relevant law and jurisprudence which enables both telecom providers and municipalities to anticipate and fulfil all relevant requirements without any delays due to incomplete documentation etc. - Specific knowledge which municipalities may find useful, e.g. information on different types of masts including technical pros and cons, as well as information about the option to get an expert opinion from the Danish Energy Agency on coverage maps for one or more candidate positions in the process of evaluating site candidates from a municipality's point of view, etc. The best practices identified at the municipal level include: - Appointing an employee as single point of contact for telco matters in each municipality who coordinates permit procedures across offices in the municipality - Adopting a policy on masts (political decision in the Municipal Assembly) which establishes clear guidelines for the municipal administration as to the prioritization between e.g. landscape protections and masts – e.g. pointing out, within the scope of national law, the conditions under which a municipality will, as a rule, grant a permit for establishing a mast even in areas of certain aesthetic etc. value. In bringing together municipalities and telecom operators as well as relevant national authorities, hosting meetings of the working group on development of the toolbox could in itself be seen as a valuable best practice. The ongoing dialogue on issues between all parties has often resulted in a better mutual understanding or started bilateral dialogues between participants on concrete current cases. Many municipalities participate in municipal knowledge-sharing networks and invite telecoms operators to dialogues. Local Government Denmark (KL), the association and interest organisation of the 98 Danish municipalities, also shares best practice etc. on its homepage.

	Many municipalities already follow the advice in the toolbox (having provided the ideas themselves) and so have policies on masts, containing guidelines on the permit granting process, and in many cases these are agreed between a group of municipalities covering a large geographic area, so that the same guidelines apply across these municipalities. The materials are published and distributed via the telecom sector's industry organization and other IOs so that telecom operators know them. Many municipalities also have a broadband coordinator or internal cross-office hearings in order to coordinate all relevant permits in the individual project. Municipalities also encourage telecom operators to engage in an informal preliminary dialogue before submitting an application so that possible locations of a mast/antenna and other aspects (e.g. process) can be discussed in order to ensure a smooth application process.
EE	-
EL	-
ES	Points 3 and 4 in this document already explain mechanisms that directly impact on permit granting simplification. **Please note that in Spain we consider these mechanisms** (deployment plans and prior single notifications) **as a key case of success and a clear best practice**. Without them, it would have been very difficult to reach the figures concerning FTTH and broadband deployment in Spain. In the following lines, you will find some practices that we consider to be important in order to ensure 4-month compliance and the effective implementation of streamline permit granting procedures. Due to the fact that they affect to both questions, we list them here, following this structure: Best practices related to lack of training/information33 of municipal staff34: • Best practice 9 • Best practice 10 Best practices related to legal fragmentation35 along different local regulations:

33 Operators in Spain have a very positive opinion of these tools.

34 Introducing tacit approvals or permit granting procedures simplifications will be useless unless local staff receives proper training. In Spain, it has been observed that some of the established fast-track procedures were not applied just because local staff did not know them, even if they were included in the telecom regulatory framework.

- Best practice 11
- Best practice 12
- Best practice 13

Best practices regarding EMF exposure concerns36:

- Best practice 14

Best practices linking fast-track procedures to technical conditions:

- Best practice 15

Best practices regarding municipalities internal coordination

- Best practice 16

BEST PRACTICE 9:

<u>Training plan for municipal services</u>

One effective way of ensuring that deadlines and streamline permit granting procedures are respected is by providing means of telecom regulatory framework training for local entities staff. Spain is seeing initiatives of this kind (Ministry, Andalusia, etc.) and results are usually

35 This has traditionally been a serious problem in Spain, since some municipalities had outdated regulations that were not alligned with the electronic communications legal framework. This means that fast track procedures or tacit approvals did not apply in those muncipalities whose regulations where not adapted to the mentioned legal framework, constituting a serious burden to electronic communication networks roll-out.

36 Experience has shown that these concerns could delay or even stop electronic communications network deployemtns.

	quite satisfactory as they give local staff proper tools to perform their job and raise awareness of the importance of telecom infrastructure deployment at the same time. It is also an opportunity for telecom national authorities to detect other issues concerning network deployments. It is proposed that each member state designs a training programe for municipalities explaining the main characteristics of the regulatory framework, the postive impact of electronic communications network deployment (including the need of their civil works), procedures that apply concerning permit granting / prior single notification and other issues that must be observed when they exercise their powers in regars of these deployemnts. As an example of initiatives in Spain, some are highlighted: 1. Andalusia online training platform to concentrate specific training courses and other additional resources. Last courses: a. Controls on the deployment of telecommunications networks by Andalusian local authorities (https://bit.ly/35NQlir) b. Operation of public infrastructure for the deployment of networks https://bit.ly/3kUUuwI 2. Webinar/seminar cycles from the Ministry of Economic Affairs and Digital Transformation: a. Public policies to promote investment in telecommunications b. Single Information Point. The deployment plan tool for network roll-out (course organized with the Spanish Federation of Municipalities and Provinces). These training plans must be updated and constantly offering new training courses, because of the broad spectrum of involved stakeholders and the constantly changing regulation. A way of spreading them is to integratate a training platform with the Single Information Point. BEST PRACTICE 10: <u>Information resources for municipalities staff and local regulation drafters</u> One effective way of ensuring that deadlines and streamline permit granting procedures are respected is by providing necessary information and guidelines for local entities staff. Spain is seeing initiatives of this kind (Ministry, Andalusia, etc.) and results are usually quite satisfactory: 1. They give municipalities staff proper tools to perform their job 2. They solve doubts to municipalities staff when they have to deal with authorization procedures or deciding whether a certain telecom infrastructure is installed with all legal guarantees.

	3. They help to ensure that deadlines and fast-track procedures are respected. It is proposed that each member state designs a portal (that may be integrated with the SIP) containing information on how the legal framework must be applied at municipal level. The portal may include content explaining how this legal framework must be applied (what kind of infrastructure should be subjected to a fast-track procedure, for example) and tools helping municipalities to know what kind of tools should be applied (i.e: how deployment plans are treated and when they apply, when to use a single prior notification, etc.). As an example of initiatives in Spain, some are highlighted: 1. Consulta Teleco, the telecommunications advisory office of the Junta de Andalucía. It is a web portal that provides with advisory service for local administrations of the Junta de Andalucía. Since its creation in 2006, its action is supported by more than 9,200 cases managed and an evaluation of its average service of 9.4 out of 10 of its users. Link: https://www.consultateleco.es 2. Teleco controls calculator, Junta de Andalucía: Application that allows in a very simple way to obtain the legal controls (authorization vs prior single notification, other procedures such as environmental, cultural, etc.) to which the telecommunication networks must be subjected from the local point of view. This tool arises as an implementation of the "Guide to Controls", published in January 2020 in its first version, by the Ministry of Economic Transformation, Industry, Knowledge and Universities of the Andalusian Government. Link: https://www.consultateleco.es/media/public/calculadora-controles.html 3. Ministry web page describing problems that are commonly found in regulations and other deployment issues. As it deals with problems that arise from the implementation of local regulations to electronic communication networks deployment, it is useful to solve doubts and ensure a correct telecom framework application. Link: https://avancedigital.gob.es/urbanismo-despliegue-redes/informes/Paginas/informes-urbanisticos.aspx It also includes a mailbox where where municipalities, operators and citizens can address their questions concerning electronic communications physical deployments (legal framework, common issues and other questions). Teleco.urbanismo@economia.gob.es BEST PRACTICE 11:

	Biding reports on urban town plannings and local regulations In accordance with article 35.2 of General Law on Telecommunications, each municipality in Spain must obtain a binding report from the Ministry of Economic Affairs and Digital Transformation in order to be able to approve an urban planning or local regulation affecting electronic communications deployment. This report will determine whether these documents are aligned with the European/National electronic communications framework and the elements that must be modified in order to achieve so. The Ministry has 3 months to deliver the binding report since it has been requested (with the urban planning/regulation attached). Once it has delivered, in case it has not been favourable, the municipality has 1 month to amend the text or present claims on the binding report. The ministry has then 1 month to reply with a final version of the report. The urban town planning /local regulation cannot be approved unless they obtain a favourable report. This prevents local regulations not respecting permit deadlines and the application of the correct authorization regime (tacit approvals, fast track permit granting, prior single notification, etc.) or introducing disproportionate restrictions to electronic communication networks deployment BEST PRACTICE 12: Model of municipal regulation on electronic communication network deployment Article 35.7 foresees that the Ministry of Economic Affairs and Digital Transformation may publish a model of municipal regulation for electronic communication network deployment, to be adopted by the different municipalities in Spain. The adoption of this regulation would prevent municipalities to obtain the aforementioned binding report (BEST PRACTICE 3). This model of municipal regulation is a great tool, since it allows standardization in Spanish local regulations and offers proper guarantee that the correct legal framework is going to be adopted in each municipality (including fast track procedures and 4-month deadline compliance). This model of local regulation has already been drafted and will be brought for discussion with municipalities and telecom operators soon. For this and other purposes, a group including the Spanish Federation of Municipalities and provinces (FEMP), the Spanish Network of Intelligent Cities (RECI), the Spanish association of operators and manufacturers (DIGITALES) and the Official College of Telecommunication Engineers has been set by the Ministry of Economic Affairs and Digital Transformation.

	BEST PRACTICE 13: Training and correct information for local regulation drafters Most of the local regulations and town plans are drafted by architectural bureaus in Spain. They are usually experts at urbanism, but they are not so familiar with the electronic communications regulatory framework. This leads either to regulations that do not respect the telecom regulatory framework or to myriad of types of local regulations, contributing to legal fragmentation. The aim is to provide them with the necessary tools in order to write accurate and proper dispositions in local regulations, especially those related to fast-track procedures and permit deadlines for electronic communications infrastructures. For this purpose, the Ministry of Economic Affairs and Digital Transformation is drafting an explanatory document that will be issued to the Official College of Architects and they will distribute it to the different architectural bureaus in Spain. Some training courses are also foreseen. BEST PRACTICE 14: Publication of a response model for municipalities on EMF exposure questions Within the group mentioned above (FEMP, DIGITALES, RECI) a model of response to citizen questions concerning EMF exposure or 5G risks is being drafted. It will be accompanied by an infographic document explaining the basics of EMF exposure and the safety consensus. BEST PRACTICE 15: Streamline granting procedures subject to certain technical compliance Some municipalities have concerns about how deployments are installed. This causes that some municipalities are reluctant to the use of streamline granting procedures or even delays when an authorization for telecom network deployment has been requested. For this purpose, it is useful to count with technical guidelines of electronic communication networks roll-out, agreed among public authorities and the industry (opertaros, manufacturers). When having these guidelines and the level of consensus is high enough, it is useful to condition the possibility of using a streamline granting

	procedure to the compliance of those technical guidelines requirements. In this case, it will be necessary to attach to the single prior notification an affidavit of such accomplishment. In Spain, this guidelines document exist for radio stations (link). Its update is foreseen in the FEMP, RECI, DIGITALES group and the condition of a streamline granting procedure to the compliance of these technical guidelines has raised in that group, for electronic communication networks deployment in public domain. BEST PRACTICE 16: <u>Municipalities internal coordination tools.</u> Accessing to physical infrastructure or permit issuing often involves the action of different units of a given public administration (i.e: city council). When this coordination is not well managed, problems for network deployments arise. In order to facilitate the electronic communication networks deployment management and in order to properly process occupation of public domain requests, it may be useful to set up permanent work teams in city halls. These permanent groups will include all the departments that are involved in electronic communications physical deployments, participating not only in the permit granting procedures, but also in the infrastructure and service management that could be affected (public lighting, water and sanitation, urban furniture, public roads, mobility, etc..). The group would be coordinated by a figure being responsible for the dialogue with the operators. Cities like Donosti in Spain follow this approach for network deployments. Encouraging these kind of groups would clearly benefit streamline permit granting and better conditions for operators to deploy. The approach helps to simplify all the necessary processes for telecom operators to carry out their deployments in the municipality, facilitating acess to certain infrastructures and a timely response in permits management. It generates a better dialogue with operators so that a greater and more orderly positive impact on the city can be achieved. Last, but not least important, the existence of such groups motivates collateral activities, such as information gathering concerning municipal infrastructures that could be acceded by telecom operators, coordination of civil works and transparency on permit granting and procedures.
FI	Pirkanmaa EDTE-center has launched an electronic service for applying and handling the permit granting process. The service is designed to guide the applicant to provide all the necessary information for processing the application thus reducing or even eliminating the need for additional requests for information and streamlining the permit process. Lupapiste.fi is a permit application and granting service used by a majority of Finnish municipalities (currently 195 out of 310). It can be used by individuals as well as professional users for various permit processes pertaining to the permits granted by a municipality. Via Lupapiste.fi

	you can ask for a permit application, ask for advice, handle public hearing processes, submit the application and all the plans and annexes as well as get the actual permit. You can define the project area on the map and the online map service provides property information and land use indication (city plan) regulations. It also shows municipal infrastructure. The service notifies you of the different stages of processing the application with the authority. If additional information is needed, the requests are made through the service. The permit granting authority can also provide guidance for the applicant through the service. After the permit has been granted, also the communication and supervision of the actual deployment project is handled through the same service. The entire permit process is digitalized. The ongoing reform of the Land use and building act is aiming to make the municipal permit applying and granting process digital in all municipalities. The proposed legislation will make it mandatory for all municipalities to accept digital data model based applications and for all applicants to submit their applications in such a format. This would simplify the process and make it easier to process the permit applications swiftly. The objective of the reform is to have the new legislation in the Parliament in 2022.
FR	Voir question 3
HR	Adoption of a new legal regulation for all infrastructure buildings that will separate the procedure of new construction from reconstruction. This is necessary because otherwise reconstruction projects must go through the same complex model of issuing permits as new constructions. The regulation of the shared usage of antenna tower is vague and inconsistent which results in various actual implementations point.

HU	NMHH plans to issue a Decree to introduce a swifter authorization regime incorporating the following highlighted novelties:
	• **Promotion of property or facility sharing**[37]
	• **A growing emphasis on future application of "Simplified procedures"**
	  • Preconditions to be met for allowing application for such shall likely be:
	  • No missing or supplementary documentation
	  • No need to involve other competent cooperating authorities in the process.
	  • Procedural deadline 15 days
	  • Renovation, restoration and modernization works on existing buildings those currently requiring notification to the Authority might also be processed in the frame of simplified procedures in the future.
	• **NMHH promotes development and deployment of electronic communications related infrastructure and elements primarily on**

37 Section 94 of Act C of 2003 "Sharing of property or facilities"

	public property • NMHH would apply this in our regulation as a general rule. • **The new Decree shall likely enter into force with respect to final completion of NMHH's own Hír-Közmű[38] Registry project.** • Formats of technical documentation to be Annexed to requests are also very much determined by the above newly introduced Registry. • We have considered recommendations of the Hungarian Chamber of Engineers[39] in order to request only the utmost necessary documentation to be involved in our future authorization processes, and in the obligatory notification and data provision procedures with regard to the soon to be activated Hír-Közmű Registry. • **Ensuring and incentivising the use of e-administration.** Permit applications, plans and other documentation should be submitted electronically, via electronic forms provided by NMHH for this purpose. NMHH's decision is also communicated electronically to the applicants.
IE	One of the first deliverables of the Mobile Phone and Broadband Taskforce was for the Department of Rural and Community Development (DRCD) to provide co-funding to all Local Authorities (LAs) to assign a Broadband Officer (BBO) to act as the single point of contact for engagement with network operators, to assist with accelerated rollout of the National Broadband Plan (NBP)40 and to create awareness of, and stimulate demand for, broadband services. The Taskforce established structures enabling operators to actively engage, both formally and informally, with BBOs in local authorities. The BBOs have become key facilitators for operators to engage early at all stages of the planning application process.
IT	The Ministry of Economic Development, in agreement with the Unified Conference and the Italian Digital Agency (AgID), has defined the technical rules for the content of the Italian single information point (Sistema informativo nazionale federato delle infrastrutture, "SINFI"). The operators underline the importance of achieving a further reduction in the average times for issuing landscape, archaeological and monumental authorizations. This objective could be achieved by improving the use of telematic methods and by ensuring effective dialogue between administrations and public offices involved in the authorization procedure.

38 https://english.nmhh.hu/szakmai-erdekeltek/epitesugy/hirkozmu

39 https://mmk.hu/news/chamber

40 Further information on the National Broadband Plan available here: https://nbi.ie/rollout-plan/.

	In this sense, the SINFI is expected to provide further support in the future. In order to speed up as much as possible the obtainment of the preparatory authorizations for the construction of ultra-broadband fiber optic networks, as part of the ultra-broadband projects financed with public funds, agreements have been signed with the various entities (e.g. national rail company, public road company, the authority responsible for the protection cultural heritage), establishing the maximum time for the issuance of authorizations and the documentation to be submitted
LT	No special permits are required In Lithuania for electronic communications networks deployment.
LU	-
LV	-
MT	Since the permit granting procured is already simplified with 10 days from the date of submission to permit granting, we consider this as a best practice.
NL	As stated in the answer to question here are 2 digital facilities where municipalities can find information about and apply for permits: - Firstly there is the 'Omgevingsloket' (www.omgevingsloket.nl) through which mobile telecom operators can check and apply for an environmental permit needed for the deployment of an antenna installation. Municipalities must have connected their systems to this digital facility. - Secondly, for the installation, maintenance and removal of telecom cables there is the 'Ondernemersplein' (www.ondernemersplein.nl) where telecom operators can find information about the required consent (permit) from a municipality and a province. The website includes a functionality to search for the specific consent in a municipality and to digitally apply for a local consent (through a message box).
PL	No other simplification solutions.
PT	The NRA (ANACOM) has no additional information on this.
RO	According to Romanian legislation the plots where electronic communications networks or physical infrastructure elements necessary for their support are to be installed or deployed that are not included in the land and real estate registries can be identified by the number of the land strip and plot, according to the title and record of ownership, or by any other means of identification provided by law.
SE	-
SI	The majority of electronic communications networks elements do NOT require a granted building permit in Slovenia, as described in pt. 1.
SK	Mechanism to simplify and streamline permit granting procedures is of utmost importance. The current situation, where permit granting bodies- construction offices are often legally forced to insist on active involvement of subject with no relevant relation to the submitted projects, is not satisfactory. Only **major change of respective legislation** or a **specific fast-track procedure** designation appear to be an effective to address this issue. In cases where no construction or excavation work is exercised, there would be appropriate lighter (or no) permit granting procedure. Lighter permit granting procedure could also be appropriate in case of civil works with limited impact such as

	micro trenching.

***Question 11**: Did your Member State appoint one or more competent bodies to perform the functions of the single information point(s)? Please provide the reasons for your decision. If your Member State appointed several bodies, please explain how these different bodies coordinate amongst themselves in regard to the permit granting procedures or the sharing of information.*	
Member State	National Best Practice
AT	We appointed the national regulatory authority RTR to implement and maintain single information points (SIP, please see §§ 13, a, b, d TKG 2003). The goal was to create a SIP that can offer network operators more transparency regarding physical infrastructure including fibre-infrastructure as well as easy access to a platform that not only allows the upload of their data but also requesting information on data of others. In order to meet these requirements RTR collects data on physical infrastructure that is or can be used for telecommunication and on civil engineering projects of many different sectors while also cooperating with public sector bodies of different levels including municipalities and ministries collecting and integrating data on e.g. funded infrastructure projects.

BE	There are several competent bodies, due to the different competences. This leads to different platforms:
	
	• On the one hand there are the platforms that allow the requests for information regarding infrastructure (and cabling):
	  ○ KLIM-CICC is a federal platform that is also used by the Walloon Region and Brussels region. Not all concerned operators are present in the platform, so demands are forwarded to those other infrastructure operators.
	  ○ KLIP is the platform used by the Flemish Region, which also consults KLIM. All network operators are obliged to register.
	• On the other hand there are the platforms that process requests for coordination of civil works (and possibly permit granting):
	  ○ GIPOD is the platform used by the Flemish Region
	  ○ OSIRIS is the platform used by the Brussels Region
	  ○ POWALCO is the platform used by the Walloon Region

BG	
CY	Yes. OCECPR performs the function of the SIP. No other several bodies were defined.
CZ	Functions of SIP are performed by the Czech NRA. NRA was designated as a SIP due to the requirement of autonomy and independence in accordance with Article 10 BCRD. (https://www.ctu.eu/conditions-and-procedures-according-act-measures-reduce-cost-deploying-high-speed-electronic)
DE	Currently (since the entry into force of the Act to facilitate the deployment of high-speed digital networks on 10 November 2016), section 77a of the Telecommunications Act (TKG) designates the Federal Network Agency as the institution responsible for exercising the functions of the Single Information Point. Within the framework of the transposition of Directive (EU) 2018/1972 (European Electronic Communications Code), the Telecommunications Act (TKG) is being comprehensively revised and recast. The bill provides that the Federal Ministry of Transport and Digital Infrastructure will exercise the functions of the Federal Single Information Point (SIP). In accordance with the bill, the Federal Ministry

	of Transport and Digital Infrastructure can delegate the functions to its executive agencies or authorities under its technical supervision in part or in full or transfer statutory powers for the performance of the functions to third parties. In this connection, it is planned that the Federal Ministry of Transport and Digital Infrastructure transfers key functions to the Mobile Communications Infrastructure Company (MIG) described in the Federal Government's Mobile Communications Strategy of November 2019. MIG will integrate all information in the fields of shareable infrastructures (including such for small cells), broadband roll-out, future network roll-out, construction sites, public sector properties into a single data portal (GIS Tool). Broadband roll-out information is already available today in the form of the Broadband Atlas – in accordance with the current version of the bill, the obligation to also make available the aforementioned information will be laid down in the TKG, and the Broadband Atlas will be an integral component of the GIS Tool.
DK	For information on the location of existing infrastructure etc., the Danish Agency for Data Supply and Efficiency (SDFE) assumes the role of SIP for underground infrastructure. SDFE maintains the Danish Register of Underground Cable Owners (LER), which covers not only cables but also other types of underground infrastructure, see the answer to question 12. The Danish Energy Agency maps all existing and planned telecommunications sites (masts and antennas) at www.mastedatabasen.dk. Underground cables to and from masts/antennas will be covered by LER. The Danish Energy Agency also collects and distributes information on situations where legislation may require permits from national authorities and is able to advise municipalities and applicants on this in general terms. The Danish Energy Agency has an ongoing dialogue with all authorities who are responsible for legislation or permit granting for digital infrastructure on any issues which may arise. The Danish Energy Agency advises municipalities on best practices for telecommunication permits and technological matters. The reason for this division of labour is that SDFE as an authority specialising in data has a general expertise in complex mapping solutions and registries, while the Danish Energy Agency has the specific legal expertise in the telecommunications area as well as the legal responsibility for telecommunications masts (the Mast Act, which is the legal basis for www.mastedatabasen.dk).
EE	Register of Buildings is the single information point. It is managed by the Ministry of Economic Affairs and Communications.
EL	Ministry of Digital Governance has been assigned most of the provisioned functions of the Single Information Point, however some functions are executed by local authorities. However, this fragmented scheme has been proved non-efficient and all the SIP functionalities will be implemented by the new information system that is under construction.
ES	There is only one SIP in Spain appointed by Law, on the Ministry of Economic Affairs and Digital Transformation, pursuant to article 34.8 of General Law on Telecommunications. There are also private bodies in Spain that perform similar functions to the SIP, concerning (georeferenced) physical infrastructure information sharing (link), but not under a legal appointment. It must also be said that some web portals exist for electronic permit request/granting, but they can't be considered as a Single Information Point.

	Additionally, some Autonomous Communities or even some city halls are planning to start or have already started their single information point for infrastructure transparency. One case is even prior to 2014/61/UE. None of this SIPs grant permits. Best practices of these kind of SIPs are mentioned in question 13, as they are usually focused in public infrastructure. There is not an explicit decision for this situation: 2014/61/UE Directive does not specify on what authority SIP should be deployed and there is a wide degree of freedom for this purpose under the Spanish constitutional organisation. There is currently not a coordination system for these SIPs. With this in mind, one best practice has been identified in Spain concerning SIP coordination: BEST PRACTICE 17: <u>SIP Common Interconnection Interface Description (proposal of Andalusia Government):</u> Creation, in a coordinated manner, of a technical document with the necessary requirements for the creation of a common interface for the interconnection of the different SIPs that may be developed by public administrations for the processing of permits and applications from operators regarding the deployment of telecommunication networks. The aim is to achieve a real SIP, simulating the physical records of entry into the different public administrations, favouring the creation of an ecosystem in which an operator can carry out any procedure aimed at any administration through the "SIPs" of the public administrations that are connected to each other. Once the common interface is defined, it should be available to all public administrations in order to get functionally connected with the real SIP. The Central Administration will be required to have a functionally SIP that would integrate other SIPs via the aforementioned interface. This would simplify processes to telecom operators.
FI	Finnish transport and communications agency (Traficom) is responsible for organising the functions of the SIP. According to legislation, Traficom is allowed to outsource the functions of the SIP. The development as well as operating services of the SIP have been outsourced to a private consortium.
FR	Le seul point d'information unique en France est l'Ineris. L'Ineris a été choisi dans la mesure où il exerçait d'ores et déjà les fonctions de guichet unique pour toutes les questions relatives aux réseaux aériens, souterrains et subaquatiques. L'Ineris a une délégation de service public pour gérer une plateforme permettant, en tous points du territoire, d'identifier les exploitants de

	réseaux présents et de lister les déclarations de travaux faites pour une période donnée en un point, ou sur un territoire donné.
HR	Regarding **access to existing infrastructure** (Article 3), **coordination of civil works** (Article 5) and process **transparency** (Article 4 and 6), **State Geodetic Administration** (SGA) is appointed as a single information point (hereafter: SIP) on http://ski.dgu.hr. SGA is a state administrative organization that performs activities in the field of geodesy, cartography, cadastre and photogrammetry and takes care of the establishment of national spatial data on infrastructure and with high level of authorities and competences in the field it's natural choice for SGA to be SIP. Further, dispute settlement body (DSB) on issues regarding Article 3 is HAKOM, NRA in the field of electronic communications sector as best choice concerning disputes between or with ECN operators. Also, HAKOM acts as DSB in cases of disputes concerning Article 8 and 9 on **in-building infrastructure** for which SIP is not established. For **permit granting procedure** (Article 7) is responsible Ministry of Physical planning, Construction and State Assets which is also a SIP on the matter.
HU	SIP: Lechner Nonprofit Co. Ltd., as the operator of the E-Utility System.
IE	Under the Broadband Cost Reduction Regulations[41] (the BCRR), ComReg was designated as the body to perform the functions of the Single Information Point (SIP) in Ireland. Under the BCRR, ComReg is required to "*…facilitate access via a single information point to information regarding statutory permits for civil works and … the conditions and procedures applicable to granting a statutory permit.*" ComReg has published a SIP which provides information regarding any available sources of information on permits for civil works within the relevant competent authority. These are local authorities responsible for local permit granting. ComReg does not have responsibility for the granting of permits for civil works.

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	Elements of the SIP that relate to permit granting and civil works has proved challenging in the majority Member states due to the separation of functions between bodies responsible for ECNs, ECSs; non ECN physical infrastructure; and those responsible for civil works. With reference to the BEREC paper BoR (17) 245, 22 of 28 EU Member States had SIP responsibility, but no responsibility for permits. A recent WIK report notes that 3 Member States (CY, MT and LU) have linked permit granting to SIP. ComReg has noted that the practicality of coordinated permit granting decreases with increased geographic area.
IT	Italy has implemented the Directive 2014/61/EU of May 15, 2014 through the Legislative Decree no. 33/2016 and subsequently with the Ministerial Decree 11/05/2016 of the Ministry of Economic Development by establishing the Federal National Information System of Infrastructure, hereinafter "SINFI", subsequently supplemented by the Ministerial Decree of 2 September 2019 which defines the procedures to consult and access in the SINFI. The SINFI is managed by the MiSE which uses the in-house company Infratel Italia for the technical and operational activities and the coordination of all the recipients of the publication obligation. The SINFI publishes all useful information relating to the procedures for issuing authorisations for the installation of high-speed network infrastructures. It also provides to network operators who are interested in it and who submit an application electronically, information on: a) the location and the type of work; b) the network elements involved; c) contact point (Article no. 4 of decree no. 33/2016) The SINFI, as provided by the Italian legislator, aims to function as an aggregator at national level of the infrastructures present throughout the national territory. It is entrusted with the collection of data, their organization and their use. It is also provided with the possibility to create cadastres at regional level or to make those already in place interact with the national one. The SINFI is structured as a territorial information system and it can collect geo-referenced data from individual subjects, both private and public, holders of information on the infrastructure above and below ground. All the data collected are made available, through visualization services, to all the titular subjects who request them, including network operators, physical infrastructure managers and public administrations. In order not to create inconsistencies in the information and structure of the data collected within SINFI, the Agency for Digital Italy (AgID) has prepared the technical rules for the definition of the content specifications of Geotopographic databases and sub-services networks, hereinafter "Specifications". These describe the contents and mandatory requirements that must necessarily be implemented to ensure

	homogeneity on a national basis, as well as a set of optional information elements that constitute the specification itself. The SINFI data model represents a conceptual specification: it defines the organization, contents, geometric primitives, encodings, etc., without entering into the implementation modalities (data format, development environments, etc.) of data production and management. The SINFI data model has been produced using the GeoUML methodology tools, developed by the Interregional Center for Geographic and Statistical Information Systems (CISIS) in collaboration with the Politecnico di Milano and available in open-source mode. In order to ensure the consistency and effectiveness of the information contained in them, AgID, in agreement and in collaboration with SINFI, is responsible for updating the Specifications in line with the evidence that emerged during the work of SINFI and from the reports that it receives in the interlocutory phases with the subjects responsible for the population of SINFI itself. At Italian level, several updates of the Specification (now available in its latest version 3.1.2) have been issued. These have allowed it to keep up with the times and with the requests of those interested in populating it and using the information stored in SINFI. Among the significant aspects related to the concept of "federation" provided by Legislative Decree no. 33/2016 should be certainly noted the case of the Lombardy Region and its cadastre. At the time of the establishment of SINFI, in fact, the Region was already equipped with a cadastre within which it received all the information related to the underground networks, with the exception of infrastructure (intended as artifacts capable of hosting networks). The SINFI Specifications themselves are an evolution of those initially foreseen within the Region. Between 2018 and 2019, thanks to the collaboration between SINFI and the Lombardy Region, there has been a progressive alignment of the obligations in the data transmitted both at regional and national level, reaching the adoption of a single Specification, the SINFI, suitably integrated to cover the needs of the Region. The work of integration was necessary because the regional cadastre was born with the aim of collecting data on the networks present underground, in order to improve the management and governance of the territory by local authorities, providing them with a tool to monitor what is present and allow them to make programmatic works and targeted interventions. The work of connection has therefore moved in the direction of integrating the needs of the government of the territory with those of the development of high speed communication networks, introducing also for the regional cadastre the concept of "infrastructures", and providing for the collection of some fundamental information for the government of the territory also within the SINFI. At the beginning of 2020 the Lombardy Region has therefore abandoned its previous specifications in favour of national ones, aligning the data request both from a formal and technical point of view with the SINFI Specifications.
LT	RRT - a competent body (NRA) that performs the functions of a single information point (SIP) under Article 4 (transparency concerning physical infrastructure) and Article 6 (transparency concerning planned civil works) of the Broadband Cost Reduction Directive. The functions of SIP under Article 7 (permit-granting procedure) are performed by local municipalities (if permits are needed for excavation and fencing works or for building structures or buildings (constructing real estate objects).

	Future plans: Topography and Engineering Infrastructure Information System is being developed which will contain most of the data managed by RRT in the future.
LU	There is one national centralised SIP, which functions electronically.
LV	State and local building authorities are competent bodies to perform the functions of the single information point via the Construction Information System
MT	SIP is fully operational through a specific eletronic website RPS (Road Permit System) where different permit granting steps can be accesed from different authorities, and supported by day-to-day email correspondence by the Road Works Permit Section, within the Enforcement Directorate of Transport Malta. Other authorities can access such permits.
NL	The Netherlands has appointed one main competent body (The Netherlands' Cadastre, Land Registry and Mapping Agency – in short Kadaster) to perform the functions of the single information point in regard to the sharing of information with respect to the shared use of physical infrastructure and coordination of civil works. The Kadaster services an online information exchange portal for underground utilities called KLIC, which has been developed with the main purpose of preventing excavation-related damage to infrastructure. The portal covers locational information on utilities infrastructure (underground and above the ground) and relevant information (in vector format and pdf) and is accessible for all network operators. With the implementation of the BCRD changes have been made to the KLIC system. Via the system it is possible for telecom operators to do a request for information regarding shared use of physical infrastructure and coordination of civil works. The data on physical infrastructure and the contact details of the network operators is shared via the KLIC system and can be provided within 2 working days after the request. For the coordination of civil works, all relevant information is shared directly between parties within two weeks after the request. Specifically for the sharing of information regarding antenna-installations, telecom providers can make use of the so called Antenneregister, an online map showing all antenna installations in the Netherland. This register is managed and maintained by the Radiocommunications Agency. Telecom providers can request for the contact details of the owner of a specific antenna installation through the Radiocommunications Agency. Main considerations for the decision to appoint these aforementioned competent bodies, were alignment with existing processes and systems in order to reduce administrative burdens by the users of the systems. For the current practice of permit granting procedures, please refer to the answers to questions 2 and 9.
PL	The body responsible for the functioning of the single information point is the President of the Office of Electronic Communications. The division of competencies on the country level was considered, but it was considered that coordination of tasks would be too difficult.

PT	According to article 24 of DL123/2009, the NRA (ANACOM) was appointed responsible for the design, management and the maintenance, accessibility and availability of the the Portuguese implementation of SIP – the Suitable Infrastructure Information System (SIIA),42, which assures the provision of the following information: a) Procedures and conditions for the attribution of the rights of way; b) Announcements on the construction of suitable infrastructures; c) Records, containing georeferenced, full and integrated information of all the suitable infrastructures, held or managed by the entities to whom the law applies; d) Procedures and conditions applicable to the access and use of each of the infrastructures referred to in the previous, including the technical instructions when applicable. Specifically regarding the permit grantings, as explained before (see answers to questions 1 and 2) in Portugal is applicable the prior communication regime. In this sense, it is worth to mention other platform - the electronic platform foreseen in DL555/99 (see answer to question 5).
RO	According to Law no. 159/2016, network operators as well as public sector bodies which - in the exercise of their tasks - have any of the data regarding the location, route, type, and actual use of the physical infrastructure, as well as a contact point, in electronic format, shall make this information available to ANCOM not later than 1 January 2017. Using these information ANCOM created a software application available to the providers of public electronic communications networks, as a single information point for transparency concerning physical infrastructure.
SE	In Sweden there is one single information point (SIP). The SIP is governed by The Swedish Post and Telecom Authority (PTS), and is financed by PTS and two other government agencies, and is entirely free to use. All network operators and network owners have the obligation to make the minimum information available, however, they can choose between the SIP and other electronic means (e.g. own webpage). The SIP is made by combining two services. 1.) “Ledningskollen (LK)” which is the main part of the SIP and a well-functioning information service which was established in 2010 for sharing information on cables, pipelines and other underground infrastructure to reduce excavation damages and provide opportunities for digging coordination. LK was modified to fulfil SIP-requirement as stated in the Deployment Act. LK is a service provided for both infrastructure owners and for public use. It is a voluntary service and no obligation exists for the infrastructure owner to provide information to the SIP. 2.) “Utbyggnadsportalen” which is an information web portal and a new service with information about rights and obligations in the Deployment Act, information about permit-granting and other information services.
SI	The Single Information Point is assigned and divided between three competent authorities in Slovenia:

42 SIIA became operational in January 2016.

	– Article 4 (Physical Infrastructure Transparency): Surveying and Mapping Authority – Article 6, Par. 1 (Transparency in relation to planned works): AKOS (NRA) – Article 7 (Permit-granting procedure): Ministry of Public Administration Ministry of Public Administration acts as the Broadband Competence Office (BCO) and SIP regarding permit-granting procedure. For other information flow, there is good coordination between the Ministry and other SIPs (AKOS, Mapping and Surveying authority).
SK	The Regulatory Authority for Electronic Communications and Postal Services (**NRA** or **RU**) performs the function of a single information point, the task of which is to collect, process and store information on existing and planned infrastructure and makes this information available in electronic form free of charge to undertakings under reasonable, non-discriminatory and transparent conditions. Electronic Communications Act No. 351/2011 Coll. of Act determines the range of entities that are obliged to provide information on the existing and planned physical infrastructure to a single information point. **Information on the existing physical infrastructure** is provided by obliged entities. The obliged persons are: central state administration bodies, local state administration bodies, higher territorial units, municipalities. **Information on the planned physical infrastructure** is provided by network operators. The network operator is: undertaking person operating the physical infrastructure person who carries out the construction of a network or a network intended to provide other services or physical infrastructure. The obliged person shall provide any updated information and all new information to the single information point within two months from the date of its receipt; this period may be extended upon request from the obliged person by up to one month if necessary to ensure the reliability of the provided information. The obliged person shall put in such request to the single information point at least two weeks before the expiration of this period. The network operator is obliged to provide information to the single information point immediately once available in the format required by the single information point. The obliged person or the network operator that provides this information to the single information point is responsible for the accuracy and completeness of this information. Information from the single information point is provided exclusively to undertakings free of charge under proportionate, non-discriminatory and transparent conditions

	This measure establishes details concerning the manner and form of providing the information to a single information point from the central state administration bodies, local state administration bodies, higher territorial units and municipalities (hereinafter referred to as the "obliged person") and the network operator and details on making this information available to undertakings through the **Portal** of the single information point. As this technical solution is not implemented yet, the information is entered and made available in * .xls or * .xlsx format. The information is provided and made available via e-mail address. https://www.teleoff.gov.sk/jednotne-informacne-miesto-jim/ The following minimum information on the availability of the existing physical infrastructure are obligated persons obliged to provide: a) Basic technical parameters and identification of the type of physical infrastructure, b) Location of physical infrastructure defined by the municipality, cadastral territory and ground plot number, c) Data on the current use of physical infrastructure; and d) Contact details of the network operator in the extent of name, surname, delivery address, telephone number and email address. The network operator is obliged to provide with the following minimum information on ongoing or planned construction: a) Place and type of construction, b) Parts of the physical infrastructure which are the subject or part of the construction, c) Estimated date of commencement of construction and its duration, d) Contact details of the person authorized to coordinate the construction in the scope of name, surname, address for delivery, telephone contact and email address. SIP implementation across MS seems to be vary significantly as there is a wide discretion on MS. In some MS SIP could fail to deliver expected outcomes due to lack of legislation and/or insufficient sources.

***Question 12**: Please name identified best practices in your Member State at any level (central, regional, local), as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Extended functions of the single information point(s) to include, for example, georeferenced information (maps and digital models) and the integration of information from different sources (in particular information provided by competent national authorities at any level, public sector bodies and network operators).*	
Member State	National Best Practice
AT	The SIP collects digital data on existing infrastructure that is or can be used for telecommunication as well as on civil engineering projects of every kind that may offer the possibility to lay telecommunications infrastructure as part of the project (§ 13a TKG 2003). Network operators of the sectors telecommunication, water, energy and transport as well as public sector bodies need to provide data using a web application that is accessible via the website of RTR.
BE	<u>Regarding the platforms for the Walloon Region:</u> Reference is made to Géoportail WalonMap in relation with POWALCO platform. This portal contains geographical information and various maps. <u>Regarding the platforms for the Flanders Region KLIP/GIPOD:</u> Reference is made to Geoportal Geopunt (www.geopunt.be). This portal contains geographical information and various maps. KLIP and GIPOD are using the large scale base map as background map. The KLIP platform uses as background map the large scale base map of Flanders (GRB). This digital map gives information of buildings, detailed street infrastructure like poles, pylons, cabinets,… which can be used to deploy new broadband infrastructure. In combination with the cable information of KLIP/KLIM operators can access more easily all relevant terrain information on the infrastructure available in a certain area. The large scale base map of Flanders is open data.
BG	
CY	Physical infrastructures in electronic format: In the case of existing available infrastructures in electronic format, a mapping portal tool collects and provides available information to potential access seekers and/or access providers. Maps are provided via web services by the department of Lands and Surveys. For all other network providers that have not made available their infrastructure in electronic form, there are relevant contact points available on OCECPR's website
CZ	SIP doesn't have any advanced powers. More information about deploying of the electronic communications networks definitely help to increase effectiveness of deployment. However, SIP has no examples of best practices to share at this point.
DE	Currently, the Federal Network Agency, as the Single Information Point, is making available the Infrastructure Atlas for indicating options for the shared use of existing infrastructures (also for the preparation of shared-use applications in accordance with section 77d of the TKG). The Infrastructure Atlas is a geo-information system accessible via browser for existing infrastructures in Germany whose shared use for the purpose of the roll-out of broadband networks may be possible.

	The map-based information tool includes an area-related overview for planning purposes of facilities that can be used for telecommunications purposes, detailed information on the shared use of passive network infrastructures of public supply networks and information on construction works available to the Federal Network Agency. As mentioned above, after the entry into force of the recast Telecommunications Act (TKG), the Mobile Communications Infrastructure Company (MIG) will set up and operate a data portal (GIS Tool) that will integrate information from the fields of shareable infrastructures (including such for small cells), broadband roll-out, future network roll-out, construction sites and public sector properties. This will also build on existing information, such as information from the current Infrastructure Atlas of the Federal Network Agency, thus permitting the exploitation of synergies.
DK	*Our MS:* For information on the location of existing infrastructure etc., the Danish Agency for Data Supply and Effectivity (SDFE) assumes the role of SIP for underground cables and other types of underground infrastructure. SDFE maintains the Danish Register of Underground Cable Owners (LER), which covers not only cables but also other types of underground infrastructure. LER is based on "areas of interest" and ensures contact between existing infrastructure owners and digging contractors so they can exchange information in order to plan and conduct digging works so as to avoid digging damage. LER is regulated in a special law on LER and an administrative order issued pursuant to this law and is financed by user contributions. LER is a "registry of owners" containing information on which owners of cables, pipelines etc. hold infrastructure in a given area. Thus there is no geographically referenced data on the exact location of cables. LER facilitates the provision of information on existing infrastructure from infrastructure owners to digging contractors. The LER Act obliges owners of existing infrastructure to register with LER and provide information on their infrastructure to others upon query, and obliges digging contractors to run a query in LER prior to any digging works and plan the work in accordance with the information obtained in this way. LER has since the beginning of 2020 offered a feature in support of the joint use of physical infrastructure for multiple cables. This feature is optional for cable owners and is still in the very early stages of deployment. Therefore, this feature cannot give a full overview of passive physical infrastructure or excess capacity in passive physical infrastructure. This feature supports the Digging Act (see response to question 1). From 1 January 2020 additions to LER are put into use which, after a transition period of 3½ years, will mean that all cable information is sent to the enquiring party faster and in a unified, standardized digital format. This will be the basis of a major digital improvement in the field and enable significant socioeconomic gains in the shape of more efficient processes and thereby fewer cases of digging damage. As today, LER will still not contain geographical cable information etc., but facilitate the provision of cable information on existing infrastructure from owners to digging contractors. General geographic information (maps, data etc.) is available from the municipality, see the response to question 5. *Other MS:* According to SDFE's information, the KLIP system in Flanders and KLIK system in The Netherlands provide information services that

	are similar to the Danish LER system.
EE	-
EL	Georeferenced information is included on the Telecommunication Infrastructure Registry, established and operating in the Ministry of Digital Governance; the functionalities of the Registry are going to be extended, in line with the provisions of Art. 22 of the new Electronic Communications Code.
ES	There are no extended functions in the Spanish SIP. As a best practice, the SIP functions that will be implemented under the mandate of the Spanish Connectivity Plan 2021-2025 are described (this SIP will be implemented gradually in the upcoming years): BEST PRACTICE 18: <u>SIP georeferenced information on infrastructure, permits and investment:</u> The Spanish Connectivity Plan 2021-2025 foresees the creation of a full information point. This SIP would include: - Georeferenced information of public held physical infrastructure to which telecom operators may access when deploying networks. This work will be preceded by the creation of inventories. - Georeferenced information of Optical Fibre networks to which telecom operators could perform an access. In Spain big companies, including some with public participation such as "Red Eléctrica" (HV electricity transport) or ADIF (train infrastructure operator) hold big optical fibre networks and their use could avoid duplication of unnecessary works or deployments. This can be extended to other companies or public bodies. - More detailed georeferenced information of coverage levels, with economic data on potential investments. This economic data would also include information on ongoing tenders or public aids to be granted on different areas. - Detailed information on permits and other procedures to be gathered on a given region/municipality and technical assistance to manage all these administrative processes that are required by all public authorities. - Information and tools to guide future investors (guides, consulting studies, etc.) in their information gathering process.
FI	The SIP has been developed in close cooperation with the users of the service. The SIP offers scalable maps, which form a uniform geographical topographical basis for the localization of planned civil works and possible coordination requests during the construction of networks. The service offers versatile search and alert tools to coordinate civil works and to search parties to joint construction. For example, the service can be set to notify about new network deployment plans to all parties that have networks, network deployment plans or preliminary interest in the area. The use of the service has been growing steadily and at the moment there are about 5000 deployment plans in the service. This service consists of a service and allows information about civil works and network deployment plans to be entered, managed and queried

	in the SIP. Information about civil works can be exchanged between all actors with the platform. The SIP provides information about construction works also to the general public. The service is also accessible via REST interface. This service can be integrated with the operators' own network planning systems. Traficom is currently developing the single information point to include more detailed information of existing infrastructure. In addition to passive infrastructure, also information regarding e.g. cables is envisaged to be available via the SIP for excavation and planning purposes. For physical infrastructure there will be information on cable routes, wells, poles, masts and towers and equipment facilities. For active network elements, the service will include information on cables and pipes. In addition to the single information point provided by Traficom, there are also commercial services with very detailed information and advanced features. For example kaivuulupa.fi (by KeyPro Ltd) enables viewing the location data with your smartphone while in the field. Another service offered by Trimble Finland Ltd. includes AR functionalities making it possible to see the existing infrastructure overlaid on the terrain while moving around and making deployment plans in the field.
FR	Le guichet unique référence des exploitants à qui le demandeur doit s'adresser pour obtenir des plans. Le guichet unique ne référence pas les plans des réseaux mais invitent les demandeurs à s'adresser aux exploitants. Les exploitants de réseaux restent seuls responsables de la fourniture des plans de leurs réseaux les plus précis possibles.
HR	Please see picture in question 11. There is no extended functions implemented yet.
HU	○ Operation of E-Utility System affects a substantial customer base and is built on the own registers of public utility providers:(information from approximately 900 electricity, hydrocarbon, water supply, drainage, telecommunication and district heating network providers. Due to the applied Web Map Service (WMS) and Web Feature Service (WFS) technologies, these data are not stored in a central database but through web-based geospatial information services formed by public service providers. This can serve data requests of the e-utility system real time through online data links. Using these services, public utility networks are shown on map interface of the e-utility which is based on Open Street Map, but also incorporates basemap layers from the land registry and the National Orthophoto Database as well ○ Relevant and competent public utilities in a specific geographical area can thus be identified. The system is able to make public utility network vector data with attributes within planning softwares downloadable for planners and architects.
IE	No best practices in this respect have been identified. However, a suggested best practice would be for all network operators to adopt a similar methodology and template to record premises passed by their networks in order to allow for efficient and accurate analysis. This information could feed into a centralised database to record and track broadband availability nationally. Additionally, all operators should adopt the use of a postcode geo-referenced system in order to allow for the identification of individual premises. Many operators currently use this system, however the challenge going forward is to obtain this information for legacy copper-

	based networks in addition to VHCN networks.
IT	The SINFI plans to load inside it not only all the information on the underground but also some information on the aboveground, according to the various layers provided also by the INSPIRE Directive. These include information on: - Traffic, mobility and transport: roads and railways - Buildings and manufactories: buildings and artifacts - Traffic and address management: toponyms and house numbers; road administration - Horography: digital terrain models This information is derived from the regional geotopographic databases (DBGT), the basic tool that allows regional governments and local authorities to have the basic knowledge for spatial planning, thus having a unique basic data to compare. Within the SINFI are also preloaded the geometric information related to the land register (managed by the Revenue Agency) in addition to the administrative limits of regional, provincial and municipal level provided by the National Institute of Statistics (ISTAT). Following the requests of some SINFI's potential users, the information related to the electrical network has been entered in such a way to enable a distinction between the different kind of electrical infrastructures and their specific characteristics, in terms of services offered and potential dangerousness, in case of installation of telecommunications networks (different depending on the electrical voltages).
LT	SIP for physical infrastructure: information about existing physical infrastructure accessible on website www.e-infrastruktura.lt, it is available only to registered users. According to the Law on Electronic Communications, state or municipal institutions, state or municipal bodies, state or municipal enterprises, and public establishments the owner whereof or at least one of the owners is the State or municipality managing and/or handling information on the existing physical infrastructure, shall give access to RRT under the procedure laid down by the Government of the Republic of Lithuania to the information they manage and/or handle electronically on the existing physical infrastructure (type of infrastructure, place of installation, routing, filling, etc.); access to the updated information shall be given to RRT not later than within two months from the date of receipt of the new information indicated in this clause in a state or municipal institution, body, enterprise, and public establishment; this time-limit may be extended for a period not longer than one month, if this is necessary for ensuring reliability of the information furnished. SIP for planned civil works: infrastructure managers who intend to carry out installation works of the electronic communications infrastructure and/or physical infrastructure, intended for the provision of production, supply, distribution, and/or transport services that are

	fully or partially funded by resources of the State, municipality, or the European Union structural funds shall provide not later than two months before applying to competent institutions for obtaining the necessary permits to perform the installation works (if such permits are not necessary, before the start of installation works) to RRT a notification of the form established in Annex 2 to the Rules for Installation, Marking, Supervision and Use of Electronic Communications Infrastructure on the intended beginning of the installation works and possibilities of installing electronic communications infrastructure at the time of carrying out installation works by owners of infrastructure. RRT shall publish the notification received from the owner of infrastructure on its website no later than within 5 working days from its receipt at RRT Office. SIP for excavation, fencing and construction of engineering structures or buildings (real estate objects): information about permits needed for excavation and fencing is accessible on Municipalities websites, e.g. https://paslaugos.vilnius.lt/service-list/Leidimu-kasineti-ir-aptverti-isdavimas, or by phone, or in person. According to the Law of on the Right to Information from State and Municipal Institutions and Bodies, this information is available to anyone. Regarding the information about permits for construction, it is accessible, and permits are issued via the information system "Information gates for construction" on the website http://infostatyba.lt/ and also in local municipalities. This information is accessible to anyone.
LU	Access to georeferenced information (maps)
LV	N.a. at the moment, will be introduced in couple years.
MT	Transport Malta implemented a GIS platform not only for the use of the public and project partners, but most imperative for the internal use across Transport Malta directorates. The GIS Platform supports the backbone infrastructure required to facilitate and streamline processes, integrate isolated datasets used by the different target groups. By consolidating operations within the directorates and facilitate transportation planning decisions by providing one common source to integrate and visualise air and sea transport, this results in strengthened harmonisation required between the directorates. The platform allow an authority-wide access to GIS data based on authorised content, whereby each directorate can visualise the data they own superimposed on vector or raster basemaps. Initially, Transport Malta focused on the development of the public portal. Subsequent deployments of the other services followed where each directorate is equipped with a service using specific tools related to the business process and datasets. Interfaces features a group specific service for the provisioning of related specific data and tools required. A Service Oriented Architecture ensures that the platform supports standards that promote enterprise wide availability of GIS services. Exposing such web services ensures interoperability between the GIS based systems. Also, the interoperability to other current solutions implemented at Transport Malta was highly neccessary and still evolving. Such interoperability is with the Road Permitting System for any Road or Partial Road Closures. A webservice between the Road Permitting System and the GIS Platform maintains a live link of such issued permits showing the centroid of the Street visualising the Road Closures or Partial Road Closures.
NL	The information on utilities infrastructure, which is included in the KLIC portal, includes standardised geo-information in xml format. The information is based on the IMKL information model (information model cables and pipeline), based on the INSPIRE US model. The geo-information is available in standardised XML conform the IMKL specs. For more info about the model:

	https://www.geonovum.nl/geo-standaarden/informatiemodel-kabels-en-leidingen#standaard The geo-information of the cable and pipelines is combined with the standardised basemap Base Registry Large Scale Topography (BGT) also serviced by the Kadaster. This basemap is in combination with the KLIC data available in PNG; and as open data available in multiple formats/services (e.g. GML, WMS, WMTS). For more info about the BGT: https://www.pdok.nl/introductie/-/article/basisregistratie-grootschalige-topografie-bgt-
PL	The case is dealt with by the Surveyor General of Poland reporting to the Department of Architecture, Construction and Housing. In the field of spatial planning, it should be noted that a solution has been adopted obliging to define the boundaries of the adopted local plan electronically and to georefer the content of the local plan in a raster form. The plans will be visible within the existing spatial information infrastructure. The solution is comparable with the known solutions in the EU countries. The contracted extension of the single information point system will allow for the implementation of the process of mapping the telecommunications infrastructure, network coverage and provided telecommunications services. The acquisition of information on the actual cable network mileage will help operators to plan their networks and enable better validation of physical infrastructure data. An additional benefit will be the collection of data on points of possible co-location of telecommunications infrastructure and places where it is possible to connect to the infrastructure of another operator. At the same time, the system will become a single point for the transmission of spatial reference data, which operators are required to transmit, reducing the inconvenience of data reporting.
PT	The SIIA is a based Geographic Information system (GIS) platform that provides full and integrated georeferenced information (maps) of all the suitable infrastructures suitable, held or managed by the different sources (which, among others, include local authorities, public sector bodies and network operators). Following the publication of Decree-Law no. 92/2017 (which concluded the transposition of the BCRD), ANACOM approved the updating of the list of registration objects and their characteristics, to be made available - see ANACOM decision of 14.11.2018 on updating the list of SIIA cadastral objects and their characterization elements43. • Best practices identified in other MS or non-EU countries Regarding the practices identified in other MS, the 2018 WIK Report "Study on Implementation and monitoring of measures under BCRD and the 2017 BEREC report on implementation of the BCRD, BoR (17) 245, analyse the matter of SIP.
RO	ANCOM is working on the inventory of the physical electronic communications infrastructure, based on the provisions of Law no. 159/2016

43 This decision is available at: https://www.anacom.pt/render.jsp?contentId=1465127&languageId=1.

	regarding the regime of physical infrastructure of electronic communications networks, as well as for establishing measures to reduce the cost of installing electronic communications networks. The data collection process is in progress. After the completion of a first iteration (2022), ANCOM will analyse the possibility of publishing / sharing them.
SE	In the Swedish implementation no data regarding infrastructure is stored in the SIP. Instead it operates by areas of interest. An entity makes a request and states its area of interest. These areas of interest are then sent to the infrastructure owner and are matched against actual infrastructure at the infrastructure owner. Once the infrastructure owner get a match, they send the information to the entity that requested the information. LK gets its geographical information from a supplier which in turn gets the information from Lantmäteriet. Lantmäteriet is an authority belonging to the Ministry of Finance. It is responsible for the real estate division in Sweden and provide the society, the public sector, business and private individuals with information on geography and real estate. This data is also modelled in LK in order to select and view "Areas of Interest (AOI)" for the underground infrastructure owners. At the top of the AOI, there is a selectable layer of additional integration to other possible sources of information. In LK the name is "Ledningskollen Extended Geographical System" (LEGS) which extends the functionality of LK with additional data. The current implementation is experimental and includes data from the Swedish National Heritage Board, which is Sweden's central administrative agency in the area of cultural heritage. This is an ongoing project with continuous development. In order to promote wide adoption of the service LK is also offering 3rd parties to develop and integrate their systems into LK. External systems can be integrated to retrieve and send messages both as a professional organisation and as a private citizen. LK offers a test environment for those organizations that want to integrate their systems with LK during their development. LK operates a bit differently from most other SIP systems. LK does not collect information about the exact location of cables and pipes for reasons of security and confidentiality, instead it uses AOI. LK can only answer questions about the infrastructure of those participants supporting the service. The more parties supporting the service, the more extensive its positive effects in the form of less underground infrastructure being damaged and greater coordination opportunities.
SI	In Slovenia, many additional information concerning the existing physical infrastructure are collected: ducts (owner and size of a single duct), cables, location is given by geo-coordinates (high positional accuracy), dimension of (horizontal and vertical) of routes and other objects (routes, antenna tower, shafts, etc.), information on route position (air, underground, in the duct). We use exact location given by coordinates for: - Identification of physical infrastructure in the nature, especially of underground infrastructure. - Spatial analysis on ECN and external data (land ownership, spatial planning acts, building information, land use, topographic data, address database, etc.). - Digital modelling.

SK	All types of information (geo-referencing, capacity and digital representation) should be identified as minimum requirement. Single information point has no GIS based tool for collecting, processing and storing data on physical infrastructure, because of the financially insufficient budget of NRA on the implementation of CRD provisions. The information on existing infrastructure and planned physical infrastructure is entered and made available in * .xls or * .xlsx format. We have no relevant practices with integration of information from different sources.

***Question 13**: Please name identified best practices in your Member State at any level (central, regional, local), as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Mechanisms to ensure that information referred to in Article 4 para. 1 of the BCRD, when held by public sector bodies, is made available via the single information point in electronic format.*	
Member State	National Best Practice
AT	According to the Austrian TKG, companies and organs of the federal government, the federal states, the municipalities and the municipal associations as well as other self-governing bodies that operate physical infrastructure that can be used for telecommunications are obliged to report data. The obligation covers the sectors: petroleum / gas, electricity (including public lighting), district heating, water (including wastewater treatment and disposal and sewerage systems) as well as transport services (including rails, roads, ports and airports) or cable car infrastructure. While several sectors are obliged to make their data available to the SIP, currently only telecommunications network operators who have general authorization from the RTR are allowed to request information on infrastructure data. However, every operator providing data has the possibility to request information on civil engineering projects planned by other operators or public sector bodies. In order to be able to request any information network operators first need to provide a letter of authorization for their employees or service providers to the RTR. Users then login the web application via RTR's website in order to request information on infrastructure or infrastructure projects. Information provided answering these requests include location or route of the infrastructure as well as type (e.g. fibre) and current use of the infrastructure. In order to allow for a cooperation between operators contact information is given as well.
BE	Article 4.2 of the BCRD has not been transposed as such in federal law but there were already existing federal provisions that obliged the concerned operators to share this kind of information on the single information point KLIM-CICC.
BG	
CY	See answer 12.
CZ	SIP has not information referred to in Article 4 para. 1 of the BCRD automatically. Public sector bodies, holding such information, have no obligation to provide information and keep it up to date. SIP asks public sector bodies for information only in connection with the request of authorized person (an undertaking providing or authorised to provide public communications networks). Upon request, public sector bodies provide minimum information concerning the existing physical infrastructure to SIP only if they have the information in electronic form. The authorized person must submit a request for minimum information concerning physical infrastructures to the SIP first. If SIP cannot provide complete minimum information, the authorized person may claim information from obliged person (a network operator in accordance with Article 2(1) BCRD). Therefore, SIP provides the obtained data in the most informal way possible within the law to make the process fast, so the authorized person can complete the missing data as soon as possible.
DE	Currently, owners and operators of public supply networks (both public and private sector bodies) are required to provide data for the Infrastructure Atlas by the Federal Network Agency on the basis of section 77a(2) of the Telecommunications Act (TKG). The provision of detailed information for the shared use of passive network infrastructures of public supply networks via the Infrastructure Atlas by data suppliers is based on the statutory provisions in section 77b of the Telecommunications Act (TKG). With the entry into force of

	the recast Telecommunications Act (TKG), the aforementioned obligations of owners and operators of public supply networks regarding the provision of information on shareable infrastructures remain in effect. In addition, the bill provides that the Single Information Point may, moreover, require owners and operators of public telecommunications networks and telecommunications lines to provide the information concerning broadband roll-out and the future network roll-out required for the aforementioned GIS Tool (there is no such obligation in the current TKG).
DK	Public sector bodies fall within the scope of the LER Act (see answers to 11 and 12) and will have to register with LER and make their information available to digging contractors upon a relevant query in LER.
EE	It is done through Register of Buildings
EL	see answer to Question 11
ES	The main problem with this information is that a number of public sector bodies (in particular municipalities) don't have an inventory containing the information of their infrastructures. It is quite common to find municipalities that don't have a full knowledge of what they have. On the other hand, some public administrations are offering information on infrastructure through a web portal or a SIP that they manage. It is therefore very important to create the common interface described in the best practice xxx of this document in order to be able to transmit all this information to the "real SIP". Some best practices are proposed. BEST PRACTICE 19: <u>Unified inventory of public physical infrastructure (Junta de Andalucía)</u> Andalusia Government has developed a web application where information of public physical infrastructure is shown in a unified way. This would allow electronic communication operators to consult such infrastructures and require accesses when interested. This web application collects information of all Andalusian municipalities or other Andalusian public entities. In order to ensure that public entities deliver information to this SIP, Andalusia Government has also launched a series of courses and information tools aimed at municipalities (in line with BP XXX of this document), so they are familiar with the procedures for information providing and conscious about the need or transmitting them in timely manner. More information:

https://www.youtube.com/watch?v=aUlZ3dV6NbI

Service currently provided through the Teleco Consultation portal:
https://www.consultateleco.es/login

By having all this data in this inventory, it is easy to transmit to a more general SIP.

BEST PRACTICE 20:

Single Information Point in Barcelona: ACEFAT eGIOS:

ACEFAT eGios is a Geographical Information System that facilitates a unified point for permits request and the interaction and communication with the different actors in the process.

Some of the most important features of the eGios platform are:

Visualization and management of the most significant layouts of work requests
Analysis and detection of possible effects on other infrastructure, networks or works.
Detection of possible coordination in space and time between works of different promoters.

The eGios platform is aimed at the promoters of civil works but also to municipalities that grant permits. Also, other entities, such as: 22@, Agència del Carmel, Barcelona Sagrera Alta velocitat, TMB, FGC, Guàrdia Urbana de Barcelona, etc., contribute with their experience in territorial management/planning in the land occupation file that is generated by issuing reports or recommendations.

With a tool of this kind, information on physical infrastructures can be easily transferred to a “real” Single Information Point.

BEST PRACTICE 21:

Generalitat de Catalunya Single Information Point

Generalitat de Catalunya is working on a Single Access Point with a double objective:

1. to publish the infrastructures of the Generalitat
2. to facilitate access to those infrastructures and electronically process their requests

	Public telecommunication infrastructures (radio towers, ducts and manholes) are published on a map to make it easier to locate them. In the case of the radio towers, it is indicated if the manager is Cellnex or the Generalitat itself (some of them have been granted to Cellnex). Please see website (https://politiquesdigitals.gencat.cat/ca/tic/piu/) Links to the electronic procedures to access to these infrastructures (ducts and manholes; space in radiocommunication booths and towers; or dark fiber rental) are shown below the map. The procedure is 100% electronic, although there are still some forms to download and resend. The tools for a 100% electronic procedure will be soon incorporated. We believe that this experience covers two of the main objectives of the recommendation: 1) Publish the existing public infrastructure 2) To allow the electronic processing of use or occupation by telecommunication operators. Currently, infrastructure of the Generalitat de Catalunya and those owned by the Consell Comarcal del Maresme (a local entity for whom we also carry out this management through a joint agreement) are included,. Despite being in an initial stage the tool is operational and it is expected that along with the deployment being carried out, this opportunity can be offered to other local authorities and that the content of the web increases with other local infrastructures. Other similar practices in other municipalities/local entities have been received via the FEMP-RECI-DIGITALES group (Consell Insular de Menroca, Pozuelo de Alarcón, Villanueva de la Serena), with a different degree of implementation or with a wider/narrower scope.
FI	-
FR	L'information est disponible en ligne 24h/24 et 7j/7.
HR	System is not fully operational due to a lack of data from constructors.
HU	As shown in the previous point.
IE	In Ireland, Public Sector bodies are not obliged to provide information to the Single Information Point.
IT	As described in the Ministerial Decree 11/05/2016, among the subjects in charge of the population of the SINFI there are also all public administrations in case they are the direct managers of the infrastructure. Like what happens with private subjects, therefore, also the public ones are called to provide information on their infrastructures. The public information collected is treated within the SINFI in the same way as private information and is therefore visible to interested parties who request it. The information collected in this way within SINFI constitute the information base that counts the operator who is interested in laying high-speed telecommunications networks, of the pre-existence of reusable infrastructures for this purpose, public or private.

	However, many local authorities have not yet completed their digitisation process. In many cases, in fact, local authorities are not aware of the actual state of their infrastructure because they are poorly or sometimes entirely lacking in information which are considered to be essential. Therefore, the Italian Government has recently decided to financially support small municipalities which need to implement the digitisation of their maps and to proceed with field surveys for infrastructure and networks, not yet included in the maps. For their part, the financed supported municipalities have to commit to process data according to the Sinfi's technical specifications and to promptly upload and make them available to the telecommunication operators through the SINFI.
LT	Information about existing physical infrastructure accessible is available electronically on RRT website www.e-infrastruktura.lt.
LU	Connection between the SIP and the Open Data Portal
LV	All information exchange is held in the Construction In-formation System
MT	Information referred to in Article 4 para. 1 of the BCRD is mostly information kept at the operators end. Since Malta is a small Member State, we only have 3 major telecommunications operators and when we need data under Article 4, a direct request is made to the operators via a contact point and the operator provides data to the SIP upon request .
NL	With a KLIC request a telecom provider gets a set of information as mentioned in art 4, para 1 of the BCRD: 1) Location and route of the specific infrastructure, including information on ownership (digital geo-information) 2) Type and current use of the of the infrastructure, e.g. type of pipeline and if it is operational (part of the metadata of the geo-information) 3) A pdf with contact details of al network operators in the requested area. For an example on the working of and data in the KLIC portal: https://service10.acceptatie.kadaster.nl/klic-viewer/uitlevering/fe8d1c20-bd94-447d-939f-f2c5d53b904a
PL	The information is open to network operators. Each network operator can access this data after logging into the information point system.
PT	The entities to whom DL123/2009 applies (which already include public sector bodies) have to ensure the availability, in SIIA, of all the informations mentioned in the answer of question 11, assuring its quality, reliability, timeliness and permanent update. Whenever requested by the NRA (ANACOM), such entities must provide with all the necessary clarifications and elements with a view to their entry in the SIIA. The information at any moment available in SIIA binds the entities responsible for its preparation. Non-observance of the above obligations constitute administrative offences and penalties are applicable.

	• Best practices identified in other MS or non-EU countries Regarding the practices identified in other MS, the 2018 WIK Report "Study on Implementation and monitoring of measures under BCRD and the 2017 BEREC report on implementation of the BCRD, BoR (17) 245, analyse the matter of SIP.
RO	According to Law no. 159/2016, network operators as well as public sector bodies which - in the exercise of their tasks - have any of the data provided in Article 4 paragraph1 of the BCRD, in electronic format, shall make this information available to ANCOM.Using the information collected, ANCOM created and make available to the providers of public electronic communications networks, via a software application available on a website, a single information point.
SE	LK is the designated system to ensure that information referred to in Article 4 para. 1 of the BCRD held by public sector bodies, is made available. However other electronic means as own webpage can also be used. A legal investigation has been executed to make sure the SIP meets the demands according to Article 4 para. 1 of the BCRD.
SI	The Surveying and Mapping Authority of Republic of Slovenia (SIP for Art. 4) is running the consolidated cadastre of public infrastructure, which also includes the detailed data about electronic communication infrastructure such as ducts, cables, lines and their capacity and availability. All the mentioned data is publicly available. *According to Slovene ECA, each network operator (not only the public entities) must report information on the location and route, type and current use of the communication network and associated infrastructure, including the number of individual associated lines (optical fiber, copper pair, coaxial line, other).*
SK	As SIP´s main role is to contribute to the transparency of information, effective tools (legislative and technological) have to be in place, e.g. in situation when public bodies does not have relevant information or the information are too fragmented or it is not possible to re-use them, the obligation to provide information to SIP shall be **with network operators**. Public as well as private sector information seems to be important for proper functioning of SIP. The data gathering regarding the information on existing physical information will be still not effectively applicable, if the obligation to provide information will stay on public bodies.

***Question 14**: Please name identified best practices in your Member State at any level (central, regional, local), as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Availability of information through the single information point concerning physical infrastructure beyond the minimum specified in the BCRD, such as the georeferenced location of the infrastructure, its digital model, its type and current use or its total and spare capacity.*	
Member State	National Best Practice
AT	In Austria, the SIP provides the minimum information specified in the BRCD, the type of infrastructure and optional further contact information for regional access to infrastructure or civil engineering projects.
BE	Information in platforms is digital and georeferenced. E.g., in KLIP, location and properties of underground cables and pipes can be viewed in a KLIP viewer, and if desired, data can be downloaded in xml format.
BG	
CY	See answer 12
CZ	The authorized person (an undertaking providing or authorised to provide public communications networks) can request the minimum information concerning physical infrastructures which include location and route, type and current use of the infrastructure; and a contact point in accordance with Article 4 (1) of the BCRD. The authorized person also has right to information about technical parameters and geometric, height and positional determination of physical infrastructure according to the Act no. 194/2017 Coll. SIP provides the minimum information concerning physical infrastructures at authorized person's request. However, SIP usually doesn't have complete minimum information concerning physical infrastructures (see question 13). Therefore, the authorized person usually receives only a part of the minimum information concerning physical infrastructures. The authorized person can apply for additional data to the obliged person (a network operator in accordance with Article 2(1) BCRD) then.
DE	In addition to the passive infrastructures mentioned in Article 4(1) of the BCRD, the current Infrastructure Atlas, as an instrument to indicate possibilities for the shared use of existing infrastructures and to prepare shared-use applications, also contains data on active network components, such as fibre optic cables and fixed services links. The Infrastructure Atlas, moreover, provides its users with information on planned and ongoing construction works as well as on areas that can potentially be used for the roll-out of electronic high-speed networks. Beyond the minimum information required in accordance with the BCRD, information on the following characteristics is maintained in the Infrastructure Atlas and made available via WebGIS: • Geo-referenced geometry data modelled as points, lines or areas; • information on locational accuracy; • information on the timeliness of data; • industry affiliation of the infrastructures; • information on the possibility of an installation using public funding for broadband roll-out;

	• contact details of the person designated in relation to the shared use of infrastructures (email address and phone number).
DK	LER has since the beginning of 2020 offered a feature in support of the joint use of physical infrastructure for multiple cables. This feature is optional for cable owners and is still in the very early stages of deployment. Therefore, this feature cannot give a full overview of passive physical infrastructure or excess capacity in passive physical infrastructure. This feature supports the Digging Act (see response to question 1).
EE	It is done through Register of Buildings
EL	This kind of information, as submitted by the owners of the infrastructures, is included in the Telecommunication Infrastructure Registry established and operating in the Ministry of Digital Governance.
ES	BEST PRACTICE 22: <u>Spain's SIP – Coordination of civil works information</u> The current SIP in Spain is ready to store information on planned physical infrastructure for the coordination of civil works. In this regard, the stored information is as follows: 1. Location and layout: it is defined as a starting point, an end point and a series of intermediate points, all expressed in the coordinates of the system established in Royal Decree 1071/2007 of 27 July, which regulates the geodesic system of official reference in Spain (ETRS 89 System). The layout is given in an approximated manner via SIP and will be refined after having contacted the network operator planning to execute the civil work: a) Developed land: the coordinates must be provided for the starting point and end point of the infrastructure, as well as for each of the vertices that it presents, understanding as such, those points where the infrastructure presents a change of direction with respect to the previous section of it. b) Rural land: the coordinates must be given for the starting point of the infrastructure, the end point and intermediate points at least every kilometer.

	2: Type and use of infrastructure: this field refers to the service to be covered by the construction of the physical infrastructure capable of hosting electronic communications networks. 3. Physical infrastructure elements involved: this field should specify which civil works elements are planned to be installed. This should indicate the presence of pipes, towers, poles, masts, antenna installations, ducts, boxes, chambers, manholes, cabinets, and any associated resources that can accommodate electronic communications networks. 4. Dates: a forecast of the start and end date on which the work will be executed must be provided. Information shall also be provided on the date on which the first application for a permit, license or documentation replacing it will be submitted to the competent authorities. 5. Point of contact: at least a telephone number and an e-mail address shall be provided to enable an operator installing or operating public electronic communications networks to establish contact with the responsible for the physical infrastructure described by the minimum information. This information is stored in a very scalable way, in order to be usable for new SIP versions. Up to date, the information is not shown on a mapping visual tool. A file with coordinates and other details is provided instead (it could be visualized in their own systems).
FI	-
FR	Voir question 12 : Le guichet unique fait un travail de référence des exploitants à qui le demandeur doit s'adresser pour obtenir des plans de réseaux. Le guichet unique ne référence pas lui-même les plans des réseaux, il est un point de contact.
HR	It is not established yet.
HU	As shown in point 12.
IE	No best practices have been identified in Ireland for information further to the minimum requirement outlined in the BCRD of the Single Information Point (SIP). However, an inter-departmental Government working group has been established with the remit to map digital hubs across the country, and it is anticipated that a composite picture in respect of same will be available by end Q1 next year.
IT	Data catalogued in the SINFI according to the Specifications, include both underground and aboveground elements. The data follow a tree logic: each layer defines its themes, which identify its own classes, which are composed of several attributions. Layer 07 - "Subservice Networks" includes the following themes: - Management of housing infrastructure networks - Water supply network - Water disposal network

	- Electricity network - Gas network - District heating network - Pipelines - Telecommunication networks. Specifically, by analysing one of these themes, we can find the following: the theme 0700 - network housing infrastructure management includes within it only the class network housing infrastructure (070001) consisting of "buildings with a prevalent longitudinal development of adequate size to accommodate one or more networks, i.e. pipelines, cables, main and ancillary works suitable for the provision of a public service". This type of infrastructure includes: conduits, technological tunnels, multi-purpose tunnels, manholes, pylons, poles, etc.. All reusable works for the installation of high-speed telecommunications networks. For the class Network Housing Infrastructure, for example, the operator provides the following georeferenced geometric information to SINFI: - Collapsed line geometry (ARCZ) - Collapsed point geometry (MULTIPOINTZ) - Areal geometry (POLYGONZ) The geometric information, and in particular each element contained in it, is accompanied by the following information (attributes): - Start date of data validity - Date of end of validity of the data - The source of the data - VAT number or tax code of the owner or dealer - The state of the infrastructure (if in operation, under construction, planned, etc.). - The usability of the infrastructure (if usable, complete, with security constraints, etc.). - The scale at which the data has been represented - The type of infrastructure (cable duct, manhole, poles, etc.). - The type of network housed (Water, electrical, telecommunications, etc.). The physical structures of the classes represent dbf files or shape files and to distinguish them it is sufficient to verify within the Specification the presence or absence of a geometric attribute and their representation is done according to the classic types of graph nets, although the topological node-track-node constraint typical of such networks is not always mandatory.
LT	Maps from topographical data with the location of the infrastructure (mainly ducts) are available on RRT website www.e-infrastruktura.lt (provides links to municipalities databases which are used for the generation of maps). Other availability of georeferenced location of the infrastructure and other information will be implemented in the Topography and Engineering Infrastructure Information System.

LU	information can be accessed electronically
LV	-
MT	The Dispute Resolution Board set out in the Utilities and Services Act (Chapter 81) of the Laws of Malta is designated as the body to perform the functions of national dispute settlement body in Malta for articles 3-6 as per regulations 14-17 respectively.
NL	There is a lot of digital information available in the KLIC portal, which is described in public documentation on the information model (IMKL), which also includes a presentation/visualisation model (PMKL). The digital information includes info on the georeferenced location of the infrastructure, its digital model, its type and current use. For more info about the information model (IMKL): https://www.geonovum.nl/geo-standaarden/informatiemodel-kabels-en-leidingen#standaard For more info about the standardised presentation model (PMKL): https://docs.geostandaarden.nl/kl/IMKLversie2.0.0/PMKL-Handreiking-visualisatie-2.0.pdf
PL	For practical reasons it is not possible to collect more detailed data about networks. There are many entities on the market, some of which do not collect detailed information about the infrastructure, so we do not have access to such data. We also do not plan any additional data collection.
PT	SIIA already provides for georeferenced location (geographic coordinates) of the physical infrastructures and for the digital representation of the infrastructures based on cadastre objects (which correspond to each type of physical infrastructures). “Type and current “use of infrastructures are provided in SIIA. Regarding the “total and spare capacity” of infrastructures to host the networks (cables), SIIA provides for the “state of occupation”44 field, as a characterization element of the infrastructure record, which could allow for an assessment of the current state of its capacity, concerning the occupied and the available part. Nevertheless, the filling by the network operators of this “state of occupation” field of the SIIA infrastructure object is not mandatory (it is optional)45. • Best practices identified in other MS or non-EU countries

44 For more information, please consult the ANACOM´s decision updating the list of registration objects and their characteristics, to be made available in SIIA at https://www.anacom.pt/render.jsp?contentId=1465127&languageId=1.

45 The obligation to provide indicative information on the availability of infrastructures only exists regarding ducts of the ECN operator identified with SMP in wholesale market 3a- See reference offer of access to ducts (RCAO, in Portuguese ORAC) of MEO and BD ORAC.

	Regarding the practices identified in other MS, the 2018 WIK Report "Study on Implementation and monitoring of measures under BCRD and the 2017 BEREC report on implementation of the BCRD, BoR (17) 245, analyse the matter of SIP.
RO	See the answer to question no. 12.
SE	Please see answer to question 12.
SI	AKOS published Geoportal, an open source mapping system, with digital representation of the physical infrastructure and other ECN related data. Geoportal allows public access to utility and telecommunication infrastructure data (location, type, availability, capacity) and network termination point. The main purpose of AKOS Geoportal is to reduce the costs of building VHC networks and to encourage the shared use of infrastructure. Geoportal is public and available on: https://gis.akos-rs.si.
SK	All types of information (geo-referencing, capacity and digital representation) should be identified as minimum requirement. Single information point has no GIS based tool for collecting, processing and storing data on physical infrastructure, because of the financially insufficient budget of the regulatory authority on the implementation of CRD provisions. Office of the Deputy Prime Minister of the Slovak Republic for Investments and Informatization (from spring 2020 Ministry of Investments, Regional Development and Informatization of the Slovak Republic) published a call for the national project "Atlas of Passive Infrastructure" of the Ministry of Environment of the Slovak Republic with the allocation of € 18.2 million in August 2019. It should collect information on the existing physical infrastructure of telecommunications, gas, sewerage and electricity networks as well as information on the planned infrastructure. The system should include data from approximately 2 000 network operators. The Ministry of Environment of the Slovak Republic is implementing the national project "Atlas of Passive Infrastructure" under the „Operational Program Integrated Infrastructure, Specific Objective 7.1 increasing the coverage of broadband Internet / NGN". In addition to the main project partner – Ministry of Environment, NRA is a secondary project partner. Atlas should be interconnected with the information system of the Geodesy, Cartography and Cadaster Authority of the Slovak Republic, but also with the geographic systems using geographic data on physical infrastructure and it will be built on the international standard INSPIRE. Full version of the Call: https://www.partnerskadohoda.gov.sk/upvii-uverejnil-vyzvu-na-projekt-atlas-pasivnej-infrastruktury/ Project status to date (November 2020) - Valid Decision on approval of the Application for a non-repayable financial contribution has been issued.

***Question 15**: Please name identified best practices in your Member State at any level (central, regional, local), as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Requirement to network operators to make available via the single information point, and in electronic format, the information concerning their existing physical infrastructure which they have made available to other operators upon specific request.*	
Member State	National Best Practice
AT	The datatypes of the electronic format and coordinate systems accepted by the SIP and the format in which the data is provided are specified in an ordinance by RTR (please see https://www.rtr.at/de/tk/ZIS-V_2019).
BE	All information is shared in electronic format via KLIP or KLIM/CICC. Requests for information are handled with these platforms.
BG	
CY	See answer 12
CZ	Network operators have no obligation to make available the information concerning their existing physical infrastructure via SIP. Operators may provide the information voluntarily to SIP. But the possibility to make available the information via SIP is described in the Act no. 194/2017 Coll. vaguely, so they do not use this option.
DE	The owners or operators of public supply networks obligated by the Federal Network Agency, as the Single Information Point, must generally provide all the data relevant for the provision of information in the Infrastructure Atlas. Here, it is irrelevant whether they use the infrastructures themselves or whether third parties (co-)use the infrastructures. Apart from information on shareable infrastructures, the GIS Tool laid down in law by means of the recast of the TKG will also include information on the fields of broadband roll-out, future network roll-out, construction sites and public sector properties. In this regard, the bill provides that the Single Information Point may in the future also require owners and operators of public telecommunications networks and telecommunications lines to provide the information concerning broadband roll-out and the future network roll-out required for the aforementioned GIS Tool.
DK	See response to question 12.
EE	It is done through Register of Buildings
EL	See answer to Question 14.
ES	Transposition of BBCost Directive is made by Royal Decree 330/2016 and some secondary legislation that enables SIP. In this regard, Minsterial Order ECE/529/2019 puts into operation the Single Information Point established in Royal Decree 330/2016. This ministerial order obliges network operators to make available via SIP info on foreseen civil works: BEST PRACTICE 23: <u>Information of foreseen civil works to promote coordination</u>

	Minsterial Order ECE/529/2019 obliges network operators or public administrations to submit, via SIP, minimum information on planned or ongoing civil works, when they receive a request from an electronic communications operator. The first ones will provide such minimum information through a space specifically set aside for this purpose within the Spanish Single Information Point. The URL for this space is this one: https://sedeaplicaciones.minetur.gob.es/piu/ZonaUsuarios.aspx The minimum information must be provided by the obliged parties, or their duly accredited representatives, in accordance with the format described in answer 14 of this document. Coordinates may be introduced manually or via a CSV / excel file, once this network operators receive a request for such information.
FI	-
FR	Voir question 12 : Le guichet unique fait un travail de référence des exploitants à qui le demandeur doit s'adresser pour obtenir des plans de réseaux. Le guichet unique ne référence pas lui-même les plans des réseaux, il est un point de contact.
HR	It is not established yet.
HU	The requirements are laid down in a Gov. decree (324/2013 (VIII.29.) Gov. decree on Unified Digital Utility Register)
IE	Currently there is no such obligation on network operators in Ireland.
IT	According to D.M. 11/05/2016 all network operators and physical infrastructure managers who hold the information and the public administrations that own and hold the information are responsible for sending, validating, correcting and updating the data and information communicated to SINFI and are required to provide the Manager with the necessary provisions regarding the accessibility of the same. The information collected in this way within SINFI constitute the information base that gives an operator interested in laying high-speed telecommunications networks, the pre-existence of infrastructures that can be reused for this purpose. As detailed in the structure of the information collected in the previous question, the infrastructure operators, at the time of delivery of their data, are called to send the information about the usability of each infrastructure, indicating whether it is: - Usable (generic) - Usable - Empty - Usable - Partially occupied - Usable - With constraints of use - Not usable (generic) - Not usable - Complete - Not usable - With security constraints
LT	RRT has no specific requirements for the network operators about the provision of the information concerning their existing physical

	infrastructure which they have made available to other operators upon specific request.
LU	-
LV	Requirement to network operators to make available via the single information point, and in electronic format, the information concerning their existing physical infrastructure which they have made available to other operators upon specific request are stated by law on High-speed Electronic Communications Network
MT	As administrators for road works permits, Transport Malta does not request entries to actually furnish with details of their existing physical infrastructure, but during the permit consultation period, entities that may be affected by a road works proposal, are requested to provide details of the location of their underground/buried services so as to ensure that any new works in the respective area is carried carefully and minimise the risk of damaging any existing third party underground infrastructure.
NL	There is no requirement to network operators to make their information on physical infrastructure available via the KLIC system, but about 80% of the network operators have put the digital data in the system.
PL	Operators are obliged to transfer data held in electronic form. In the first year of the information point's operation, operators were able (not obliged) to transfer data held in electronic form. The result was that the data were not transferred. After the introduction of the obligation, the point was supplied with the data.
PT	Network operators are obliged to provide in SIIA the georeferenced information about all the physical infrastructures suitable for the accommodation of electronic communications networks which they own or manage, however they are not obliged to explicitly indicate in SIIA the parts of their physical infrastructure that were made available to other operators upon specific request. • Best practices identified in other MS or non-EU countries Regarding the practices identified in other MS, the 2018 WIK Report "Study on Implementation and monitoring of measures under BCRD and the 2017 BEREC report on implementation of the BCRD, BoR (17) 245, analyse the matter of SIP.
RO	There is no national practice in this regard.
SE	In Sweden all network operators and network owners have the obligation to make the minimum information available. There are though no obligation to use the SIP, i.e. other electronic means as e.g. own webpage can be used.
SI	Slovenian ECA requests in all cases of planned construction of civil works (both investments in electronic communications networks and investments in utilities), that such planning is notified to AKOS (NRA), together with the callout for co-investment in electronic communications networks: - The time limits for the notification and callout are at least 30 days prior to the issuing of the order to produce the project or 60 days prior to the commencement of works. - All notifications are being published in the Infrastructure Investments portal (see q. 16).

	When interest of co-investment is expressed, investors must plan their networks in a manner that enables electronic communication networks and associated infrastructure to be built at the same time.
SK	As mentioned above, information on the existing physical infrastructure is provided by obliged entities. The obliged persons are: central state administration bodies, local state administration bodies, higher territorial units, municipalities. The following minimum information on the availability of the existing physical infrastructure are obligated persons obliged to provide: a) Basic technical parameters and identification of the type of physical infrastructure, b) Location of physical infrastructure defined by the municipality, cadastral territory and ground plot number, c) Data on the current use of physical infrastructure; and d) Contact details of the network operator in the extent of name, surname, delivery address, telephone number and email address. We have no practices regarding the gathering of information provided by network operators on existing physical infrastructure. SIP in the Slovak Republic have implementation problem with collecting the information on existing physical information, because the obligatory person for the provisions of this information is public authority. Therefore (due to the lack of transposition), the data gathering regarding the information on existing physical information is not effectively applicable. RU proposed new legislative draft to Ministry of transport and construction of the Slovak Republic, where network providers shall provide the information also on existing physical infrastructure. According to our legislative proposal: “Public administration bodies are obliged to provide information on existing infrastructure to the single information point if they have this information in electronic form. Network operators shall be obliged to provide the single information point with this information in case they have this information in electronic form and the public authorities do not have this information in electronic form.” It should be concluded that there is the contra dictionary content within the effective Act. Public Authorities (permit granting bodies) are entitled to gather information on the presence of the network directly from network providers (undertakings) thus there is an objective presumption that these bodies do not have information on the existing infrastructure at their own disposal. Contrary to previously mentioned, public authorities shall provide information on existing infrastructure (which they a priori do not have at disposal and must be collected during every single permit granting procedure) to the single information point.

	Therefore (due to the lack of transposition), the data gathering regarding the information on existing physical information is not effectively applicable.

***Question 16**: Please name identified best practices in your Member State at any level (central, regional, local), as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Other mechanisms to improve transparency concerning physical infrastructure.*	
Member State	National Best Practice
AT	• aggregated data is provided for the national and regional BCOs. • a list of civil engineering projects is provided for all users of the SIP, not depending on the industry sector.
BE	For all environmental permit applications, the public is involved directly. <u>Regarding information on antennas in the Flemish Region:</u> The antenna certificates are publicly available on the map with antennas https://zendantenneskaart.omgeving.vlaanderen.be/. The dataset is downloadable and also available as WMS and WFS via Geopunt. <u>Regarding antenna site sharing:</u> • The aim of RISS (http://www.riss.be/nl/index.php) is to support and encourage the management and updating of a database of antenna sites and the processing of the data of all operators concerning their site in this database, in accordance with article 27 of the Act of 13 June 2005 on electronic communications and the practical realization of articles 25 and 26 of the Act, for the benefit of the members of the association and with a view to the shared use of these antenna sites. This goal fits into a broader framework of obligation of shared use of antenna sites. • According to the recommendation, Member States should consider making information available through the single information point concerning physical infrastructure beyond the minimum specified in the Broadband Cost Reduction Directive, such as total and spare capacity of the infrastructure (point 12). It appears from the recommendation that this kind of information only concerns physical infrastructure controlled by public sector bodies (recitals 17). However, in case of 5G deployment, we consider that it is important for the operators to have also access to the total and spare capacity of all the infrastructures, even those that are not controlled by public sector bodies. Access to the total and spare capacity of the physical infrastructures, regardless of whether they are controlled by private operators or by public sector bodies, will ensure efficient use of existing physical infrastructures. Indeed, this type of information is important taking into account the fact that the roll-out of the 5G requires the deployment of additional equipment and therefore additional space on physical infrastructure (masts, towers, etc) will be needed for the operators in order to put their equipment. We therefore consider it a good practice to add this kind of information to the required information in the single

	information point.
BG	
CY	-
CZ	Czech parliament has already approved provisions necessary to introduce regional digital technical maps. New provisions come into effect in July 2023. Regional digital technical maps should contain some parts of minimum information concerning the existing physical infrastructure.
DE	Apart from the use of WebGIS, the Federal Network Agency's Infrastructure Atlas will in the future also make available data via an OGC-compliant WMS interface. Transparency is significantly improved as a result of providing infrastructure data in the context of the data available in the user's GIS system. Transparency will further increase with the aforementioned planned data portal (GIS Tool), which is to be operated by the Mobile Communications Infrastructure Company (MIG) on behalf of the Federal Ministry of Transport and Digital Infrastructure. Apart from information on shareable infrastructures, the GIS Tool will also include information on the fields of broadband roll-out, future network roll-out, construction sites and public sector properties.
DK	LER offers a feature for coordination of digging works which is part of the preparatory work which must be done in connection with certain digging works. This feature is offered as a technical support for the obligation to coordinate digging works stipulated in the Road Act (see the answer to question 1 and 2).
EE	-
EL	-
ES	Not more than those already described.
FI	Traficom together with different interest groups (industry, municipalities, other authorities) has launched an Expert Working Group to discuss and tackle the various problems and issues that have been identified in the co-operation and coordination. The six work streams identified for the Group are: 1. Definition of passive infrastructure network elements and sharing of these elements 2. Processes related to passive infrastructure sharing and deployment and anticipating future needs 3. Geolocation of passive infrastructure and availability of free capacity 4. Promoting the use of passive infrastructure in land use and permit granting 5. Pricing and cost sharing principles of shared use and joint construction as well as other terms of contract 6. Handling transitional situations based on necessary changes in the area (changes in the alignment of a road) or changes caused by technological evolution (e.g. 4G -> 5G). The aim is to identify best practices concerning various aspects of the processes involved and agree upon the implementation of these practices among the parties involved. The principal working method will be to use pilots to identify and test the practices. The working group will be operational for approximately three years.
FR	Voir question 12 : Le guichet unique fait un travail de référence des exploitants à qui le demandeur doit s'adresser pour obtenir des plans de réseaux. Le guichet unique ne référence pas lui-même les plans des réseaux, il est un point de contact.

HR	There is no need for additional mechanisms given the existing regulatory framework other than that mentioned in question 9.
HU	○ The NMHH plans to create and regularly update a complex, transparent and uniform "**Hír-Közmű" register** that can provide a broad-based support to NMHH's work (construction, authorization of electronic communications structures, building supervision), while also providing assistance in tasks related to analysis and market regulation. The envisaged register, however, will not only assist the authority, but will also provide useful information aligned to uniform regulatory principles nationally, to all electronic communications operators, including the location and data of individual networks. In addition, it may also help operators in submitting their requests and planning their upgrades, as ensuring the availability of the required data may ease their investment decisions and, indirectly, it would also reduce implementation costs. By Q1 2023, Hír-Közmű will also be used to provide the public and other competent authorities (including the E-utility register and the Central Statistical Office / Eurostat) with georeferenced or aggregate data on electronic communications infrastructures. ○ In addition to the Hír-Közmű register, NMHH's website at **szelessav.net46** provides complete and accurate information on internet speeds in Hungary to domestic users in a georeferenced format. The website displays data (on fixed broadband speeds) measured by the Authority's metering boxes, also enabling consumers to initiate readings from their own devices to increase the diversity of data reporting. The quality measurement system was developed on the basis of international trends. Through the consumer protection oriented website and the publication of verified data measured at various providers, the Authority improves the transparency of the internet subscription market: the results of the competitors can be viewed and compared directly on a single website. ○ Currently there is also another online platform for planning purposes, that is the **Network Planning and Monitoring System** operated by the Superfast Internet Buro, where all the plans for the governmental national broadband development program will be continouosly pre-validated then validated with feedback for the companies involved.
IE	The Mobile Phone and Broadband Taskforce collaborated with the Office of Parliamentary Works (OPW) as part of its 2016-2019 Work Programme, in order to oblige commercial and non-commercial State and public bodies to increase the number of records listed on the Intra-State Property Register. It is expected that development of an official register of State-infrastructure, which State bodies will be obliged to regularly update in order to ensure complete transparency concerning the availability of physical infrastructure, will be pursued by the Taskforce as part of its future work programme.

46 http://szelessav.net/en/

	Consideration is also being given to oblige the City and County Management Association (CCMA) to geo-code all new ducting and make information on the ducting accessible to local authorities – where practicable, feasible and so long as it would not raise security issues. This would aim to provide a more complete picture of utility infrastructure under roads, which would further allow telecommunication companies and local authorities to have a greater insight into what infrastructure is potentially available to share. In addition, knowledge of underground infrastructure would allow utilities to avoid others' infrastructure. It is anticipated that under the future work programme of the Mobile Phone and Broadband Taskforce, the feasibility of developing a database for the sharing of telecommunications operator information and local authority infrastructure information will be explored, in order to further improve transparency in this regard.
IT	Legislative Decree no. 33/2016 as a further mechanism to improve transparency and maximum reuse of infrastructure, has provided for physical infrastructure managers and network operators, in case of construction, extraordinary maintenance, replacement or completion of the infrastructure, the obligation to communicate the data relating to the opening of the site, to SINFI, at least ninety days in advance unless it is an emergency intervention. The Decree also provides that these parties must also make available the minimum information regarding the civil engineering works, in progress or planned, relating to their physical infrastructure for which an authorization has been granted, a procedure for granting the authorization is in progress or it is planned to submit for the first time an application for authorization to the competent authorities within the following six months, indicating a) the location and type of works; b) the network elements involved; c) the planned date of commencement of the works and their duration; d) a contact point. The required information is delivered in the same way as for existing networks, identifying the information on the state of completion within the geographical data (shapefile or DBF) with the most appropriate attribute "STATUS": in operation, under construction, in disuse, in project, not in operation, other. This mechanism makes it possible to increase transparency with respect also to the laying of new infrastructure or networks, with a view to also allowing the participation of more subjects in the excavation leading, therefore, to a reduction in the costs of construction of the work and the possibility for subjects who would not have the necessary capital to invest independently, to lay their own networks or infrastructure. In order to facilitate the loading and updating of missing data, the operators suggest to consider also the acceptance of data with theoretical imperfections. This "imperfect" data would not cause any problems in practical use.

	A possible improvement could concern the evolution of the user interface. It will be able to allow easier navigation and identification of the infrastructures of interest with its owner. For example, currently it is not possible to select the area of interest by entering the coordinates or address; it is not possible to categorize the infrastructures by owner, either through different colors or with a filtering system that allows you to view only some of the overlapping infrastructures; the way of creating new reading users should also be simplified.
LT	No additional comments.
LU	-
LV	-
MT	Operators keep data concerning physical infrastructure as stipulated in DIRECTIVE 2014/61/EU. Once a permit request is made, these operators are consulted with regards to the existing infrastructure and feedback on each permit is provided. Physical infrastructure is also shared amongst the operators and they do consult with each other before requesting a permit.
NL	There are various public online information sources where telecom operators can also find information on the physical infrastructure of network operators. For instance on the websites of regional (energy) network operators, where (uniform) open data can be found on for instance gas and electricity cables and ducts, transformer stations and street furniture. Also, there are various detailed topographic maps of the Netherlands (e.g. PDOK, BGT, TOPNL) available (in various open data formats) that include infrastructures and objects such as buildings, roads, bridges, railways, waterways, flood defenses, dikes, electrical grids, high-voltage pylons, wells and street cabinets.
PL	The most important mechanism used for increasing the amount of data received was, as mentioned above, the introduction of the obligation to provide it.
PT	No other mechanisms to improve transparency are implemented.
RO	According to Law no. 159/2016, entities exercising the right of administration over the public property of the state or of the territorial-administrative units have the obligation to send to ANCOM a copy of the document containing the access conditions established in accordance with the provisions of the law, as well as any amendments or completions to these conditions. Based on the information provided, ANCOM created on its own website a database available to the public which include the conditions for access to the public property of the state or of the administrative-territorial units as well as the entity responsible for granting the access right. The public property of the state or of the administrative-territorial units includes physical infrastructure owned directly by public institutions.
SE	At the designated website “Utbyggnadsportalen”, which is part of the SIP, information on resolved cases and other relevant information is published. There is also information on how to contact PTS by e-mail concerning BCRD related questions.
SI	The Single information point (Art. 6 BCRD) is operating through the Infrastructure Investments portal, managed by AKOS. It is accessible at this web address: http://investicije.akos-rs.si/ The portal enables the investors in public infrastructure to notify their plans for construction of infrastructure online and also allows the interested co-investors to announce their interest of joint construction. The information of active notifications on the portal is fully accessible to the public.

SK	We have no relevant national practice in this matter.

***Question 17**: Please name identified best practices in your Member State as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Measures to enable operators to obtain access to physical infrastructure (including buildings and street furniture) controlled by public bodies, which is capable of hosting very high capacity network elements, on similar conditions as those set in Article 3 of the BCRD?*	
Member State	National Best Practice
AT	• Shared use of physical infrastructure (including fibre) of public bodies was mandatory since 2009 (e.g. ÖBB, ASFINAG, BIG); • Concerning the telecommunication sector (since 2018 including small cells) the rights of ways are more extensive than in the private sector. • Rights of way in public properties are available free of charge.
BE	There are permit exemptions in the spatial planning legislation for placing antennas on existing buildings and street furniture, so mostly, there is no permit needed. The RISS regulates site sharing between operators (there is send a 'letter of interest' to other operators when a new location for antennas is developed).
BG	
CY	-
CZ	The Czech Republic envisages the active role of BCO, and especially its area co-ordinators, in this area. The BCO, as established by the Ministry of Industry and Trade, has a role of information centre, spreading the information on electronic communication networks, especially VHCN, from the technical as well as political point of view. This role was found to be critical, as there are approximately 6300 municipalities in the Czech Republic, 96 per cent of which has up to 5000 inhabitants. Numerous municipalities are managed by people having to solve problems that are felt to be much more acute than VHCN. Being informed in an appropriate way helps them understand the possibilities high speed internet could play for the development of the municipality and for its inhabitants. According to current results of BCO, spreading expert, impartial information and model agreements plays an essential role. On the other hand, BCO serves also to operators/investors in a role of mediator.
DE	The **Telecommunications bill** for the transposition of the EU Code introduces a new definition for supporting constructions: these are physical infrastructures under construction, in operation or in disuse including the land and the buildings located on them that belong to public sector bodies or other physical infrastructures under their control that are technically suitable for the installation of small-area wireless access points or necessary for the connection of such access points and for which the construction or decommissioning or operation right is derived from or granted by the public sector body; such infrastructure includes, in particular, street furniture, public street lighting, traffic signs, traffic light signals, billboards and advertising columns, bus and tramway stops and metro stations. Moreover, the bill provides that, in application of the DigiNetz regime (in accordance with the "Gesetz zur Erleichterung des Ausbaus digitaler Hochgeschwindigkeitsnetze"; act to transpose the BCRD into national law), owners or operators of public telecommunications networks have the right to apply for access to such supporting constructions. The procedure is, at the same time, subject to the dispute settlement mechanism of the Federal Network Agency.

	In order to achieve an acceleration and relieve the burden on both sides, the **authorities responsible for the construction and maintenance of public ways** can also publish **construction and connection concepts** and make them part of their consent in the form of ancillary provisions. Furthermore, **model agreements** can be published via the Federal Government's Single Information Point. A **survey and documentation of federal conduit infrastructures** along the federal highways is currently underway. Appropriate funds have been provided for this purpose. The study will determine the extent to which shareable infrastructures in the form of fibre optic, conduits and antenna sites and support structures exist along the 53,000 kilometres of federal highways and motorways. To improve the use of federal level properties by network operators, a model agreement between the parties (Institute for Federal Real Estate (BImA) and network operators) is being prepared with the involvement of the Federation. The locations are to be made available for moderate fees in particular in areas that are inadequately covered and where coverage is not economically feasible. A longer lifetime of the agreements and generous periods of notice are designed to ensure that the network operators have investment certainty. The Federal Government will establish a uniform procedure for the rental of federal properties and infrastructures. Agreements have already been concluded and terms of use established for the use of existing (fibre optic and conduit) capacity along federal waterways and federal motorways and highways. For the establishment of "small cells", which play a major role in the roll-out of 5G in particular, we are aiming for a model agreement regime that regulates access to local authority support structures such as information signs, street lamps, traffic lights or advertising hoardings and secures the local authorities' rights of participation. In the future, the **Mobile Communications Infrastructure Company (MIG)**, which is currently being established, will work towards achieving a better usability of public sector properties, plots and land for the roll-out of the fixed land-line network and mobile communications. The State of Hesse also supports the use of physical infrastructure (such as buildings and street furniture). For this purpose, it makes available a list of all state-owned properties to private mobile network operators. This makes it easier for mobile network operators to identify suitable properties and to approach Hesse's State Company for Building and Properties for the conclusion of lease or rental agreements. This applies in particular to the radio communication sites of the authorities and organisations with security and safety tasks (masts of authorities and organizations with security and safety tasks). The City of Hamburg is entering into agreements for the installation of WiFi access points having a direct fibre optic network connection with operators of high-performance WiFi networks regarding the free-of-charge use of public lighting masts and masts of parking guidance and information systems.

DK	See the response to question 1, section 2a. The Mast Act and Digging Act apply to physical infrastructure held by most public bodies. Furthermore, on 21 December 2020 new rules implementing the EECC Article 57, Section 4, is expected to enter into force. These new rules state that telecom operators, subject to a request, may deploy small-area wireless access points on physical infrastructure and street furniture controlled by public authorities and on street furniture controlled by others than public authorities. These new rules are implemented in the Mast Act. The expansion of these rules to cover privately owned street furniture as well is expected to be beneficial, as private public transport providers and privatized utilities companies are known to hold street furniture. As one best practice, it can be mentioned that the Danish Building and Property Agency owns a large portfolio of properties on behalf of the state across the country. This centralization of management of a large share of state-owned buildings means that inquiries regarding leases on government property (especially office buildings) can usually be addressed consistently to the Danish Building and Property Agency, rather ad hoc to the individual public authority / university etc. occupying the building. *Comment: For government buildings and facilities such as those held by the Danish Building and Property Agency, Denmark wishes to highlight that depending on the authority, university etc. occupying the property, security or research considerations may make the placement of antennae on the building incompatible with the needs of the primary occupant of the building. Further, for antennae on buildings, access to the building may require security clearance and/or an escort whenever work is done on the antenna. This should be taken into consideration when considering measures enabling/expanding access to government property etc.*
EE	-
EL	-
ES	A considerable number of problems linked to the use of street furniture when the deployment has to be made have been identified in the FEMP-RECI-DIGITALES group in Spain. In order to ensure operators to obtain access to this infrastructure and be able to exercise their right, these problems must be tackled: • Compatibility with low voltage regulations • Proper limitations to liability derived from the use of a support structure: city halls won't accept being deemed responsible for the loss of certification of city furniture (i.e: a city light loses its certification because it was drilled during a SAWAP installation) or because a certain element collapses because of the weight of an electronic communications element. This problem is still being tackled in the FEMP-RECI-DIGITALES group and we hope to find a solution soon. • In-building infrastructure for SAWAP deployment. • Physical infrastructure of newly created urban projects is accessible for all operators. • Ways of municipalities to make available infrastructure to telecom operators.

While the next recommendations do not expand the access to existing physical infrastructure, they help that this right is actually guaranteed, something that is not obvious at all. With this in mind, some best practices are described:

BEST PRACTICE 24:

Modification of the Spanish low voltage regulations in Spain

The FEMP-RECI-DIGITALES group in Spain identified as a major problem to enable access to street furniture the incompatibilities found in the low voltage regulation. Prior guidelines did not foresee electronic communication elements (such as SAWAPs) as a possible part of the low voltage network. Now they are described as control and auxiliary service networks, so they can be powered sharing the same subterranean duct, with certain conditions.

Additionally, cable regulations have been changed in Spain in order to achieve a telecom/electrical compatibility and Optical Fibre cables may be installed in the same pipe as electrical cables, as long as they have a high fireproof certification.

The changes in the low voltage regulation guidelines were published this july. Link:

http://www.f2i2.net/documentos/lsi/rbt/guias/ITC-BT-09_guia_E_jul_20_R2.pdf

Some extracts of the modified guidelines:

"*Within the scope of this ITC-BT-09 GUIDELINE, in addition to the lighting installations, the following are considered as external services: lighting and other services electrical for urban furniture, street furniture, ornamental lighting, beacons light, non-autonomous light signals for traffic control, as well as other receivers. Also, in accordance with Article 57.4 of Directive (EU) 2018/1972 of European Parliament and of the Council of 11 December 2018 establishing the European Code for Electronic Communications, national, regional or local authorities must allow operators access to outdoor lighting installations that of which they are owners and that are technically suitable, to host and connect to a network trunk wireless access points for small areas (SAWAP) and consequently the power supply of these devices and the coexistence with other devices must be considered telecommunication backbone networks*. "

BEST PRACTICE 25:

In-building infrastructure for SAWAPs deployment

One main problem when installing SAWAPs inside buildings or on their rooftop is the access to buildings in order to deploy cables and

	associated equipment. Current legislation in Spain (General Law on Telecommunications) give solutions to buildings subject to Joint Common Ownership Law (MDUs). Since these solutions could be clearer for this specific case and due to the fact that SDUs, public held buildings and singular buildings (i.e.:Hotel) are not under the scope of the General Law on Telecommunications, standrization works have started to tackle this problem in Spanish Standardization Association working groups. The purpose is to define technical solutions for all kind of buildings that could be useful from a small cell deployment point of view, but also to allocate spaces and ducts for IoT elements, such as sensors, nodes, hubs or even cables. This would allow new buildings to count with ducts and spaces to install, for example, small cells in garages in order to provide service to connected cars, or ducts to install fibre up to the rooftop, where a small cell is installed. It will also be able to install electronic equipment acting as IoT hubs. Once the standard is passed, it will be studied whether it is adopted under legal coverage. NOTE: it would be useful that in the revision of the BBCost Directive, in-building physical infrastructure includes provisions for this purpose. BEST PRACTICE 26: <u>Physical infrastructure of newly created urban projects</u> Article 36 of General Law on Telecommunications establishes that, when newly created urban projects are undertaken, the technical development project must provide for the installation of civil works infrastructure to facilitate the deployment of public electronic communications networks, and it may also include passive network elements and equipment under the terms determined by the technical telecommunications regulations issued in development of this article. The infrastructures that are installed to facilitate the deployment of public electronic communications networks in accordance with the previous paragraph will be part of the resulting set of urbanization works and will become part of the municipal public domain. The public administration which owns this public domain, shall make such infrastructure available to interested operators on an equal, transparent and non-discriminatory basis. In practice, it is very common that the first operator accessing to this infrastructure carries out the maintenance, while the costs for this maintenance are shared among all the operators having acceded to such infrastructure.

	BEST PRACTICE 27: Access to dark fibre owned by public administrations Some public administrations (i.e: Barcelona City Council and provincial council) take advantage of civil works they perform or infrastructure maintenance works in order to deploy optical fibre. Once this fibre is deployed an easy procedure for operators is established in order to gain access. BEST PRACTICE 28: Definition of consensual protocols and conditions in order to give acess to street furniture Some city councils in Spain (i.e: Barcelona) are designing a set of protocols and conditions to grant access to urban furniture. These protocols and conditions will establish the viability and the terms in which the installation of electronic communications networks has to be performed. This definition also includes the procedures for coordination between maintenance companies during the entire life cycle of the element. With these protocols, it is deemed that faster response to access request will be achieved, since the different departments involved in city will be coordinated and will have certainty on the conditions of the access. In some cases, instead of a definition of protocols and conditions, collaboration agreements between municipalities and operators are signed. These agreements often include procedures that not only enable the right to access to this infrastructure, but also expand it. An interesting collaboration agreement was signed in Toledo with a telecom operator in order to deploy optical fibre in the historic centre (under cultural protection), including through acess to some municipal physical infrastructures. After the deployment, this operator had access obligations to its deployed infrastructure. PRACTICE 29: Third party neutral-operators for access granting Some city councils in Spain (i.e: Donosti, Ermua) have appointed a company in order to manage their physical infrastructure or even their dark fibre (a neutral network).

	While we can't claim that this is a best practice (since the results of these experiences have been uneven), it is interesting to highlight it, as it may potentially help some city councils to be able to grant access in a timely manner, having a knowledge of all their infrastructure. These third parts can be public or private companies and they usually mange relations with operators and process all the access request, including the final access granting. These third parties may establish an infrastructure access supply framework, under which the access is granted under conditions of equality, transparency and non-discrimination, in timely manner and with relatively fast procedures. Other municipalities have shown interesting best practices including : • 4G-5G small cell deployment pilots. From the experience, they would reach to conclusions in order to be able to grant faster access in the future. • Creation of other underground fiber networks (neutral networks to which they give access, similar to the practice described before) It is fair to end this answer by pointing out that the operators/manufacturers association DIGITALES claims that there are several problems, when requesting access, that should be addressed. In particular, disproportionate conditions that are sometimes required when negotiating access to public held physical infrastructure (for example: conditions on roadside poles, aerial deployments, etc).
FI	In one of the work streams (nr. 1) of the expert group referred to in Q.16 the group will seek to find common practices to enable more efficient use of this type of infrastructure. The European Commission has provided criteria for small cells (size, power, etc.) that would enable deployment without separate permits or license from the municipalities (EU2020/1070). It could be beneficial to investigate the possibility to define criteria also for other types of base stations to simplify the deployment process and remove municipality-specific requirements.
FR	Les autorités françaises n'identifient pas, à ce stade, de bonnes pratiques, que ce soit en France ou dans les autres Etats membres. L'état des déploiements n'est pas assez avancé pour qu'un retour d'expérience consistant soit en mesure d'apporter de bonnes pratiques à ce stade.
HR	• Public bodies should offer physical infrastructure to operators on the conditions and prices which are equivalent to regulated prices of physical infrastructure or even more favourable. • Prices and conditions should be valid for at least 2-3 years and not to be changed one-sided. • Public bodies should plan building ducts at the same time when some other communal infrastructure is built (water system, sewage, etc.).

	• Public bodies should provide lease of poles. Providing access to such physical infrastructure to the operator concerned should be the responsibility of the public body managing it so that the public body cannot unreasonably deny access to the physical infrastructure in question to an operator requesting access to the same infrastructure to set up very high capacity network elements. Thus, a public body should meet all reasonable requirements for access to its physical infrastructure. The conditions and amounts of the fee for access to physical infrastructure should be predetermined, fair and reasonable, clear, unambiguous, non-discriminatory and transparent, i.e. made public. In the event of denial of access or any other resulting dispute, any party (operator and public body) should be allowed to bring such a dispute before the competent national dispute resolution body.
HU	○ The NMHH Decree 14/2013 on the Setting of Electronic Communications Structures and the Related Administrative Procedures will be amended in accordance with the provisions of the European Electronic Communications Code. The amendment is expected to enter into force by December 2020, and contains provisions that facilitate access to physical infrastructure capable of hosting very high capacity network elements. ○ According to the draft regulation, the owners of street furniture or advertising equipment (including owners of advertising devices displaying an information sign), and the owner of the advertising columns should **cooperate** with each other at the request of the electronic communications service provider in order to set up a small area wireless access point. ○ If a party obliged to cooperate rejects the offer or the agreement is not reached within **45 days** of receipt of the offer, NMHH may, upon request, establish the right of use by decision, to the extent necessary in the public interest for the construction of the small-area wireless access point. ○ The draft regulation specifies further details of the cooperation and the cases when the offer of the electronic communications service provider may be rejected. Notably, the **cooperation may be rejected if the installation endangers human life and health**, in particular, if the EMF emmission of a small-area wireless access point exceeds the health limit laid down in the ministerial decree regulating the health limits for electric, magnetic and electromagnetic fields in the 0 Hz-300 GHz frequency range. ○ The detailed rules are specified in the Article 20 of the draft regulation. • Best practices identified in other MS or non-EU countries ○ Not necesseraly a best practice, however an interesting initiative that in Australia, there are special rules governing the

	installation of "Low-impact facilities", including certain mobile phone base stations used for 3G, 4G and 5G mobile technologies, which are commonly installed on structures such as light and power poles, building rooftops, masts or towers. Under Schedule 3 to the Telecommunications Act 1997 of Australia, licensed telecommunications carriers have the power to enter onto someone's land without a need to obtain State or Local government planning approvals to inspect the land; install low-impact facilities; maintain facilities, including low-impact facilities. The Telecommunications (Low-impact Facilities) Determination 2018, made by the Minister, specifies what a low-impact facility is and defines the category of land these types of facilities can be installed on47.
IE	In 2017, the Mobile Phone and Broadband Taskforce established the Access to State Assets Working Group with the remit of investigating the feasibility of developing standardised policy, lease and costing arrangements for accessing and utilising State and publicly-owned assets for the deployment of telecommunications infrastructure. The Working Group produced a draft Government Policy Statement on the Strategic Importance of Facilitating Telecommunication Provider Access to State and Publicly-Owned Assets. When the Policy Statement has been approved by Government, the Working Group will be mandated to: • Consider the development of standard contracts for use by commercial and non-commercial bodies in respect of siting telecommunications infrastructure on their respective properties and assets; • Pursue the development of maps illustrating available infrastructure across the country; • Develop guidelines on where infrastructure can and cannot be located. <u>The Working Group on State and Publicly-owned Assets will be enabled to put an onus on public authorities to facilitate reasonable requests for access to any physical infrastructure controlled by them at a national, regional or local level, suitable for the deployment and housing of telecommunications infrastructure.</u> <u>The objectives of the Working Group on State and Publicly-owned Assets will supplement, and go further than, the implementation of the the obligation imposed upon Member States by Article 57 of the European Electronic Communications Code.</u>
IT	Every physical infrastructure manager and every network operator have the right to offer network operators access to their physical

47]https://www.aph.gov.au/DocumentStore.ashx?id=a3ec5b3d-73a7-4c76-a6d3-603d17c70f25&subId=672949

	infrastructure for the purpose of installing elements of high-speed electronic communications networks. An operator may therefore make a written request to interested parties, including public stakeholders, for the deployment of high-speed electronic communications network elements. The owner or manager of the physical infrastructure and network is obliged to grant access in accordance with the principles of transparency, non-discrimination, fairness and reasonableness. In case of refusal of access to a physical infrastructure, the operators can open a dispute in front of Agcom according to d.lgs. no. 33/2016 and Agcom regulation on dis-pute resolution 449/16/CONS. AGCOM within two months is entitled to settle the dispute with a binding decision or with an agreement between the parties. The description of the proceeding is established in AGCOM's decision no. 449/16/CONS
	AGCOM's Decision no. 449/16/CONS Phases • Initiation and acceptance of the referral • Conciliation • Interim orders • Investigations • Final decision • Publicity and execution Initiation An authorized network operator presents a request (=complaint) to Agcom according to BCRD and Law n. 33/16 which contains: A detailed description of all the facts and the elements which caused the claim and the period which those elements referred The economical, technical and juridical reasons that support the claim What – in concrete – the operator demands The specific indication of the law infringement Evidences (audio files/documents/contracts) Acceptance of the referral When the referral conforms to the scope of application and contains the required infor-mation, Agcom accepts the case for a dispute

	resolution and shall reply within 5 working days from the date of the reception of the referral Agcom shall inform the Complainant whether the case has been accepted for dispute res-olution Agcom shall inform, when the case has been accepted for dispute resolution, the Oppo-nent of the referral and send him a copy of it. Agcom shall call the parties involved for the oral proceeding within 10 working days. The opponent to the referral, within 3 working days before the hearing is taken, shall send to the complainant and to the case handler memories and observation in order to defend its position. If the referral does not conform to the formal requirements, Agcom may provide some guidance to help the Complainant to identify the faults; otherwise the Authority shall refuse to accept the dispute. Conciliation Agcom shall offer conciliation as an alternative mechanism for dispute resolution. Agcom shall attempt a conciliation solution of the dispute resolution to Parties in the first hearing. In any time of the proceeding Parties may negotiate and try to reach an agreement by themselves or if interested may ask to the case handler to elaborate and propose them a conciliation solution. Interim orders The interim measure shall be justified in case of existence of a “fumus boni iuris” (prima facie existence of the right) and of a “periculum in mora” (irreparable harm that the de-lay may lead to irreversible damage of the party applying for the measure) and if there is a direct effect on the consumer protection. A final decision is made if one or both of the conditions occur in the shortest possible time frame. The decision anticipates the effects of the final decision. The interim measure shall be justified in case of existence of a “fumus boni iuris” (prima facie existence of the right) and of a “periculum in mora” (irreparable harm that the de-lay may lead to irreversible damage of the party applying for the measure) and if there is a direct effect on the consumer protection. A final decision is made if one or both of the conditions occur in the shortest possible time frame. The decision anticipates the effects of the final decision. Failure of the conciliation and investigations If the negotiation fails, the case handler conducts all investigations requested and takes all evidences necessary ex officio. At the end of the investigations transmits to the Board a detailed note containing the de-scription of the position of the parties and an assessment of the investigations. Final decision AGCOM’s Board may decide to hear the parties. The Board adopts a binding decision.

	The decision of the Board shall oblige the parties from the date of its notification (manda-tory order). The Board shall establish a limit period of time within the parties shall fulfil the obliga-tions imposed in the binding decision. Publicity The announcement of the decision shall be notified within the next 10 days after being adopted. The full contents decision shall be notified within 30 days to the parties and then pub-lished on Agcom website having regard to the requirements of business confidentiality. Publicity The announcement of the decision shall be notified within the next 10 days after being adopted. The full contents decision shall be notified within 30 days to the parties and then pub-lished on Agcom website having regard to the requirements of business confidentiality
LT	The discussions with the Ministry of Energy and the National Energy Regulatory Council have started to evaluate bottlenecks related to access to the energy utilities infrastructure and the possibility to revise the requirements. It was agreed to amend the relevant technical rules. These amendments will remove unjustified technical restrictions limiting co-building of energy and electronic communications infrastructures, and access of energy infrastructure. For example, draft technical rules decrease minimum distances between underground electric supply cable and fibre cable put in the same trench, decrease minimum distances between overhead electric supply lines and overhead fibre cables, etc.
LU	Any public sector body holding in electronic form, by virtue of its missions, elements of the minimum information referred to by the BCRD on physical infrastructure has to make it available through the SIP
LV	The obligation to grant access to physical infrastructure (including buildings and street furniture) controlled by public bodies is stated by law on High-speed Electronic Communications Network
MT	All physical infrastructure and furniture are regulated by the Authority and any instalments have to be requested and approved by such authority, even is so the regulatory authority reserves the right to remove any physical infrastructure and furniture with a valid reason.
NL	Since 2000, there exists a policy guideline (Gedragslijn antennes op rijksobjecten) about the implementation of antenna installations on objects owned by the central government. In principle this guideline states that objects owned or managed by the central government are available for telecom operators for the implementation of antenna installations by mobile telecom operators. This concerns office buildings, sites and structures such as bridges, locks and road portals. The aim is to provide unambiguous conditions to telecom operators in the case of implementation of antenna installations on central government objects. Furthermore, at this moment the Antenna Office (Antennebureau) of the Radiocommunications Agency, together with municipalities and mobile telecom operators, is working on a renewed antenna policy template (voorbeeldnota gemeentelijk antennebeleid) which

	municipalities can use to establish their local policy with regards to the implementation of antenna installations. In this new template, involved parties are considering to include that a municipality is making its objects available for the implementation of both conventional antenna installations and small cells, under reasonable conditions.
PL	In the case of access to a public physical infrastructure in order to locate a small-area wire-less access point, is proposed a solution whereby this access will be free of charge. The refusal to provide access by public entities should take place only in cases specified by EECC, and the Minister of Digital Affairs, the President of UKE and other competent authorities are responsible for making them aware of the benefits of such a solution. Pursuant to recital 18 and point 14 of Commission Recommendation (EU) 2020/1307, we consider street furniture to be a subset of technical infrastructure as a public technical infrastructure. In the case of access to a public physical infrastructure in order to locate a small-area wireless access point, is proposed a solution whereby this access will be free of charge. In the case of access to infrastructure in the road lane is being considered a solution according to which, permission is granted by road operator (primarily bodies of local government) and can be refused only on grounds of public safety pursuant to article 57(1) of EECC.
PT	Regarding access to buildings, DL123/2009 already guarantees the right of access to ITED (Telecommunications infrastructures in buildings) to all electronic communications operators. In fact, article 63 of DL123 states that «the owners and administrations of the buildings are obliged to assure the open, non-discriminatory and transparent access of the electronic communications companies to the ITED, for effects of installation, conservation, repair and alteration, without prejudice to the right to reparation for any losses derived thereof». Access to ITED that are integrated in the common parts of buildings cannot be conditional to the requirement of payment of any financial consideration or of any other nature by the owners or administrations of buildings. Additionally, according to ITED Manual, the telecommunications infrastructures that integrate the ITED must support the existence of several electronic communications operators. In addition, in ITEDv4 the top air passage (PAT) has been scaled to receive 5G FWA accesses. DL123/2009 guarantees also the right of access to ITUR (Telecommunications infrastructures in urbanizations) to all electronic communications operators. Regarding the access to street furniture controlled by public bodies, it is worth to recall that, the obligation to provide access to physical infrastructures publicly controlled, such as street furniture (e.g. light poles, street signs, traffic lights, billboards, bus and tramway stops and metro stations) is covered by number 4 of Art. 57 of the EECC, which also foresees that public authorities shall meet all reasonable requests for access on fair, reasonable, transparent and non-discriminatory terms and conditions, which shall be made public at a SIP. The transposition of EECC into the Portuguese legal framework is underway. NRA (ANACOM) is not aware of best practices implemented by public bodies to enable operators to obtain access to the above mentioned physical infrastructures. Nevertheless, it is possible that criteria like the antenna volume, the aesthetic and the radiation level could be used in order to allow (or not) for the access to street furniture with the specific purpose to install small cells. • Best practices identified in other MS or non-EU countries Regarding practices identified in other MS, the Report "*Light Deployment Regime for Small-Area Wireless Access Points (SAWAPs)*", by SCF

	Associates Ltd, deals with some aspects regarding the access to street furniture.
RO	The public institutions, including the authorities of the central or local public administration, as well as any other entities exercising the right of administration over the public property of the state or of the territorial-administrative units have the obligation to publish: - the characteristics of the building on which the right of access is exercised and the areas where this right may be exercised; - any technical limitations on the exercise of the right of access resulting from the characteristics of the real estate property or from its public use or interest. According the Law no. 159/2016, the providers of electronic communications networks that install networks on masts, pillars or on other physical infrastructure elements, including on roadways, will conclude – in compliance with the regulations on authorizing the performance of civil works – only contracts for exercising the right of access to the physical infrastructure with persons that own or administrate infrastructure elements, under the provisions of this law and will owe tariffs only to these persons. According to Law no. 159/2016 the local authorities have the obligation to request ANCOM the approval on the technical and economic conditions for access to the electronic communications networks built with the participation, support or financing of central or local public administration. Through the approval, ANCOM aims at ensuring a coherent and equitable framework for access to infrastructure for all the providers who request it, under the legal provisions regarding non-discrimination, proportionality and objectivity. The Law no. 159/2016 regulates free access on private property, when such property is owned by the same entity as the building to be connected to the respective electronic communications network. In the case of street furniture, as there are no technologies to use these infrastructures on a large scale so far, we cannot mention the existence of relevant practices.
SE	PTS has specifically conducted supervision at parties in the public sector. PTS has also collected information about usage of BCRD among parties as a part of the yearly survey “Swedish Telecom Market (STM)” in order to get feedback and to collect information in this area.
SI	Slovenian ECA stipulates that network operator have the right to access the building physical infrastructure for the installation of an electronic communications network, if the duplication of this infrastructure would be economically inefficient or physically unfeasible. The owner of

	such building physical infrastructure (not only public bodies) must provide access to the distribution point and building physical infrastructure under fair and non-discriminatory conditions. The construction, installation, operation or maintenance of public communications networks and associated infrastructure in accordance with regulations is in the public interest. If the right of way on real estate owned by the state is not established by a contract, the government may, at the proposal of the operator (regardless of the provisions of the law governing real estate expropriation and restriction of property rights!), decide on the public benefit of public communications networks other public benefit (Art. 16 ECA).
SK	Public building and street furniture referred in art. 57 of EECC shall serve as a host infrastructure for small cells. This infrastructure seems to be of particular importance for specific type of network elements and so fit for purpose (5G inner cities network densification). Art. 57 also provides for a specific access regime concerning this physical infrastructure and it is subject to transposition. We have no specific national practice in this regard, as the transposition process is still pending.

***Question 18**: Please name identified best practices in your Member State as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Mechanisms to ensure effectiveness and efficacy of the dispute resolution mechanism in regard to disputes related to access to physical infrastructure and the functioning of dispute resolution bodies, with a view to solving related issues within the shortest possible timeframe and providing guidance to parties on appropriate conditions and charges, including by timely publication of their decisions.*	
Member State	National Best Practice
AT	"As soon as possible"is the aim, but the parties' rights of both parties (opportunities to comment) must be taken into account. Moreover the procedural terms stipulate a mandatory alternative dispute resolution (within four weeks after application) with the aim to find a timely mutual agreement under guidance of RTR. If a mutual solution can not be reached, TKK has to decide in a formal process. In this procedure an extinction of the exercise of a right is foreseen to ensure effectiveness of this process.
BE	No litigation experience for the Belgian dispute resolution body so far. <u>Regarding permit granting for antennas, in the Flemish Region:</u> • The certificate of conformity is a technical assessment, which means that there is no dispute resolution mechanism needed. Operators can make sites conform by adjusting the technical parameters of the antennas (adjusting powers, azimut, …)
BG	
CY	-
CZ	NRA is national dispute settlement body in accordance with BCRD. It can be stated that the resolution of these disputes is quite similar (from the point of view of substantive and procedural law) as another NGA agenda, which consists in resolving disputes (for example disputes between undertakings in electronic communications, disputes between these undertakings and undertakings operating in another Member State or contract disputes). NRA as national dispute settlement body found out, that parties to the proceedings usually apply, in disputes according to the BCRD, same procedures as applied in the proceedings mentioned above (objections to bias, oral proceedings on the spot, proposals for evidence etc.). Therefore, NRA maintains its decision continuity and consistency also in disputes under the BCRD. • Best practices identified in your MS NRA communicates with parties to the proceedings usually electronically (via electronic data boxes). This kind of communication contributes to speeding up the process.

	NRA also holds an oral hearing on the spot when resolving the dispute over access to the in-building physical infrastructure. This procedure contributes to effectively removing ambiguities about characteristics of the physical infrastructure.
DE	In Germany, the function of the national dispute settlement body is exercised by Ruling Chamber 11 of the Federal Network Agency. It is an application procedure in which the application can also be made electronically so that the Ruling Chamber can start reviewing the dispute quickly. There are no major formal requirements. All decisions are binding, immediately enforceable administrative acts made by a collegial body (Chair + 2 other members) and are therefore similar to a judgement (both in terms of scope and the level of detail). The immediate enforceability of the decisions is not a negligible factor, in particular in the context of a faster broadband roll-out, and has, in the past, proven itself for the protection of rights in cases concerning co-deployment (Mitverlegung) and construction work already in progress. In addition, there is the option of a preliminary order if it becomes clear that the decision is especially urgent. This instrument, too, has been used several times in the past. All decisions of the dispute settlement body are published on its homepage and in the electronic gazette when the decision has been made. The homepage moreover includes further information on the mechanisms and application procedures and continually updated information on each of the pending dispute resolution proceedings. Furthermore, this has the effect that the dispute settlement body is known to the market players as the point of contact for issues still undecided, as witnessed by a large number of queries (outside of dispute settlement proceedings). Having the dispute settlement body at the national regulator allows for a broad range of possibilities for an exchange of ideas and experience and permits - also by way of the instrument of consistency coordination - a close dovetailing with and also differentiation from the other regulatory decisions, both in the field of SMP regulation and, in the future, the field of symmetrical regulation. What is also part of a high level of transparency and good market observation possibilities, is the obligation to submit concluded contracts on shared use to the Federal Network Agency so that the insights gained from them can inform the decision-making practice of the national dispute settlement body. By way of example, this allowed the dispute settlement body to rely, for the determination of shared-use fees, on the median market price determined and use it as a basis for certain assessments regarding an analogue market. This possibility is now being further expanded in the current Telecommunications bill by requiring that co-deployment contracts (Verträge zur Mitverlegung) also be submitted in the future.

	Based also on already decided cases, the national dispute settlement body has now developed principles concerning the sharing of costs when coordinating construction works and, after market consultation, published them as binding for the dispute settlement body in the Official Gazette no 22 of 25 November 2020, p. 1724ff and on the homepage of the Federal Network Agency.
DK	With regards to access to physical infrastructure, there are several dispute resolution mechanisms. Overall, for masts the Danish Energy Agency's experience is that the most important way to resolve disputes is to prevent them. Danish mobile operators have a well-functioning agreement on the terms of site sharing between them which has been approved by the Danish Energy Agency. Under the Masts Act, mobile operators are obligated to enter into such an agreement. The Danish Energy Agency does not know of any disputes regarding access to existing masts between mobile operators where any government authority has been involved in a formal dispute resolution process. Formal processes for this are in place. For access to infrastructure pursuant to the Digging Act (see the answer to question 1), the Danish Energy Agency has experienced little use in practice of these rules. There are not yet any final decisions from the Danish Energy Agency in its capacity as dispute resolution mechanism. Occasionally, issues regarding access to digging on private land owned by a third party in order to deploy fiber network cables to an end-user arise. As a possible subject of discussion, Denmark would be interested in knowing how decisions by the dispute resolution mechanism are enforceable in other Member States. In Denmark, the Danish Energy Agency has no authority to impose fines etc. and decisions must be sought enforced via the courts if not complied with.
EE	Deadline for solving the dispute regarding access to data of the physical infrastructure is max. two months after receiving the complaint. Deadline for solving the dispute on access conditions to physical infrastructure is max. four months with the possibility to extend it if necessary. The responsible authority in Estonia is the NRA.
EL	The role of the National Dispute Resolution Body has been assigned to the NRA (Law 4463/2017, Article 9).
ES	BEST PRACTICE 30 <u>Dispute resolutions in Spain</u> Once a request for intervention is submitted to the NRA, and within the time period specified in the law (10 days since the request), CNMC informs the interested parties about the initiation of the proceedings. In the same administrative act, CNMC almost systematically submits a <u>request for information</u>, whereby the basic information (e.g. copy of the access agreements, public contracts with the public administrations involved, cartographic information of the physical infrastructure, information regarding the negotiations held between the parties before

	submitting the dispute to the NRA, etc.) is requested. This helps expedite the process, and gather all basic information early in the process. The holding of (formal or informal) meetings with the parties is strongly encouraged, in particular in the early stages of the process. In many cases, in particular when dealing with small operators or public administrations, many of the outstanding issues have more to do with a lack of understanding of the law as it stands than with a real access problem. In its Action Plan, CNMC has endeavoured to publish guidelines regarding the way it will handle access and price disputes to physical infrastructure. This type of guidance documents has been proven to be of great help for operators to get acquainted with novel issues such as those raised by Directive 2014/61/EU.
FI	Traficom as the authority responsible for supervising the Joint Construction Act has in many cases used negotiation procedure to find a solution between the parties involved. This is in many cases a faster approach than formal dispute resolution. However, the willingness of the parties involved to negotiate is a prerequisite for this to be successful. In general, when making decisions regarding different aspects of joint construction or shared use of infrastructure, it is important to share transparently common practices and principles of the outcome with the different industries involved.
FR	Les autorités françaises n'identifient pas, à ce stade, de bonnes pratiques, que ce soit en France ou dans les autres Etats membres. L'état des déploiements n'est pas assez avancé pour qu'un retour d'expérience consistant soit en mesure d'apporter de bonnes pratiques à ce stade.
HR	HAKOM is competent authority for resolving disputes over access to physical infrastructure. Pursuant to the Electronic Communications Act, HAKOM is obliged, at the request of any of the parties to the dispute, to make a decision on resolving the dispute as soon as possible, and no later than within four months from the day of initiating the dispute resolution procedure. In almost all cases, HAKOM resolves disputes within a given period of 4 months and timely publishes its decisions.
HU	○ After the impleneted rules of the 2014/61/EU Directive came into force NMHH hold a workshop for stakeholders to familiarise with the new provisions of the law. However, in the first couple of years NMHH did not experience a considerable take up of the possibility offered by the new rules. However, this year (2020) the number of cases inititated by service providers have significantly risen. ○ Opposite to our expections, the claims do not focus on requests to set the level of fees or technical parameters, but on

	procedural problems like operators do not respond to due requests or they set extra requirements for the access seekers. ○ Unfortunately, the possibility provided by the Act that access seekers can launch speedy proceedings asking the NRA to impose fines in case the operators48 providing access are reluctant to cooperate (which enables the subsequent dispute resolution to only concentrate on the core issues of the case) are not exhausted by operators. We **plan to hold workshops** in the future for stakeholders to educate them on the rules and on our experiences. ○ We plan to put emphasis on the practical importance of exploiting the beforementioned possibility **in advance a dispute is launched** to prevent the currently frequent scenario that we have to ask for the answer of the obligated operator subsequently, or decide whether the rejection was justified by law. ○ **Prior consultation** for providers and stakeholders for broadband network deployments Based on Section 98 and 98/A of Act C of 2003 on Electronic Communications providers are entitled to use all the waterways, canals, natural lakes, and the beds and channels thereof, and also the airspace of the country to deploy high capacity communications networks. Instrument of **prior consultation** required by providers with stakeholders – including among others local municipalities – has been inserted into the Act in 2016 under Section 98/A. Before the opening of authorisation proceedings of the deployment of high capacity communications networks its provider and the network design engineer have the opportunity to request consultation with NMHH and other authorities affected in the interest of facilitating the selection of potential sites for broadband networks, and the preparation of full information and documentation for authorization and notification. Such prior consultation can be held in person, by phone or via e-mail. NMHH shall organize the consultation and all the authorities affected are obliged to participate. Typical issues may include, among others ⇒ proper information on the legislation of electronic communications and the deployment of networks, facility and property sharing in force, ⇒ mapping details of authorisation and registration procedures of the planned deployment (breakdown into phases, timescale),

48 According to our experiences service providers do not pay attention to the details enacted in legislation, therefore cases are not prepared appropriately to be ripe for decision by the NRA. We are forced to push the claims back for better preparation, which extends the proceedings, therefore the time limit provided by law for completing the proceedings (within 60 days) has proven to be challenging to be kept.

	⇒ proper information on all the affected authorities, the required documentation, authorisation process, fees and deadlines, ⇒ relevant conditions to submit documentation online. ⇒ The prior consultation has a non-binding outcome, all the information on table are indicative and the authorities do not evaluate fully the submitted documentations.
IE	ComReg has received no requests for Dispute resolution under the BCRR, however it has published the procedures that would be used in the event that a dispute arises. These procedures meet the dispute resolution timeframes in the BCRR/BCRD and would solve issues in the shortest possible timeframe. ComReg will publish its dispute decisions (respecting commercially sensitive information), therefore providing guidance to the parties (or other parties in similar circumstances) on what ComReg has determined to be appropriate conditions and charges for access to physical infrastructure under the BCRR.
IT	In order to identify best practice in our MS having regard to the dispute resolution mechanism, related to access to physical infrastructure and on the functioning of dispute resolution bodies, the following considerations can be observed. According to the national legislative decree no. 33/16, AGCOM (Italian National Authority for Electronic Communications) performs the functions of dispute settlement body (DSB) in all cases provided by Directive 20146/61/EU on measures to reduce the cost of deploying high-speed electronic communications networks (BCRD) Italy implemented the provision of Article 10 of BCRD, (transposed in Article 9 of the Legislative Decree no. 33/16) with AGCOM Decision no. 449/16/CONS. This decision sets terms and conditions to manage a dispute procedure and it includes the procedural rules to open, manage and settle a dispute, providing also the possibility to reach agreements be-tween the parties. According to the national legislation, the timeliness of decisions taken is 2 months (+ number of days allowed to parties involved for negotiations attempts for agreement and/or for request of information) for all the cases settled by AGCOM, including disputes on request of access to existing physical infrastructures; this is an improvement with respect to BCRD provision (4 months deadline in article 3 of BCRD). The disputes referred to the DSB were started by network operators, willing to deploy high speed broadband networks, against the owner of physical infrastructures and regarded the compliance with the article 3 of the BB CRD on “access to existing physical infrastructure” (e.g. ducts, poles or masts, etc). Specifically, the cases submitted to AGCOM concerned the alleged violation of transparency, non-discrimination, fair and reasonable principles for the access to the infrastructures, usable to install fiber optics, owned by the undertakings/public bodies providing a physical infrastructure.

	In accordance with BCRD, the involved parties were network operators (undertakings providing or authorised to provide public communications networks) and undertaking providing a physical infrastructure intended to provide: (a) electricity, (b) transport ser-vices and, specifically, railways and airports, and "public sector bodies" (local authorities). A best practice relevant to underline is the high percentage of the agreements reached between parties during the proceedings; this demonstrates that the strategic role of the DSB in facilitating the amicable settlement of the disputes. AGCOM adopted binding decision including guidelines on pricing for the case of access to existing physical infrastructure. The methodology applied to assess fairness and reasonableness of pricing conditions is different case by case, however the general principle of cost orientation has been applied. In a few cases it was taken in account a market benchmark. In general, as cost-oriented methodology, AGCOM based its decisions on the application of a bottom-up costing approach. For the case of access to in-building physical infrastructure, including optical fiber, AGCOM considered, as a reference for the monthly fee per customer, the regulated access price set for the access to the SMP in-building optical fiber, as recently defined in decision no. 348/19/CONS Transparency of the such information is guaranteed by the publication on AGCOM's web site of all the binding decisions. (see also the description of the proceeding according AGCOM's decision no. 449/16/CONS in the answer to question 17)
LT	Dispute resolution mechanism among undertakings is stipulated by Art. 28 of the Law on Electronic Communications (https://www.rrt.lt/en/legal-acts/laws/) and Rules for Settlement of Disputes between Undertakings and Disputes between Postal Service Providers approved by the Order of the Director of the Communications Regulatory Authority of the Republic of Lithuania (https://www.rrt.lt/en/legal-acts/orders-of-the-director-of-rrt/). These are the following main aspects of dispute resolution mechanism: - disputes on access to infrastructure are investigated by the commission composed of experts of RRT, in the framework of mandatory preliminary out-of-court procedure; - the time frame for the adoption of decision on dispute is no longer than 4 months (with a possibility to extend it due to extraordinary circumstances); - the decision comes into force and is binding to undertakings (parties to a dispute) if the parties do not file their claim to the court; - decision on dispute is made public, except for the confidential information; - RRT issues Rules for Settlement of Disputes between Undertakings and Disputes between Postal Service Providers approved by the Order of the Director of RRT that establish the mechanism for dispute settlement between undertakings; - Art. 28(23) of the Law on Electronic Communications provides for mediation/reconciliation procedures for undertakings: undertakings providing electronic communications networks and/or services have the right to refer to RRT to mediate between and/or achieve a reconciliation of the undertakings in order to resolve a dispute over social relations pertaining to the subject of the Law on Electronic Communications in an amicable manner, without issuing a binding decision. RRT establishes the relevant rules of procedure. However, so far

	none of the market participants have requested this mediation/reconciliation procedure.
LU	the disputes can be submitted to the NRA which renders a binding decision in order to resolve the dispute, taking due account of the principle of proportionality and after having enabled the parties to present their observations in a contradictory manner
LV	Settlement of Disputes is defined by law on High-speed Electronic Communications Network. The electronic communications merchant, the network operator, the owner of a residential house, or the owner of a non-residential building has the right to settle disputes before a court or arbitration court in accordance with the procedures laid down in laws and regulations or before the Public Utilities Commission (hereinafter - the Regulator) in accordance with the procedures laid down in this Law. 1) The electronic communications merchant, the network operator, the owner of a residential house, or the owner of a non-residential building shall submit to the Regulator a written application for the settlement of disputes (hereinafter - the application). The application shall contain the following information: 1) regarding the applicant: for a natural person - the given name, surname, personal identity number, place of residence, or other information which helps to identify the person; for a legal person - the name, registration number, and legal address; 2) regarding the defendant: for a natural person - the given name, surname, place of residence, or other information which helps to identify the person; for a legal person - the name, registration number, and legal address; 3) other parties to the dispute or persons concerned; 4) the description of facts; 5) the subject matter of the dispute resulting from the relevant facts and claim of the applicant; 6) the justification of the application and any other arguments related to the dispute. The Regulator shall examine the application within two months, except for an application regarding disputes in relation to the access to the existing physical infrastructure which shall be examined within four months.
MT	To date we have not yet identified or adopted a best practice for such dispute.
NL	In the last couple of years, the Dutch regulator (ACM) has not handled many disputes about access to physical infrastructure (chapter 5a of the Dutch Telecommunications Act (Telecommunicatiewet). According to the Dutch Telecommunications Act, the regulator must decide within two months on a dispute about chapter 5a of the Dutch Telecommunications Act. This period is shorter than the decision period that applies to regular dispute applications (that decision period is four months). According to the Dutch Telecommunications Act, the regulator is obliged to publish dispute decisions in the Government Gazette (Staatscourant). According to the ACM Institutions Act (Instellingswet ACM), the regulator can also choose to publish dispute decisions on its website. As a rule, the regulator publishes dispute decisions, because the regulator considers it important that other interested parties can take note of the content of the dispute decisions. As a result, the published dispute decisions provide guidance to all interested parties.
PL	Disputes over access to physical infrastructure are resolved by the President of UKE, which is the central body of government administration. Such a solution promotes uniformity and predictability of decisions taken by the authority, unfortunately due to the large number of pending proceedings and their complexity, covering disputes from all over Poland territory, in practice they often last longer than expected 4 months.
PT	Regarding dispute resolution, Portugal had already since 2009 (by DL123/2009) a legal framework similar to the one which resulted from the

	BCRD. In this context, ANACOM acted as a dispute settlement body before the transposition of the directive was completed. Regarding disputes related to access to physical infrastructures, the NRA (ANACOM) sets a binding decision for all parties involved. This decision is published at ANACOM's website and non-compliance constitutes a breach subject to fine. Specifically regarding the provision of guidance to parties on appropriate conditions and charges, the remuneration for access and use of suitable infrastructures held by entities, to whom DL 123/2009 applies must be cost oriented49. As stated in DL123/200950, ANACOM has to approve, by regulation, the methodology applicable for the establishment of the value of the remuneration payable by electronic communications companies in exchange for access to and use of suitable infrastructures. In this sense, ANACOM published in January 2020, a draft regulation (which was submitted to public consultation) on the methodology for the definition of the price of access to physical infrastructures. Regarding infrastructures held or managed by local authorities, the definition of the methodology to be used for the establishment of the value of the remuneration in exchange for the access to and use of the suitable infrastructures and the respective remuneration is the competence of the corresponding bodies, under the terms established in the legal system for local authorities. • Best practices identified in other MS or non-EU countries Regarding the practices identified in other MS, the 2018 WIK Report "Study on Implementation and monitoring of measures under BCRD, the 2017 BEREC report on implementation of the BCRD, BoR (17) 245 and the BEREC report on pricing for access to infrastructure and civil works according to the BCRD, BoR (19) 23, analyse the matter of dispute resolution.
RO	If the network operator refuses to grant access to the physical infrastructure it owns, administers or concessions, or if no agreement is reached with regard to the conditions under which access is exercised, within maximum two months from the date of receipt of a complete access request, either party may address ANCOM for the settlement of the dispute for establishing, where appropriate, the modalities and conditions, including tariffs, in which access to physical infrastructure will be achieved. Prior to the issuance of the dispute settlement decision, ANCOM prepares and submits a preliminary solution to public consultation. Within the consultation procedure, ANCOM publish on its own website the text of the preliminary solution submitted to the consultation and the deadline for the parties and any interested persons to submit comments. The deadline is no more than 5 days from the date of publication on the website, except in cases where, given the complexity of the dispute, ANCOM considers that a longer term is required.

49 according to article 13, paragraph 2 of DL123/2009.

50 by article 19, paragraph 4.

	In order to avoid the occurrence of disputes and to ensure the speedy settlement of the arising ones, the indicative tariffs for access to the infrastructure of network operators, will be published, for certain types of physical infrastructure, by ANCOM President's decision. The indicative tariffs shall be established in compliance with the BCRD provisions. The network operators and the providers of public electronic communications networks shall take utmost account of the indicative tariffs in negotiating the contracts for exercising the right of access to the physical infrastructure.
SE	Dispute resolution at PTS can indeed be resolved within the statutory period of two or four months. However, if PTS´s decision is appealed it can take two years or more before there is a legally binding judgement. A great deal of the cases resolved by PTS has been appealed, as BCRD implementation is a new area of the legal system.
SI	Practices, performed by AKOS as the DSB: - publication of all decisions on AKOS webpage in order to inform the market about the resolved disputes. This gives market players an opportunity to be acquainted with the former decisions of AKOS (it can accelerate their future negotiations regarding access and interconnection). - use of mediation techniques between parties in a dispute in order to reach a consensual solution. Only if and after such a solution can not be reached, AKOS issues a binding decision to the parties. - use of informal way of communication (eg. telephone, e-mail) which speeds up the proceedings - formal explanations and answers to questions from market players within the 15 day period
SK	Dispute settlement body is under National regulatory authority – RU. RU shall settle the dispute regarding access to physical infrastructure no later than two months from the date of receipt of the application. If necessary for the decision, RU shall request a binding opinion from the authorities concerned, in which case it shall suspend the proceedings until the date of receipt of the binding opinion. The authority concerned shall provide RU with a binding opinion no later than one month from the date of receipt of RU's written request for a binding opinion containing the documents and information necessary to issue a binding opinion. The authorities concerned shall be obliged to cooperate with RU for this purpose. In taking its decision, **RU shall take into account the need to create and ensure conditions of effective competition for the benefit of users**. In justified cases, in particular where it is necessary to request a binding opinion from the authorities concerned, RU may extend the time limit for issuing a decision by a maximum of two months. RU shall inform both parties to the dispute of the extension of the time limit. RU shall suspend the proceedings if the proceedings do not concern the obligations arising from the Act on electronic communications, from a decision, from a generally binding legal regulation issued by RU or from an international agreement by which the Slovak Republic is bound. There is no relevant national practice in this regard, as we have not dealt with a dispute in this matter so far.

***Question 19**: Please name identified best practices in your Member State as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Means to incentivise the deployment of electronic communications networks with a reduced environmental footprint, particularly with respect to energy use and related greenhouse gas emissions, including:* *(a) the criteria for assessing the environmental sustainability of future networks and* *(b) the incentives provided to operators to deploy environmentally sustainable networks:*	
Member State	National Best Practice
AT	There exists the general goal to reduce energy consumption of networks with the aim to reduce the influence related to greenhouse gas emissions. Evaluations within the sector are ongoing.
BE	-
BG	
C Y	It may be relevant that all interested EC providers share common excavations and manholes (prototypes agreed between operators and Public Works Department). EC providers share fees for surveys and constructional works.
CZ	N/A – still limited experience – see the question 20.
DE	-
DK	No answer. *<u>Comment:</u> On one hand, Denmark believes this question to be highly relevant. On the other, defining the criteria, and/or agreeing any set of criteria between Member States, is a highly complex technical issue which would require much more time than foreseen in this subgroup. Similarly, for incentives, many different avenues could be pursued, and which of these work will be highly dependent on the local market conditions.*
EE	-
EL	-
ES	Even though it is a priority for the period 2021-2025, the policies are still being developed and no best practice can still be described.
FI	The Ministry of transport and communications is currently finalizing climate and environmental strategy for the ICT sector in Finland. One of the action point identified in preparing the strategy is the need to develop more transparent and comparable measurement and statistics of the sector. The interim report of the strategy is available in English: https://julkaisut.valtioneuvosto.fi/handle/10024/162473
FR	Le gouvernement français travaille actuellement sur des initiatives pour limiter l'empreinte environnementale du numérique. Parmi les mesures, une feuille de route interministérielle est en cours d'élaboration. Elle prévoit des actions centrées sur trois axes: (i) développer la connaissance de l'empreinte environnementale numérique, (ii) réduire l'empreinte environnementale du numérique et (iii) faire du numérique un levier de la transition écologique et solidaire. Pour appuyer ces actions, le gouvernement français a saisi l'Arcep et l'ADEME (Agence De l'Environnement et de la Maîtrise de l'Énergie) pour réaliser une étude dont l'objectif est de qualifier l'empreinte actuelle et à venir des infrastructures de réseaux

	fixes et mobiles et de définir les leviers d'action. D'ailleurs, l'Arcep a également pris des initiatives pour maitriser l'empreinte environnementale du numérique. Elle a lancé une plateforme de collaboration intitulée "Pour un numérique soutenable" dont le programme complet est disponible ici. Un rapport, co-rédigé avec les parties prenantes et destiné à informer les décideurs publics, dont la publication est prévue avant la fin de cette année, marquera une étape importante pour ce travail. L'Arcep est également coprésidente du nouveau groupe de travail d'experts de l'ORECE (BEREC) consacré à la soutenabilité, dont les responsabilités incluent l'étude de l'impact environnemental des réseaux de télécommunications, au sens le plus large du terme. Il pourrait également être envisagé d'envisager la soutenabilité dans le cadre du travail de planification préalable à l'harmonisation de nouvelles bandes de fréquences au niveau européen. **Courtesy translation:** The French government is currently working on initiatives to limit the environmental footprint of digital technology. Among the measures, an inter-ministerial roadmap is being drawn up. It provides for actions focused on three axes: (i) developing knowledge of the digital environmental footprint, (ii) reducing the digital environmental footprint and (iii) transforming the digital sector in a lever for environmental transition. To support these actions, the French government gave a mandate to Arcep and ADEME (French Agency for the Environment and Energy Management) to carry out a study whose objective is to qualify the current and future footprint of fixed and mobile network infrastructures and define the levers of action. Moreover, Arcep continues the work being done via its "Achieving digital sustainability" collaboration platform on the digital technology's environmental footprint (see the complete programme). A report, co-authored with the stakeholders and designed to inform public policymakers, scheduled to be published before the end of this year will mark an important milestone for this work. Arcep is also co-chair of the new BEREC experts working group devoted to sustainability, which responsibilities include studying the environmental impact of telecoms networks, in the broadest sense of the term. It could also be envisaged to consider sustainability as part of planification work prior to the harmonization of new frequency bands at European level. It could also be considered to consider sustainability as part of the planning work prior to the harmonization of new frequency bands at European level.
HR	• joint multi-operator sites with equipment less sites • pushing operators to buy electrical energy which has green certificates (renewable energy certificates)
HU	○ No best practices identified in Hungary

IE	In furtherance of the Irish Government's Climate Change Adaptation Plan for the Communications Sector (which itself comes under the umbrella of the National Adaptation Framework), the Department of the Environment, Climate and Communications is currently in the process of engaging with industry, industry representative bodies, and communications network operators at home and abroad to identify best practices being used and/or being planned for roll-out in relation to the above mentioned areas. As part of ComReg's Call for Inputs on Connectivity and Decarbonisation (ComReg 19/126), ComReg identified that the French telecommunications regulator (Arcep) has begun actively working in this area. In April 2020, Arcep began an information gathering campaign on the environmental impact of telecoms networks and devices. The indicators collected relate to the greenhouse gas emissions produced by the main telecommunications operators on their networks and to the electrical consumption of the boxes used by their customers.
IT	The installation methodology through the so called "Microtrincea" (micro trench) constitutes a solution to the need to install networks with low environmental impact. To this aim, a recent bill, Law Decree no.76/2020, has intended to promote and facilitate this type of installation's technique, thus leading to a reduction in times and fuel consumption of the machines used during the execution of the works. However, the first applications of the new legislation concerning the "Microtrincea" have caused some resistance from local authorities. For this reason, in order to recognize excavation techniques with low environmental impact as the preferred technologies to be used, Italian centralized authorities are engaged in an information campaign aimed at leading local administrations to adapt their acts to national legislation.
LT	We have included in our national 5G roadmap measures for competitive authorities to evaluate and offer operators possible integrated solutions (including alternative electricity sources) for the supply of electricity to 5G systems. In Lithuania, there are strict environmental restrictions on installing networks on forest land and environmental protection areas.
LU	-
LV	There isn't any special practice regarding electronic communications network reduced environmental footprint in Latvia, the general practice is applied.
MT	-
NL	From a "greener network" perspective we believe operators should be stimulated to use more renewable energy and make more use of Artificial Intelligence in their network optimization. A good example of sustainable deployment is the pilot that one of the Dutch operators has just started for the deployment of fibre, using 90% recycled plastics for the pipe and a smaller volume. We need more initiatives like these for a greener, digital Europe.
PL	There are no specific incentives for operators regarding explicitly the environmental footprint of future networks – the transition from energy-consuming copper networks to FTTx networks in Poland is ongoing based on existing procedures. Replacing the existing copper internet networks with fiber-optic networks results in a several-fold reduction in the energy consumption of telecommunications networks, in particular, it reduces the amount of energy needed to transmit the same data volume several times (a five-fold reduction according to estimates), the production of which in Poland is based on coal. 74% of the dismantled copper cable components can be reused for non-telecommunications products and services, and the remaining components are recycled.

	In terms of the increase in CO2 emissions in connection with the implementation of the 5G network, it should be noted that along with the rapid development of information and communication technologies, the consumption of electricity also increases. In order to meet the requirements of increased efficiency, better data transmission and better quality of services for next-generation networks, including 5G, there is a need for the development and implementation of energy-efficient solutions by telecommunications equipment manufacturers. It is also an attempt to reduce CO2 emissions by reducing energy consumption in wireless networks, i.e. creating the so-called "Green communication". It should also be noted that the available studies indicate an increased efficiency of the 5G network (up to 100 times) compared to the 3G network. A review of trends in the field of wireless communication in the last decade, which indicated a shift towards green communication for networks, has been described in detail, inter alia, compiled by Akshita Abrol and Rakesh Kumar JHA "Power Optimization in 5G Networks: A Step Towards GrEEn Communication". Operators however may be granted subsidies for solar power installations (which may power data centers).
PT	(a) the criteria for assessing the environmental sustainability of future networks and No environmental assessments have so far been applied as a requirement for, or to incentivise, the deployment of electronic communications networks aiming at reducing the corresponding environmental footprint. Nevertheless, ECN operators are voluntarilly committed to contribute to the preservation of the environment and improve their performance, assuring the compliance with the environmental legislation and the environmental sustainability of their networks in order to reduce the environmental footprint, particularly with respect to energy use and related greenhouse gas emissions. In the future, operators also expect to lower their operational energy consumption per unit of data traffic (MBs) and greenhouse gas emissions, and to increase their consumption of green energy. As examples of this: • One operator was ranked the 5th best Telecommunications Company in Europe in terms of Sustainability accordingly with VigeoEiris ESG International Ranking, which reflects a number of best practices and initiatives implemented especially in the environmental area, over the last few years. • Another as founding member of the ETNO Sustainability Working Group, subscribes the ETNO Environmental Charter51 and its main policy recommendations. In this sense, the assessment of the environmental sustainability of future networks could be done in terms of the use of several criteria such as: operational energy consumption, gas emissions and waste, and green energy, in the range, from the production and installation of equipment by suppliers to the operation of the networks and the use of products and services by customers. However, since we have to consider different types of network (fixed, mobile), configuration, Member-State and factors that impact the use

51 https://www.etno.eu/articles/61-etno-corporate-responsibility-charter.html.

	of grid energy differ greatly (climate, regulation, mix of generations of technologies), a fixed KPI value or a benchmark level that assumes a one-size-fits-all may not be the most appropriate approach to assess the environmental sustenability of the networks operators. (b) the incentives provided to operators to deploy environmentally sustainable networks: • Best practices identified in your MS In the sense that ECN based on optical fiber technology contribute to lower the power consumptions comparing to legacy networks (based on copper), with subsequent benefits in terms of environmental impact, the Portuguese NRA (ANACOM) has been involved in national policies that likely limit the environmental impacts of the electronic communication networks and the digital sector. ANACOM has contributed to an increased (fiber based) VHCN coverage of the Portuguese territory by the network operators and to a progressive adhesion to such networks by the end-users, either through: • Cooperation with the Portuguese Government in the launch of five public tenders for deployment of NGA networks in rural areas; Information regarding the five public tenders launched in 2009 for the installation, management, operation and maintenance of high-speed electronic communications networks (next generation networks) in rural areas is available at ANACOM website: https://www.anacom.pt/render.jsp?categoryId=332482&languageId=1. • Cooperation with the Portuguese Government in the draft of the Decree-law no. 123/2009 of 21st of May, which foresees the implementation of symmetrical regulation of access to physical infrastructures (ducts, poles, towers, masts) with the purpose of rolling out ECN networks; Decree-law no. 123/2009 of 21st of May, is available at ANACOM website (the English version available is not an official translation of the law): https://www.anacom.pt/render.jsp?contentId=975261&languageId=1 Imposition of regulatory measures of access to ducts since 2004 to the incumbent operator concessionary of the public telecom network/ and since 2009 as a remedy imposed to the operator identified with Significant Market Power (SMP) in the context of the former wholesale market 4 (now wholesale market 3a) analysis. Within those physical infrastructure accesss measures/remedies, should be highlighted the ANACOM decisions regarding Reference Duct Access Offer – RDAO and Reference Pole Access Offer – RPAO, which are available at ANACOM website: https://www.anacom.pt/render.jsp?categoryId=379339&languageId=1. All these regulatory contributions and measures imposed by the NRA (ANACOM) contributed to lowering the environmental impact of ECNs,

	by fostering the sharing of existing physical infrastructures (ducts and poles) able to accommodate such networks, thus reducing the carbon footprint related with civil engineering works and traffic congestion in roads. In one of the first ANACOM decisions related to the access to ducts of the incumbent operator (decision of 17th July 2004 which implemented the minimum elements of the RDAO) it was mentioned the following: "*In many cases, the entities that offer electronic communications networks and services accessible to the public are facing difficulties in doing further investments in ducts in certain geographic areas, in an economically efficient manner, existing also physical limitations to the feasibility in investing in ducts, the latter being conditioned, on certain conditions, by restrictions of occupation of the underground due to saturation of the same or, further more, by municipal restrictions.In this context, investment in ducts should be compatible with economic efficiency criteria, avoiding any inefficient duplication in infrastructures or inconveniences for citizens and economic activities due to the frequent and extensive realization of soil and subsoil works, with consequent disturbances at traffic and territory planning level, apart from the repercussions of environmental order arising out from it*". (now highlighted). Regarding wireless networks, a good practice in the case of installing antennas in historic municipal areas, is to encourage the promoters of the installation to have to present all the elements necessary to assess the impact of the infrastructure (namely by the Directorate General for Cultural Heritage). • Best practices identified in other MS or non-EU countries ETNO contribution to the Green Deal debate52 presents facts and figures about the action of the telecommunications industry to reduce its footprint, and reveals data on how telecommunications operations are becoming increasingly efficient.
RO	There is no relevant national practice in this regard.
SE	The Radio Spectrum Policy Group (EUR-Lex - 32019D0612(01) - EN - EUR-Lex (europa.eu) has identified the need to focus on spectrum policy aspects which are closely related to the efforts of ensuring climate neutrality and is currently working with the issue. The result of this work should lead to further actions from MS and the Commission. Sweden participates in this work. • Best practices identified in other MS or non-EU countries - The Ministry of Transport and Communications in Finland has published an Interim report for a climate and environmental strategy for the ICT sector in Finland. The work for the final report is in progress. - BEREC will have established a new Ad Hoc Working Group on Sustainability by 2021. Currently, there is already an Expert Networking Group

52 https://www.etno.eu/library/positionpapers/409-etno-green-deal.html.

	on Sustainability, who have started to look upon internal sustainability within the work of BEREC Office, with the aim to reduce BEREC's own environmental impact. The group has also started to touch upon the external dimension of sustainability, i.e. the issue of the environmental sustainability of the telecommunication sector. As BEREC aims to include sustainability as a key element in its strategy and annual work programmes, BEREC and the European Commission will continue to discuss the matter in the future.
SI	From the market regulator perspective - the NRA has no information on this area (the Ministry of the Environment and Spatial Planning is responsible for this area in our country, and we couldn't obtain more info), partly because the electronic communication infrastructure is considered to be a smaller energy consumer compared to other networks. Generally, we can mention the cooperation of NGOs as a side party to the building permit proceedings.
SK	No best practices have been identified in this respect so far.

***Question 20**: Please name identified best practices in your Member State as well as best practices you have identified in other Member States or non-EU countries with regard to the following aspects:* *Ways to perform and take account of the results of an environmental assessment according to Directives 2001/42/EC (SEAD), 2011/92/EU (SEA) and 92/43/EC (Habitat) at different stages, including at the stage when authorities prepare the framework for future development consent of projects.*	
Member State	National best practice
AT	As the installation of all telecommunications infrastructure on local level are seen as " low threshold" projects concerning financial investment, the roll-out of telecommunications infrastructure is not within the obligation for an environmental assessment in accordance with the mentioned directives. The issue is mainly dealt by the respective legislation concerning building law, nature conservation, road traffic and others. See also Q1.
BE	It is our view that the national award procedures for usage right do not entail environmental assessment under the mentioned directives. Belgium points out that the regulatory framework for the granting of frequency bands has been defined at a European level. The European Electronic Communications Code and the implementation order (EU) 2019/235 in particular define the framework in which the Member States have to allocate the frequency bands for the roll-out of the 5G network. Member States have little or no discretionary power in this. An operator will have to use existing infrastructure (transmitting antennas) or, if necessary, will have to construct additional infrastructure and then determine how he will use this infrastructure (e.g. which radiation in combination with which antenna or site) before actually starting to use the usage right. If necessary, the operator will then have to apply for the necessary regional permits (building permits and environmental permits) and certificate of conformity before actually exercising his usage right. Such projects, and therefore the permits accompanying these projects, fall completely outside of the federal competence. Environment and health issues (including the protection against radiation) are regional powers. The roll-out of the new technology, as well as the use of a new band by an operator, does not at all affect the obligation to abide by the regionally defined radiation standards at all times. It is up to the regions to decide whether an environmental assessment according to Directives 2001/42/EC (SEAD), 2011/92/EU (SEA) or 92/43/EC (Habitat) is necessary at the moment of the determination of the regional standards or regulation. Regarding permit granting for antennas, in the Flemish Region: • When applying for a permit the local environmental quality is considered. An environmental impact assessment is generally not made for a single antenna application, as local general binding rules are sufficiently strict to ensure compliance with environmental quality. If a structure is in a Habitat area, the local nature and forest agency is an advisory body for the competent authority. • It seems by the way to be very exceptional to require an impact assessment for environmental effects from civil works for digital infrastructure since there is many chances to use existing public infrastructure to realize such projects in Flanders. Up to now, Only Belgium and France seem to be confronted with this issue. The provisional licences which the BIPT has given on 15/7/2020 for the band 3600-3800 MHz are currently challenged in court. One of the main arguments is that there was no environmental impact assessment as

	allegedly required by the SEAD-directive.
BG	
CY	N/A
CZ	The Czech Republic is in the beginnings of formulating the next generation of practices for evaluating environmental impact of wireless networks' deployment and operation, focused particularly on climate protection. We are aware of various challenges, such as availability of reliable data, the fact that negative environmental impacts of a network's operation may be outweighed by positive environmental impact of network services thus rendered, or the need to reflect the environmental impact of the broader ICT segment. We share the conviction that there should be a common approach to this issue across the Union, based on a framework that can be applied early on in the process of network rollout or upgrade (i.e., when the networks operators present their plans to build or upgrade network facilities). We are monitoring the summaries of available measures, such as the recently published Finnish report on environmental impact of the ICT sector,2 and actively participating in the work of RSPG Sub-group Climate Change. Based on these experiences, we are sceptical of the possibility of having an operational European framework in the immediate future. That notwithstanding, the Czech Republic fully supports the effort to keep exchanging ideas and best practices and progressing toward a shared European framework.
DE	The equipment of individual existing mobile communications masts with 5G installations is normally not subject to an environmental assessment. As for the new construction of a large number of 5G-ready mobile communications masts and the provision of universal coverage, carrying out an environmental assessment is currently not the norm either. In both cases, this is without prejudice to the cumulation rules of the Environmental Impact Assessment Act (UVPG). At present, the Federal Government does not have any information concerning best practices for the performance of Habitats Directive compatibility assessments in connection with the deployment of high-capacity networks. If this deployment were to involve the adoption of a plan or the authorisation or execution of a project within the meaning of Article 6(3) of the Habitats Directive, a case-by-case examination in accordance with Article 34, possibly in conjunction with section 36 of the Federal Nature Conservation Act would be required. At the time of granting rights or issuing licences for spectrum use, the prerequisites for the application of the said directives are not fulfilled. Consequently, at that stage no environmental assessment is needed.
DK	In Denmark, there is horizontal implementation of the habitats directive. Projects within the scope of the Environmental Assessment Act can simultaneously fall within the scope of the Administrative Order on Habitats, which stipulates a requirement of an assessment of an assessment of significance and in some cases an assessment of consequences. A permit in accordance with the Environmental Assessment Act cannot be granted if the rules in the Administrative Order on Habitats hinder this. The assessment of the project's impact on the area must be described in the environmental consequence report. In the permit that must be granted pursuant to the rules on environmental assessment of concrete projects, necessary conditions are stipulated to ensure that the project cannot damage the Natura 2000 area or protected species.
EE	N/A
EL	No response.
ES	No practices are known in this regard.
FI	The national act implementing the directives 2001/42/EC and 2011/92/EU (the Act on the Environmental Impact Assessment Procedure) does not require an environmental impact assessment procedure for the granting of rights of use for radio frequencies or the construction of networks. Annex 1 of the Act lists the projects where the assessment procedure is necessary. Directive 92/43/EC has been implemented in

	Finland by the Nature Conservation Act. The Act does not consider that fauna or flora would be endangered by the construction of radio networks. Construction projects (e.g. base station masts) require a building permit and the building permit procedure assesses the suitability of the project for its environment.
FR	La France considère que la procédure d'attribution du spectre radioélectrique pour le déploiement des réseaux mobiles ne requiert pas une évaluation environnementale préalable car cela ne peut être considéré comme un plan ou programme selon l'interprétation de l'article 2 de la directive SEA. Une association environnementale et deux associations de lutte contre les ondes électromagnétiques réclament auprès des autorités françaises la mise en oeuvre d'une évaluation environnementale préalable en argumen-tant le contraire pour les textes régissant l'attribution de la bande de fréquences 3,4 - 3,8 GHz pour la 5G. L'affaire est actuellement devant le Conseil d'Etat. Voir aussi la réponse de la question 19. **Courtesy translation:** France considers that radio spectrum award procedure for the deployment of mobile networks does not require any environmental assessment before-hand as this cannot be considered as a plan or a program according to the interpreta-tion of article 2 of the SEA directive. An environmental association and two associations fighting against electromagnetic fields exposure called on the French upper court for carrying out a prior environmental assessment arguing the opposite for texts governing the award of the 3.4 - 3.8 GHz frequency band for 5G. The case is currently in court. See also reply to question 19.
HR	SEA Directive is implemented in the Environmental Protection Act and environmental assessment is obligatory for strategies, plans and programs which are prepared for telecommunications on national, regional and local level, including those financed by EU funds. For all new electronic communication infrastructure facilities that will be built within a projects in the Natura 2000 area (e.g. cable sewerage and street cabinets for accommodation of network equipment, antenna masts) operators need to obtain approvals for nature protection, through the process which identifies the likely impacts upon a Natura 2000 site, and considers whether these impacts are likely to be significant (screening), in accordance with Nature Protection Act. Neither NRA, responsible for spectrum award procedure, nor mobile operators are obliged to conduct any environmental assessment or to conduct any environmental assessment as a general requirement for the spectrum award. HR considers above mentioned practice well balanced between satisfactory level of environment protection and successful network deployment.
HU	No best practices identified in Hungary.
IE	The Department of Housing, Local Government and Heritage (DHLGH) has issued a number of Guidelines under section 28 of the Planning and Development Act 2000, which planning authorities and the An Bord Pleanála are obliged to have regard to in the exercise of their planning functions. Guidance documents in relation to the above mentioned Directives can be found at the links below. The purpose of the Guidelines is to provide practical guidance for planning authorities and the Board (Competent Authorities) on legal and procedural issues and matters of interpretation arising from the amended Directives, which should result in greater consistency in procedures adopted by competent authorities in the planning system. The Guidelines, for the greater part, address key areas of each planning stage such as:

	• Pre-application stage
	  ○ Screening
	  ○ Scoping
	• Application Stage
	  ○ The EIAR
	  ○ Non-technical Summary
	  ○ Competent experts
	  ○ Reasonable alternatives
	
	• Environmental factors
	  ○ Human health
	  ○ Land
	  ○ Climate
	  ○ Risk of major accidents and disasters
	  ○ Baseline scenario
	• Consultations and the EIA Portal
	  ○ Consultations with prescribed bodies
	  ○ Informing and consulting the public electronically
	  ○ EIA Portal and Competent Authority websites
	• The Assessment
	  ○ Examination/Assessment/Reasoned Conclusion
	  ○ Likely significant effects
	  ○ Cumulative effects
	
	• The Decision
	  ○ Monitoring conditions
	
	Guidance Documents:
	SEA Directive:
	Implementation of SEA Directive (2001/42/EC): Assessment of the Effects of Certain Plans and Programmes on the Environment Guidelines for Regional Authorities and Planning Authorities (2004) – currently being updated.
	EIA Directive:

	Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment August 2018 Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) (2017) Habitats Directive: Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities (2010) currently being updated.
IT	The SINFI (Federated national information system for infrastructures) is also used by public administrations to facilitate the impact assessment procedure of projects on the territory and allow for a rapid execution of the authorization procedures, by entering data relating to restricted areas.
LT	As concern directive 92/43/EC: It is implemented via Order of the MoE on Determination of Significance of the Effects of Implementation of Plans, Programs and Proposed Economic Activities on "Natura 2000" sites. This order contain a questionnaire for determination of significance and criteria, by employing which, institution responsible for organization of protection and management of protected areas can determine if implementation of a plan, program or proposed economic activity (separately or in combination with other plans and programs) might have significant effects on "Natura 2000" sites and if therefore strategic environmental assessment of such a plan or program or environmental impact assessment of proposed economic activity shall be carried out. New developments are not prohibited a priori within or in vicinity of "Natura 2000" sites. New projects, plans and programs possibly affecting "Natura 2000" sites are judged case by case. Institution responsible for organisation of protection and management of protected areas: In the SEA process: – State Service for Protected Areas under MoE. In the EIA process: 1. If proposed economic activity falls under the scope of Law on EIA - State Service for Protected Areas under Ministry of Environment. 2. Small scale activities which are not under the scope of Law on EIA – Administration of particular protected area. **Decisions of these institutions are legally binding!** To avoid duplication (double assessment) – all projects which fall under the scope of Annex I of the Law on EIA are not assessed according to this ministerial order. Such objects are assessed during ordinary EIA procedure paying particular attention to "Natura 2000" conservation objectives.
LU	Response: /
LV	There isn't any special practice regarding electronic communications network in Latvia, the general practice is applied.
MT	In Malta, the national radio spectrum award procedures, for the time being, do not entail any environmental assessment under the national law implementing the abovementioned Directives (neither by the competent authority nor by the mobile network operators themselves).
NL	To our understanding, there is currently no obligation in the Netherlands to do an environmental assessment according to the mentioned

	directives when issuing licenses for frequency spectrum or antenna installation.
PL	**These are not the best practices but we want to share the information below.** Installations that emit electromagnetic fields have been identified, in the light of national legislation, as having significant environmental impacts, although this does not result from EU regulations (such installations are not included in Annexes I and II of Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment, i.e. in the group of projects that should be assessed from the point of view of their effects in the environment). The introduction of an obligation to carry out an environmental impact assessment for these installations has resulted in discrepancies in interpretation and application of the provisions of the construction law. The procedure related to an environmental impact assessment for a planned project is generally carried out at the stage of issue of the environmental constraints decision for the project. As a part of the environmental impact assessment for a project, the risk of serious accidents and natural and construction disasters, the required scope of monitoring, the natural compensation, and the possibilities and methods of prevention and reduction of the negative impact of the project are determined, analyzed, and assessed. The indirect impact of the project on the environment, the population, the health and living conditions of people, monuments, material assets, and landscape are also analyzed and assessed. On the other hand, in the case of radio-frequency electromagnetic fields, the scientific uncertainty about their harmfulness is too high. In practice, this means that, at the stage of the environmental constraints procedure, the owner bases its documentation on research showing no negative impact on the environment and people, while other parties to the proceedings (even later, at the administrative stage) or the opponents of the technology use research showing harmfulness of either electromagnetic fields or the technology itself. Thus, we are going back to the issue of zero safety and the lack of consensus concerning the legislation applicable to the electromagnetic field. Direct and indirect impact should be based on actual damage, i.e. the emission of pollutants (keep in mind that emission of electromagnetic fields is not pollution), as well as on actions consisting in removal of existing trees and shrubs, interference in natural habitats of protected animals, etc. This is necessary in order to properly determine the methods of prevention and reduction of negative impacts or the need for environmental compensation. However, no person in the world is able to determine the measurable negative effects of the impact of radio-frequency electromagnetic fields and to identify specific measures to prevent and minimize this impact, not to mention environmental compensation. This brings us back to the past and to the Soviet philosophy related to determination of the levels of permissible electromagnetic fields. Moreover, as already indicated, in the light of Polish law, in particular environmental protection law, emission of the electromagnetic field is not considered as pollution, and yet is subject to specific inspection and monitoring, and a procedure of notification to environmental-protection authorities. At the same time, the permissible levels of general public exposure to the electromagnetic field should not be exceeded: otherwise, the Chief Inspector of Environmental Protection is required to keep a register of places where exceeded levels have been identified. Less strict regulations apply in Poland for example to smog levels – a widespread problem in our country – which have a documented serious impact on human health. As a result of such perception of the issues related to radio-frequency electromagnetic fields, even those devices (e.g. antennas) that should not be subject to the construction law (because they are not construction equipment), must undergo the procedure of notification of their installation as construction work (except for those installed in Natura 2000 areas and on monuments which require a building permit); in addition, such projects are put in question by opponents of new technologies and people who are concerned about their health or loss of value of their property. Due to public pressure, issues that legally are subject to the environmental protection law are subject to the construction law. In particular, this applies to modification of the settings of technical

	equipment (antennas) that affect e.g. exposure in places accessible to the public or to replacement of devices with new ones in the event of their wear or failure. Common-sense would make it impossible to consider such activities as construction work; however, there are many cases brought before administrative courts, which often agree with the position of the applicants. For all of these reasons, it can be concluded that not only the investment project process for mobile telephony base stations but also the later stage of their operation are subject to excessive, unreasonable legislation.
PT	In the deployment phase, operators have to address the municipalities, which are entitled to authorise the installation and operation of the support infrastructures for radiocommunication stations and respective accessories, as well as the conditions inherent to the protection of the environment, cultural heritage and the protection of the urban or rural landscape. It is also the responsibility of the Municipalities to promote a consultation to the entities that, under the law, must issue an opinion, authorisation or approval for installation of the infrastructures (DL11/2003, Art. 6). Furthermore, through a simplified online platform (machine-to-machine), operators license their network and, in that process, inform ANACOM about the location and characteristics of the stations. This information allows ANACOM to ensure compatibility with other spectrum users as well as, if required, for monitoring the compliance with the exposure to electromagnetic radiation limits. Specifically regarding Climate Change and its relation with the deployment of ECN its worth to mention the: • Resolução do Conselho de Ministros n.º 130/2019, de 2 de agosto, which approved the "Programa de Ação para a Adaptação às Alterações Climáticas" • Relatório da Estratégia Nacional de Adaptação às Alterações climáticas (ENAAC) 202017 , coordinated by APA18, which benefit from the cooperation of ANACOM WG. At the spectrum awards procedure phase, the practice has been not to entail an environmental assessment. One of the reasons is that, at this stage, there is no specific knowledge of the network, e.g. on the location of stations, which would be essential for this assessment. Environmental regulations may apply to the phase when operators are rolling out their networks. This practice was referred to the COM in our reply to the questionnaire addressed to the RSPG members on the 23 June 2020 with the title "Questions for Member States (Draft of 23 June) in relation to the relevance of environmental aspects in mobile communications spectrum awards".
RO	There is no relevant national practice in this regard.
SE	Refers to reply to Q19: The Radio Spectrum Policy Group (EUR-Lex - 32019D0612(01) - EN - EUR-Lex (europa.eu) has identified the need to focus on spectrum policy aspects which are closely related to the efforts of ensuring climate neutrality and is currently working with the issue. The result of this work should lead to further actions from MS and the Commission. Sweden participates in this work.
SI	As explained, in Slovenia majority of electronic communications networks elements do NOT require a granted building permit. Nonetheless, if the facility, for which the acquisition of a building permit is prescribed, is a facility with environmental impacts, the procedure for issuing a building permit and the environmental impact assessment procedure under the law governing environmental protection shall be combined (integrated procedure). In an integrated procedure, a building permit is issued, which combines a decision on meeting the conditions for issuing

	a building permit and an environmental permit.
SK	Based on the written statement of Ministry of Environment of the Slovak Republic “Under the current wording of the Impact Assessment Act, it is not possible to carry out a "single assessment" in which a strategic assessment (SEA) and a specific project assessment (EIA) will be carried out. These are two separate procedural procedures that cannot be replaced by one. However, in the framework of such assessments, we recommend performing other “partial” assessments performed in accordance with special regulations (such as appropriate assessment, primary assessment, HIA, etc.). No best practices have been identified in this respect so far.
EEA Member States	National best practice
NO	In an upcoming white paper that will present the Norwegian Government’s policy and ambitions on electronic communication and the electronic communication sector to the Norwegian parliament, the Government has specific focus on climate and environmental aspects of electronic communication, and how the sector's climate and environmental footprint can be reduced. The Ministry of Local Government and Modernization has asked the industry and market players on their views on the different topics. According to plan, the white paper will be presented in 2021. At this point Nkom has also started working on some assessment on what role spectrum and spectrum management may play in environmental sustainability and, amongst others how regulation may encourage sustainability, and this work will proceed. Nkom also participates in the sub-group on the role of radio spectrum policy to help combat climate change.

***Question 21**: Specific measures to incentivise substantial investments by radio spectrum users in the roll-out of 5G networks when authorising radio spectrum in the 700 MHz, 3.4-3.8 GHz and 24.25-27.5 GHz frequency bands. In particular, measures with the following objectives should be mentioned:*

(a) promoting adequate reserve prices which reflect the minimum levels of fees for rights of use of radio spectrum;
(b) avoiding spectrum scarcity by ensuring the assignment of the full amount of radio spectrum harmonised at Union level;
(c) providing in a non-discriminatory manner the possibility that fees for rights of use of radio spectrum are paid in instalments within the period of those rights;
(d) using an individual authorisation regime for the 24.25-27.5 GHz frequency band which promotes its timely use including, in particular, one that is based on fast-track administrative procedures (for example "first-come-first-serve") when applied to geographically limited rights of use;
(e) combining financial incentives with obligations on, or formal commitments of spectrum users to accelerate or to expand high-quality wireless coverage;
(f) providing, subject to competition law, the possibility for the sharing of passive and active infrastructure, as well as for joint roll-out of infrastructure that relies on the use of radio spectrum.

Member State	National best practice
AT	a) First and foremost it is important to underline that market price based reserve prices are an important design element of spectrum auctions in order to ensure an efficient outcome of the auction. If there is a rather low number of participants in the auction reserve prices substantially below market value can produce inefficient outcomes because bidders may then have a stronger incentive to behave strategically. Efficiency is one of the key objectives for designing spectrum auctions. On the other hand, reserve prices should not be excessive. Otherwise, there is a risk that the auction ends with unsold spectrum and/or operators pay an unjustified high price (eg higher than the opportunity cost). TKK only sets market price related reserve prices if the expected market value for the spectrum is higher than the spectrum usage fee which is based on administrative cost and if there is a risk that bidders engage in strategic bidding. In case TKK sets market price related reserve prices TKK use national and international benchmarks. The benchmarks are adjusted to consider national circumstances by taking into account factors such as market size, purchasing power parity or differences in license durations in order to make the benchmarks comparable. If this exercise is conducted with appropriate caution (only use benchmarks of well-designed competitive auctions that reflect the true market value of incremental spectrum) and if rather conservative parameters are chosen, there is almost no risk that the reserve price is not at the minimum level, provided that market based reserve prices are needed in order to ensure an efficient outcome in the auction. b) It has always been one of the top priorities of the Federal Ministry of Agriculture, Regions and Tourism and the Regulatory Authority to provide the industry timely with sufficient spectrum to avoid artificial spectrum scarcity. The authorities closely monitor the market development, regularly conduct consultations and publish an updated Spectrum Release Plan that includes a timetable including award procedures planned that are planned

	in the midterm (5 years). The key objective of that Spectrum Release Plan is to avoid artificial spectrum scarcity, to prioritize the award of those bands that are most useful to the industry and to provide all parties (operators, regulator, etc) with planning reliability. One guiding principle is to have spectrum awards regularly on shorter time intervals instead of having big bang auctions at rare intervals. This allows operators to adjust their spectrum holding to the market development and their individual demand. For the Austrian Mobile Industry the 3.4-3.8 GHz band and the 700 MHz band (together with the 1500 MHz supplementary downlink band) were the key bands for their 5G strategy. Therefore, TKK prioritized these bands in the current Spectrum Release Plan. These bands have been successfully awarded in 2019 (3.4-3.8 GHz) and in September 2020 (700 MHz, 1500 MHz and 2100 MHz renewal). It was of particular importance for TKK to award the entire 3.4-3.8 GHz band as soon as possible and to enable mobile network operators to acquire at least 100 MHz of contiguous spectrum. At the same time the award was designed to balance the interest between mobile network operators and existing users in the band (mainly regional broadband operators) which had a fair chance to acquire spectrum. It will take a few years from now on that these new spectrum resources will have been utilized. The 26 GHz band will be part of the next Spectrum Release Plan and the next spectrum award and will be awarded long before spectrum scarcity is seen in Austria. c) This year a change of the Austrian Telecommunications Act (§ 55 Abs 10b TKG 2003) created the option of deferral or payment in instalments under certain conditions. The change in law was a response to the economic risk caused by the pandemic situation at the time of the award of 700/1500/2100 MHz spectrum. If the total frequency usage fees that must be paid in a frequency allocation procedure are more than 50 million euros, the addressees of the notification have the option of obtaining instalment payments or deferring their respective claims (up to 12 months). The amount of the interest charged for deferred payment must be set at 1% above the current base rate announced by the National Bank of Austria per year. d) The propagation characteristic of the 26 GHz band is completely different to the other bands that are used by the Mobile Industry. There are a wide variety of business models and usage types possible. Some of them are well supported by nationwide usage rights others are better supported by geographically limited or even local usage rights that might be issued by means of a fast-track administrative procedure (light licensing). Furthermore, the use of a spectrum sharing model might also be helpful to ensure an efficient use of spectrum. Each regime has advantages and bear risks such as the underutilization or sterilization of spectrum in significant parts of the country, an assignment of usage spectrum rights not to the most efficient users, a lack of investment security, a fragmentation of spectrum or undefined interference conditions between competing users. The Federal Ministry of Agriculture, Regions and Tourism and the Regulatory Authority conducted a consultation on the 26 GHz band in 2019 to learn more about future use cases. The result of the consultation was that there is a lack of demand and viable business models in the short term. The feedback in the consultation was by no means sufficient to develop an efficient licensing model. However there exists a legal framework for testing and getting timely limited licences in our law (TKG §4 – “Ausnahmebewilligung zur technischen Erprobung”) where operators, industry and everyone who is interests in testing radio applications (not restricted to 5G) in any frequency band can test

	use cases without further obligations, as long as the risk of interference can be estimated to be manageable. We see in the field of 5G, especially from certain industry stakeholders, an interest and some ongoing test cases. For the upcoming consultations we await further input especially concerning the upcoming licensing model in 26 GHz. Overall it is key that regulators have a good understanding of demand in order to setup the most suitable authorisation model. For this reason RTR in cooperation with BMLRT is about (in connection with the new Spectrum Release Plan) to start a second consultation on usage models and on a suitable authorisation regime for that band. The authorisation model should as far as possible cover all relevant usage forms for electronic communications services. e) One of the main objectives of the 2nd 5G auction in Austria, which included the 700 MHz band was to improve coverage, especially in challenging areas. That are rural areas that are unserved or underserved and economically hard (not profitable) to cover. Coverage obligations in spectrum awards are a key mechanism to improve coverage in such challenging areas. There is a trade-off between proceeds in the auction and ambitious coverage obligations. The higher the cost caused by coverage obligations the lower the value bidders attach to spectrum. Regulators can use this trade-off to financially incentivize bidders to expand their networks in challenging areas where operators would not invest under normal market conditions by making spectrum cheaper. Normally coverage obligations are directly bound to specific spectrum blocks. The buyer of the spectrum block is obligated to fulfil the coverage obligation that is attached to the block. In case of very ambitious coverage obligations this approach carries the risk that the award could end with an undesirable outcome. For example, the auction could end with unsold spectrum if the cost that is caused by the coverage obligation exceeds the value that operators attach to the spectrum block. In order to mitigate that risk, RTR invented an incentive auction system. The auction model is a combination of a forward and a reverse auction. The forward auction is designed pretty much the same way as normal spectrum auctions. In the reverse auction the successful bidders of the forward auction have the possibility to earn a price discount on the spectrum fee by accepting coverage obligations. The price discount and the level of the coverage obligation is not fixed, it is determined in a well designed market process which fosters competition among operators. Bidders offer the level of coverage they are willing to provide along with the discount. A big advantage of this approach is that bidders could control the risk that is connected with comprehensive coverage obligations. Dependent on the design objective the winners determination process selects the bids with the lowest cost and/or the highest level of coverage as winning bids. This approach requires the accurate identification of underserved areas and the identification of a scalable and to certain extent homogenous coverage target. RTR has conducted coverage and cost simulations prior to the award. At the end it has been decided to use “Katastralgemeinden” (cadastral communities) as target. A “Katastralgemeinde” is a smaller geographical unit than a municipality. In fact, a municipality consists of one or more “Katastralgemeinden”. In many cases “Katastralgemeinden” are villages, in some cases “Katastralgemeinden” are closed-build areas with just a handful of houses. It turned out that “Katastralgemeinden” are more suitable for the design of the incentive stage than municipalities. Not only because of the scalability but also because “Katastralgemeinden” allow it to address underserved areas more accurately.

	The discount model creates strong financial incentives for operators to expand their wireless coverage by explicitly moving auction proceeds into coverage investments in challenging areas (underserved, economically hard to cover areas). By using a competitive process the social cost for coverage can be minimized. TKK/RTR has used this approach together with standard coverage obligations to reach the ambitious mobile broadband (5G) coverage objectives that are set by the Austrian government and the European Commission (eg 5G action plan). f) The joint roll-out and sharing of mobile infrastructure ("infrastructure sharing") allows network coverage at lower cost. Therefore, the TKK issued a position paper on infrastructure sharing in 2018, taking into account the market structure in mobile communications at the time as well as the extensive coverage obligations with a self-operated network (without active sharing) in the conditions attached of the 2013 multi-band award. The main objective of this position paper was to provide mobile operators with a legal framework that is as clear as possible for the 5G awards in the 700 MHz and the 3.4-3.8 GHz band, the associated investments and the possibility of corresponding cooperation. The position paper aims to mitigate any conflict of goals between the goal of an inexpensive, modern infrastructure and functioning competition. This position of the TKK is based on the one hand on the powers assigned to it in the Austrian Telecommunications Act - especially in the context of frequency rights awards - but on the other hand also on the right to file a case and to submit an opinion under competition law. In order to enable more passive infrastructure sharing, TKK published guidance that competitive concerns in competition law are unlikely to arise in the case of passive infrastructure sharing of up to 50% between two partners, as well as other qualitative criteria to be taken into account in an assessment in the case of more extensive sharing. The most recent figure for passive infrastructure sharing was below 50% for each partner. The guidance therefore supports the possibility of increased sharing. In order to enable active infrastructure sharing, TKK first clarified where independent active infrastructure is in any case necessary for sustainable infrastructure-based competition in the medium and long term - namely in the largest cities of Vienna, Graz and Linz. There - with exceptions - sharing of active infrastructure is not allowed. In order to ensure the rapid roll-out of the new technology and to prevent spectrum hoarding, the two 5G awards imposed on operators the roll-out of up to 1000 and 2000 sites respectively without active sharing. These restrictions were deemed necessary to impose in advance in order to ensure the main objectives such as effective competition. In addition, however, the TKK granted the possibility to share or jointly roll-out active infrastructure (subject to competition law). In particular, the imposed basic coverage obligations for the fulfilment of the coverage target of the 2020 multi-band auction provide for the possibility of sharing and joint roll-out of active infrastructures. Furthermore, TKK provided a set of quantitative rules in order to enable a certain degree of joint and reciprocal use of frequencies – subject to competition law - for these basic coverage obligations. For the extended coverage obligations, which addresses unserved or underserved areas – thus "hard to cover underserved areas" - any sharing of infrastructure and frequencies or joint roll-out is possible (subject to competition law).
BE	a) **<u>700 MHz</u>**:

	In 2015 BIPT hired Analysys Mason to carry out a valuation modelling based on a bottom-up discounted cash flow model, which calculates the value of each of the bands for each of the Belgian MNOs. We have also analysed the prices paid for each of the bands in other European markets, as well as the reserve prices set by the NRAs. On the basis of this Study, Analysys Mason formulated recommendations for the reserve price (0.36 Euro/MHz/pop). The study was published in the communication of the BIPT Council of 25 January 2016 regarding the results of the Analysys Mason study on the value of the spectrum for public systems: https://www.bipt.be/operators/publication/communication-of-the-bipt-council-of-25-january-2016-regarding-the-results-of-the-analysys-mason-study-on-the-value-of-the-spectrum-for-public-systems In that initial modelling we only considered the technical value of the spectrum. We did not analyse the commercial value of the spectrum. BIPT subsequently recently asked Analysys Mason to undertake a complementary study on the commercial value of the different bands considered. This report was confidential and did not change the recommended value. **<u>3600 MHz and 26 GHz</u>**: In 2019, BIPT hired Analysys Mason to carry out a valuation of the 3600 MHz band and of the 26 GHz band. The 3600 MHz was valued based on an economic analysis and comparison with price benchmarks. The 26 GHz band was valued based on high level qualitative analysis of its future and current use as well as on price benchmarks. The study was published in the communication of the BIPT Council of 13 November 2019 regarding the Analysys Mason study of 7 November 2019 on the valorisation of the spectrum for public mobile systems on 3600 MHz and 26 GHz: https://www.bipt.be/operators/publication/bipt-council-communication-of-13-november-2019-regarding-the-analysys-mason-study-of-7-november-2019-on-the-valorisation-of-the-spectrum-for-public-mobile-systems-on-3600-mhz-and-26-ghz The best practice which Belgium proposes here would be a valuation of the spectrum based on an economic analysis and comparison with price benchmarks. b) In principle the full band at 700 MHz will be made available in an auction (2*30 MHz). This will also be the case for the band 3.4-3.8 GHz except for a guard band (3400-3410 MHz which will not be made available) and the protection of existing networks in the band 3430-3450/3530-3550 up to May 2025. It is obvious that a partial reservation of the band 3400-3800 MHz for private networks before the auction leads to an artificial inflation of the auction results. In Belgium we made a choice to auction the full band 3400-3800 MHz. If there will be any spectrum left, that spectrum can then be assigned to private networks. Private network operators can also negotiate access with operators that acquired spectrum in the auction. If necessary, additional spectrum will have to be opened for private networks. c) Art. 30 of our telecom law of 13 June 2005 provides for the possibility for every operator to choose between an upfront payment or a payment in annual instalments. So, if an operator has bid a certain amount in an auction (e.g. 10 million Euro) for the usage rights for a 20 year period, the

	operator can pay 10 million Euros at the start of the licensing period, or the operator can choose to pay 0.5 million every year for 20 years. In the latter case, an interest rate is applicable. A best practice here would be the possibility of payments in instalments. d) BIPT organised a public consultation in June 2019 on the need to make this band available. The outcome was that there was no market demand: https://www.bipt.be/operators/publication/consultation-on-the-use-of-the-26-ghz-band-for-5g The use of an individual authorisation regime for the 24.25-27.5 GHz frequency band has not been explored. The lack of market demand seems to occur in multiple member states. A good practice would be here to examine the regulatory approach and the access conditions for this band e) Coverage obligations will be imposed on the 700 MHz band. There has been a reduction in the reserve price for the auction of the 700 MHz. This value was decreased to approximately half of the original value in order to take account of increased general coverage requirements and the coverage requirement of the main Belgian railway lines. f) In Belgium, the site sharing is foreseen by the articles 25-27 of the Act of 13 June 2005 on electronic communication. Through these articles, the Belgian legislator strongly encourages operators to share their antenna sites (mast, pylon, etc.) and even imposes on them the requirement to inform their competitors during each installation of a new aerial in order to allow them to consider sharing the facility. This obligation only concerns the sharing of antenna sites (i.e. masts, pylons and other buildings used to this end). In 2019, two operators (Orange and Proximus) decided in Belgium to share their RAN network for all technologies (2G, 3G, 4G and 5G) and for the entire national territory. As a result, competitor Telenet filed a complaint with the Belgian Competition Authority (BMA). The case is ongoing before the BMA. BIPT got involved by asking more detailed information from the MNOs and responded to questions from the Belgian Competition Authority for their investigation. A final decision still has to be taken by the BMA. Finally, the BIPT has also adopted on 17 January 2012 a Communication containing guidelines on infrastructure sharing. The document intended to clarify the main concepts associated with mobile infrastructure sharing, to outline its pros and cons, and to provide guidelines and expectations about operator behavior in the Belgian market. According to these guidelines, in overall mobile infrastructure sharing in Belgium is allowed, as long as operators are still commercially and technically independent, since a lack of independence could typically bias competition to the detriment of end users. Regarding the different forms of mobile infrastructure sharing, these guidelines indicated that BIPT in line with EU law principles, encourages passive network sharing between operators as this sharing benefits to market development and will not affect the independence of operators. Concerning Moran sharing, BIPT indicated that it does not have any objection, as long as operators follow the general recommendations, regarding the full independence of operators. In contrary, spectrum pooling, as can be envisaged in a GWCN configuration and whereby operators are making a joint

	usage of one spectrum block, is problematic under Belgian law. This can be derived from the fact that the license is a personal license ; usage rights cannot be transmitted to another party, except in the case of "spectrum trading". Concerning the use of MOCN sharing configuration, it is not supported by BIPT as operators share both the RNC and Node B and pool their spectrum, which would typically limit the scope for service differentiation and competition in the market. The same view is shared by BIPT for the GWCN sharing configuration, as operators share parts of the core network in addition to the RAN. In addition, operators either pool spectrum, or use the spectrum of one of the sharing parties. This prevents physical or logical separation of the sharing operators' networks and, therefore, little differentiation is possible in terms of coverage and network quality, which limits competition in the market. Finally, these guidelines provided additional guidelines on the geographical and operational aspects of infrastructure sharing.
BG	a) b) c) d) e) f)
CY	a) The reserve price in our auction procedures always reflects the minimum levels of fees for rights of use of radio spectrum. A benchmark analysis of the reserve prices in other countries took place. The reserve price takes into consideration the size of the local market (population) and the special circumstances (local/global economy) always having in mind to attract substantial investments. b) The full amount of spectrum in the 700 MHz and 3.4-3.8 GHz frequency bands is part of the authorization procedure that is currently taking place, in order for the full amount of the radio spectrum harmonized at Union Level to be assigned. c) In our spectrum authorization procedures, the participants have the option of paying the fees for rights of use of radio spectrum also in instalments. Usually, a percentage of the fee has to be paid in advance with the issuing of the license and the rest of the fee is divided into annual instalments. The initial percentage to be paid can be flexible, taking into consideration the status of the local/global economy. A new element that we will apply in our current authorization procedure for 5G networks is that the first instalment will be payable in 15 months from the day of issue of the authorization. Taking into consideration the economic situation due to the pandemic, we give our operators more time before starting to pay their instalments. Also, in the past our policy was when paying a fee in instalments, the operators had to submit a bank guarantee for all the amount of the fee to be paid. Taking into consideration the economic situation due to the pandemic we have decided for the current authorization procedure for 5G networks to reduce the amount of the bank guarantee (i.e. to cover part of the amount of the fee to be paid) in order to help our operators to invest in their

	network deployment. d) N/A. The 24.25-27.5 GHz frequency band is not part of the current authorization procedure due to lack of market demand. e) The coverage obligations we have included in our current authorization procedure are in line with the European Commission's objectives regarding 5G network connectivity (as specified in COM(2016) 587 Final). These are the minimum requirements. We believe that market and the competition will force the operators to accelerate and expand their coverage f) Operators have the option for sharing of passive and active infrastructure. In particular, passive share of masts and towers takes place between operators. Furthermore, RAN sharing is also allowed and is implemented between two existing operators.
CZ	a) For the frequencies which are subject to auction, the Czech Republic follows the well-established methodology of **setting the reserve prices by benchmarking against the prices obtained in recent auctions in European countries**, with the exclusion of outlier cases with prices either extremely high, or extremely low.[53] We are of the view that at the point of awarding rights of use of radio spectrum, 5G networks require no additional financial incentives for implementation as against previous network generations. The business case for deployment is guaranteed by the supreme functionality and cost efficiency provided by 5G technology. This view is confirmed by the fact that Czech MNOs are already announcing conversion of their standing 4G networks to 5G NSA networks in some of the bands where they have acquired rights previously (O2 in the 3.7 GHz band; Vodafone in the 1,800 MHz and 2,100 MHz bands). Obviously, at the point of awarding the rights of use, the priority must be to avoid revenue maximization at the expense of network investment, which again is granted by benchmarking the price against previous auctions. However, there is expected that the demand on continuous **coverage of large part of the country by 5G SA as well as by fix VHCN systems will lead to the involvement of the state aids in the future.** b) The Czech Republic has made available full 3x10 MHz in the 700 MHz band by an auction announced on 7 August 2020, which has just been concluded.[54]

53 Invitation *to Tender for Granting of the Rights to Use Radio Frequencies to Provide Electronic Communications Networks in the 700 MHz and 3400–3600 MHz Frequency Bands,* 7 August 2020, section 6.3, https://www.ctu.cz/sites/default/files/obsah/ctu/oznameni-ceskeho-telekomunikacniho-uradu-o-vyhlaseni-vyberoveho-rizeni-za-ucelem-udeleni-prav-k/obrazky/20200811-invitationtotender.pdf

	The Czech Republic has made available full 200 MHz in the 3600 – 3800 MHz already in July 2017[55], and allocated further full 200 MHz in the 3400 – 3600 MHz band in the auction concluded just now.[56] The Czech Republic has made available initial 1 GHz part of the 26 GHz band for experimental 5G purposes. (see the answer to 21.(d) in this questionnaire) One issue that could result in spectrum scarcity is exclusive reservations of spectrum. The Czech Republic was facing this with respect to the demand that up to 2x10 MHz in the 700 MHz band be reserved for PPDR services. We eventually decided to satisfy the PPDR requirements not by reserving dedicated spectrum, but by imposing two obligations on the licence holders: To address BB PPDR needs, the CTU decided to prevent the reduction of accessible harmonised band and allocate the whole 700 MHz band to public communication networks, but imposing two obligations on mobile network operators: o **National Roaming for PPDR.** This obligation related to **rights of use in the 700 MHz band** concerns **all holders of those rights.** The holders are obliged to enable full-MVNO operation for the purposes of PPDR services across all the frequencies in the 700 MHz and 800 MHz bands for which they hold rights.[57] o **Priority BB-PPDR**. This obligation concerns the rights of use to **one of the 2x10 MHz auction block** in the 700 MHz band only. The holder of the rights to the block A2 is obliged to provide access to its network for PPDR services' networks in MOCN mode. Select PPDR functionalities must be available on the RAN. To fulfil the obligation, the holder may use also frequencies 800 MHz band for which s/he holds rights.[58] c) The Czech law currently does not allow auction price to be paid in instalments. However, for any future auctions, the option to pay also auction price

54 See *Invitation to Tender* and *Press Release: CTU has completed the auction of frequencies in 700 MHz and 3400–3600 MHz bands, 13 November 2020*, https://www.ctu.eu/press-release-ctu-has-auctioned-frequencies-700-mhz-and-3400-3600-mhz-bands

55 Press *Release: Frequencies in 3,7 GHz band will be granted to 2 current and 2 new operators*, 11 July 2017, https://www.ctu.eu/press-release-frequencies-37-ghz-band-will-be-granted-2-current-and-2-new-operators

56 Press *Release: CTU has completed the auction of frequencies in 700 MHz and 3400–3600 MHz bands, 13 November 2020*, https://www.ctu.eu/press-release-ctu-has-auctioned-frequencies-700-mhz-and-3400-3600-mhz-bands

57 See *Invitation to Tender*, section 8.3.2.

58 See Invitation *to Tender*, section 8.3.1.

	in instalments is to be introduced to the Czech law soon, as required by the Directive (EU) 2018/1972. This amendment is part of the Bill novelizing the Act on Electronic Communications, which has been approved by the Government of the Czech Republic on 9 November 2020 and will be shortly presented to the Parliament. The 26 GHz band is being made available using individual (not exclusive) authorization regime, where fees are paid yearly. d) The Czech Republic has made available 1 GHz of spectrum in the 26 GHz band for experimental purposes[59]. The aim of this step is **clear indication of the availability based on the non-exclusive access.** Based on the comments received during a preliminary call for input in November 2019,[60] and a regular consultation in August 2020[61], we concluded that there is no market demand to start using frequencies in the band immediately. The key decision has been made on the authorisation regime – it **based on no spectrum rights limitation**. e) The Czech Republic does not yet find it necessary to apply specific financial incentives to 5G spectrum awards *(see the answer to question 21(a))*. **Coverage obligations introduced in the 700 MHz, 3.5 GHz and 3.7 GHz bands are based on population and territory coverage, number of base-stations deployed, and coverage of transport routes and specific "white spots"**.[62] This is consistent with the approach taken in earlier auctions, based on the assumption that the cost of meeting the obligation will be considered by the bidders and reflected in their auction bids. There is a specific obligation to **cover border crossings with the network providing Priority BB-PPDR services, which has been reflected in lower reserve price of the relevant auction block.**[63] f)

59 See *Část plánu využití rádiového spektra č. PV-P/2/10.2020-10 pro kmitočtové pásmo 24,25–27,5 GHz*, 13 October 2020, https://www.ctu.cz/sites/default/files/obsah/ctu/sdeleni-o-vydani-opatreni-obecne-povahy-casti-planu-vyuziti-radioveho-spektra-c.pv-p/2/10.2020-10-pro-kmitoctove-pasmo-2425-275-ghz/obrazky/pvrs-2p.pdf

60 Informace *o záměru zpřístupnění pásma 26 GHz*, 19 November 2019, https://www.ctu.cz/sdeleni-o-zameru-zpristupneni-pasma-26-ghz

61 Call *for comments on the draft measure of general nature - part of radio spectrum utilisation plan No. PV-P/2/XX.2020-YY for 24,25–27,5 GHz band,* 11 August 2020, https://www.ctu.eu/call-comments-draft-measure-general-nature-part-radio-spectrum-utilisation-plan-no-pv-p2xx2020-yy

62 See Invitation *to* Tender, section 7.5

63 See ***Invitation to Tender*, sections 6.3, 8.3.1.1, and Annex 4 chapter 4**.

	This is already possible by the Czech law, as witnessed by **the fact that two national MNOs (O2 and T-Mobile) have been sharing infrastructure since 2011.** The sharing agreement involves thousands of access points on the MNOs' 2G, 3G and LTE infrastructure; the sharing mode used is MORAN. Therefore, we consider the legal framework sufficient to achieve this target. We are monitoring with interest initiatives that provide guidance to local authorities on facilitating deployment of 5G infrastructure on public assets, which will often include infrastructure and/or spectrum sharing arrangements. A good example would be the discussion document sponsored by the Dublin City Council and Sligo City Council.[64] **Note**: With the aim to facilitate flexible spectrum usage, including spectrum sharing/leasing/trading, the CTU **is going to release information about spectrum usage and users**. **Needed amendment of the Act on Electronic Communications has been developed, approval procedure is ongoing.**
DE	a) **700 MHz**: The minimum bid for a frequency block of 2 x 5 MHz (paired) in the 700 MHz band was € 75 million. This corresponds to 0.09 € per MHz pop (population). **3.4-3.8 GHz**: The minimum bid for a frequency block of 1 x 20 MHz (unpaired) in the 3400 MHz – 3420 MHz range was € 2 million. The minimum bid for a frequency block of 1 x 10 MHz (un- paired) in the 3420 MHz – 3700 MHz range was € 1.7 million (0.002 € / MHz pop). **24.25-27.5 GHz**: The 24.25-27.5 GHz frequency range was not awarded in an auction. Germany plans to intro- duce a location based individual licensing scheme, which will be published soon. b) Germany tries to avoid spectrum scarcity by assigning all 5G pioneer bands for the roll-out of 5G. With regard to 3.6 GHz, it should be noted that the whole 400 MHz spectrum is available for 5G services. 300 MHz have been awarded by auction; 100 MHz are available for exclu- sive licences on a local basis. The 24.25-27.5 GHz frequency range has not yet been assigned, but the assignment procedure will start soon. c) **700 MHz**:

64 5G ***and*** *Future Connectivity: An Emerging Framework for Irish Cities and Towns*, 5 August 2020, https://connectcentre.ie/wp-content/uploads/2020/08/5G-and-Future-Connectivity_Full-Document-FINAL.pdf

	The option of payment in instalments was already provided for in the decision by the Federal Network Agency's President's Chamber of 2015. **3.4-3.8 GHz**: Payment in instalments was agreed in a contract between the Federation and the MNOs in September 2019 (https://www.bmvi.de/SharedDocs/DE/Anlage/DG/Digitales/Mobilfunkstrategie.pdf? blob=publicationFile, p. 37, in German). Payment in annual instalments over the period to 2030 of the liabilities from the 2019 spectrum auction was allowed in return for additional coverage commitments by the mobile network operators. **24.25-27.5 GHz**: The Frequency Fee Ordinance for 26 GHz is currently being coordinated between the Gov- ernment departments. d) Taking into account the comments received, the Federal Network Agency has drawn up draft "Administrative regulations for frequency assignments for local, broadband frequency uses in the frequency range 24.25-27.5 GHz (VV Lokales Breitband 26 GHz)". The draft administrative regulations contain the frequency allocation regulations for local, broadband frequency uses. Its entry into force and the start of the frequency assignments based on it are scheduled for this year (https://www.bundesnetzagentur.de/DE/Sachgebiete/Telekommunikation/Unternehmen_Institutionen/Frequenzen/OeffentlicheNetze/LokaleNetze/lokalenetze-node.html, in German). e) In its decision for the award of the 5G spectrum, Germany did not give any specific financial incentives. However, the additional agreement between the Federation and the MNOs with regard to the closing of white and grey spots can be understood as a financial incentive (https://www.bmvi.de/SharedDocs/DE/Anlage/K/gipfelerklaerung.pdf? blob=publicationFile, in German). In this agreement, the Federation allowed the MNOs to pay in annual instal- ments over the period to 2030 with regard to the liabilities from the 2019 spectrum auction. In return, the MNOs made additional coverage commitments to cover 99% of all households with LTE. In addition, the Federation as well as some federal states will provide public funding for mo- bile communications infrastructure in remaining white spots. f) Germany regards the sharing of passive infrastructure as unproblematic. In the case of the sharing of active infrastructure, the Federal Network Agency as well as the Federal Cartel Office would be required to take a thorough look at any agreements. The possibility of pas- sive and active infrastructure sharing is part of the national Mobile Communications Strategy (https://www.bmvi.de/SharedDocs/DE/Anlage/DG/Digitales/Mobilfunkstrategie.pdf? blob= publicationFile, S. 34f., in German).
DK	a) In Denmark, the objective is that the costs of using radio spectrum, including fees for rights of use and licence prices, are at a level that ensures an efficient assignment and utilization of radio spectrum. In connection with auctions in Denmark this means that the value of the licences of a potential alternative utilization must be taken into account when determining reserve prices for licences, and that the costs of using the radio spectrum reflect

	the licences terms and conditions and wherever possible to determine payment arrangements that are connected to the actual possibility for using the radio spectrum. b) Previously all harmonised radio spectrum have been made available to the mobile operators. In the previous auction, a part of the 2300 MHz spectrum band was not sold as the coverage obligation subject to 40 MHz was too onerous. However, in the upcoming multiband auction in Denmark, these frequencies together with 1500 MHz, 2100 MHz (re-issuance), 3.5 GHz and 26 GHz will be made available to the mobile market. All 390 MHz in 3.5 GHz frequency band will be made available in the upcoming auction, and 2850 MHz in the 26 GHz frequency band will also be made available in the auction. 400 MHz in the 26 GHz frequency band will be set aside for private networks. As there is lots of spectrum in the upcoming auction in total and also in the 26 GHz frequency band, it is the assessment that it won't have an influence on the scarcity. With regard to the 3.5 GHz band, it is expected that a leasing obligation for the purpose of establishing private networks will be attached to the upper 60 MHz, which means that the licensee of this part of the frequency band, will be obliged to lease up to 60 MHz in the 3740-3800 MHz in the first four years of the licence period. Any leasing agreement within these four years could last for the whole of the licence period, which is 20 years. c) At the previous auctions in Denmark, the procedure with regard to payment of fees has been that at the end of the auction, the winning bidders can choose to either pay the full licence price up front or to pay the licence price in instalments during the first 10 years of the rights of use. If the winning bidders choose the instalments, then they must pay 10% of the licence price before issuance of the licence and then pay a yearly instalment of the rest of the licence price over nine years together with providing a guarantee for at least three instalments. This procedure is also proposed at the upcoming multiband auction. d) 400 MHz in the 26 GHz frequency band are set aside for private networks. This means that the licence regime for this part of the frequency band will be first-come-first-serve. The rest of the frequency band will be part of the upcoming multiband auction. e) Please see answer to question 21 c) regarding the financial incentives. In addition to this, please note that it is possible for the licensees, who are liable to fulfil coverage obligations, to postpone the period of time where instalments are to be paid until the time of fulfilment of the coverage obligations. In the upcoming auction, it is determined that at least three mobile operators awarded frequencies in the 3.5 GHz frequency band shall fulfill a coverage obligation that ensures roll out of network using 3.5 GHz to at least 60 % of the Danish population by the end of 2023 and 75 % by the end of 2025. This ensures a higher expected percentage of the Danish population to be able to connect to a 5G network than if a coverage obligation was not determined. f) Hi3G entered into a commercial agreement with TDC in February 2019 on national roaming with regard to mobile voice and mobile data on 2G, 3G and 4G.

	In 2012, Telenor and Telia entered into a network sharing agreement with regard to the companies' radio access networks (2G, 3G and 4G) and established the company "TT-Netværket" (the 'TT-Network'). The agreement was approved by the Danish National Competition Authority with several conditions attached. One condition is that Telenor and Telia in future auctions shall participate together through the company "TT-Netværket". As a consequence Telenor and Telia participated as "TT-Netværket" in the 800 MHz auction in 2012, in the 1800 MHz auction in 2016 and in the 700 MHz, 900 MHz and 2300 MHz auction in 2019. Please also see the answers under item 2(a) "Rules for access to existing infrastructure", where a short description regarding small cells among other things appears.
EE	a) Maximum reserve price for one auction object is established by Electronic Communications Act. The reserve price is based on an auction object. That means that the maximum allowed reserve price is same for example for 2x20 MHz in 2500 MHz band and for 100 MHz in 3600 MHz band. b) We are trying to release harmonised spectrum from other use before auction in order to ensure the assignment of the full amount of radio spectrum. c) d) We are planning auction for public networks, but a part of the band will be reserved to the private networks and they will be licenced according to the principle first-come-first-served. e) f) All the possibilities to share the infrastructure are supported by the law.
EL	a) Valuation of reserve prices per frequency band was carried via the method of benchmarking of EU countries' (plus Iceland, Norway, Switzerland and UK) 5G auctions from 2015 and onwards. The sample prices undertook a series of value adjustments per Greek-specific characteristics, i.e. GDP, population, inflation and duration adjustments. The median price of each sample was selected as final reserve price, in order to exclude lower and higher extreme values. b) The spectrum bands (700MHz, 3400-3800MHz, and 26GHz) identified for 5G and 2100MHz are simultaneously available through the same award process. o 700MHz – Greek State had to coordinate and plan the migration of TV broadcasters (more than 92% population served) as well as telecom systems which are used by legacy systems. The spectrum in 700MHz band will be fully available by middle of

	November 2021. o 3400-3800Mhz – In order to defragment the band and offer large spectrum blocks (80 100 MHz) in the auction, the Greek state migrated existing services for wireless broad-band offered in rural areas. o 26GHz – The auction includes the upper 1GHz of the 26 GHz band. o In 2100MHz band, spectrum expiring in August 2021 is auctioned in December 2020 alongside with the unassigned 2x15MHz, setting the same expiration date. c) A 12-year payment scheme, has been set, to alleviate financial pressure and release financial resources to be used towards the network deployment investments. The successful bidders have two options to pay the final price a) in a lump sum payable within 10 days from the auction completion date or b) the 30% of the final price payable within 10 days from the auction completion and the remaining 70% is payable in nine (9) annual instalments, with first instalment in January 2024, that is three (3) years after the successful bidders announcement by NRA. No spectrum usage fees are applicable. d) e) see paragraph (c) above f) There exist provisions for the sharing of passive and active infrastructure between the operators. The operators, through commercial agreements, can: 1. share passive infrastructure simply by submitting a notification to the EETT 2. share active infrastructure, including active radio equipment in rural areas with an obligation to notify the relevant contract to EETT within twenty days of its signing. EETT may intervene within its responsibilities. For urban and semi-urban areas, the sharing of active infrastructure, including active radio equipment, is subject to prior approval of EETT, upon request.
ES	a) Spain has adopted several measures to give access to 5G radio spectrum. For instance, for the 3.6-3.8 GHz band auction and assignment, measures described in (a), (b) and (c) have been applied. The provision included in (f) is already possible under the current spectrum regulation in Spain. The provision described in (d) is already possible within the current regulation but for the specific range 24.25-27.5 GHz it hasn't yet been established if the band is subject to a fixed number of possible titles or, on the other hand, if the regular method of assignment based on a "first come first served model" will continue to apply for a not limited number of possible spectrum users. The measure described in (e) was applied in previous auctions for ECS bands but not in a combined form with financial incentives. There have been

	obligations as for instance for the 3rd generation deployment (Order of 10th November 1999): "As of August 1, 2001, the service will be implemented at least in urban areas of cities with more than 250,000 inhabitants in the terms defined by the National Institute of Statistics." For the 700 MHz and 24,25-27,5 GHz frequency bands the authorization procedures of radio spectrum are under study. A Peer Review is foreseen for the 700 MHz band authorization process in the coming weeks. At the end of this Part II, a more detailed description of the measures taken by Spain is developed. Just as a summary, please find below the general view about the measures considered best or good practices and which have been applied in Spain at more or less extent: o Elaboration of strategies to foster 5G deployment o Public consultations to know the interests and obstacles found by the sector and interested parties. o Regulatory framework ready on time o Promotion of the spectrum secondary market and sharing agreements o Promotion of trials and the availability of spectrum for them o Coordination with neighboring countries ready in time o The fight of the misinformation o Publication of information. Units with the aim to foster and follow the 5G development (Technical 5G Office, 5G National Observatory, Consultative Council for Digital Transformation…) o Intensive collaboration with the sector (included the industry and administrations) o Reduction of burocratic/administrative burdens and simplification of the procedures for installation without reducing spectrum control mechanisms. o Collaboration with other MMSS and participation in the Peer Review established at EU level. The measures to be taken for promoting 5G technology are mainly the following: o ALLOCATION OF THE PRIORITY FREQUENCY BANDS REQUIRED FOR 5G IN 2021. o 5G PILOTS AND NEW MEASURES TO PROMOTE THE DEPLOYMENT AND ADOPTION OF 5G. o DEVELOPMENT OF 5G TRANSPORT CORRIDORS. o LEADERSHIP IN EUROPEAN PROJECTS FOR INNOVATION IN NEW GENERATIONS OF MOBILE TECHNOL OGY. o REGULATORY PROPOSAL FOR 5G CYBERSECURITY. o OTHER REGULATORY MEASURES TO FACILITATE 5G DEPLOYMENTS. Other strategic measures to incentivise 5G roll-up:

	○ Spectrum Fees reduction according to roll-out process ○ Aids to complement 5G deployments in less populated areas and secondary corridors ○ Support and development of ecosystems to push 5G use cases of success (from outcomes of the pilots developed or others sources of research on 5G projects) ○ Promotion of 5G pilots (i.e. Smallcells pilots) ○ Training to local civil servants on telecommunications regulation ○ Coordination of the different administrations and best practices guidelines for local administrations to lift obstacles to deployments ○ Simplification of the procedures to get administrative authorizations ○ Cybersecurity regulation to build trust ○ Availability of infrastructures owned by the Administrations Specification of proportionate but incentivising measures and obligations in the spectrum awards process b) c) d) e) f)
FI	a) Reserve prices should reflect the estimated value of spectrum, i.e. the final price in order to make auctions effective. The reserve price in Finland has been evaluated taking into account the value of the spectrum in spectrum auctions in other similar markets and adopted that evaluation into the Finnish market in terms of e.g. population, mobile penetration and data usage. b) A key element is to allocate spectrum for nationwide Mobile Broadband as much as possible and frequencies are taken into use quickly after the international harmonization measures. Needs of local networks (verticals) should also be considered, takin into account the spectrum availability. Nation-wide licences for Electronic Communications Services (ECS) in the 5G pioneer bands have already been auctioned and in use: 700 MHz (year 2016), 3400-3800 MHz (2018) and 25.1-27.5 GHz (2020). The lower part of the 26 GHz band, i.e. 24.25–25.1 GHz, is reserved for local 5G use and will be licensed in the beginning of 2021.

	To provide new possibilities and to satisfy the needs of local/private users the band 24.25–25.1 GHz has been allocated to local networks. In addition to this, there is a requirement for spectrum leasing in the 3.5 GHz licences. In 26 GHz it was considered that 2400 MHz for nationwide networks would be sufficient and reserving 850 MHz for individually licensed local networks would create a balance between nation-wide and local needs. c) The fees for 700 MHz, 3.5 GHz and 26 GHz network licences are paid in five annual equal instalments starting from the granting of the licence. Few annual equal instalments are considered reasonable based on the expected result of auction (with non-fiscal goals) and enabling the annual investments in the network in rollout phase. d) In order to create new possibilities to fulfil the needs of local networks for verticals, the lower part of the 26 GHz band, i.e. 24.25–25.1 GHz, was excluded from the auction and is reserved for local 5G use. The rights of use of spectrum for these networks will be granted by the Finnish Transport and Communications Agency (Traficom) on a "first-come-first-serve" basis starting in the beginning of year 2021 (so governmental network licence is not required like in nationwide networks). e) To promote investments and quick network roll-out, fiscal goals should be avoided in auctions. Fiscal goals may lead to higher reserve prices. In the spectrum auctions held so far in Finland, there has been no fiscal goals and for example the 700 MHz, 3.5 GHz and 26 GHz auctions were auctioned at a reasonable price. This principle enables more investments to the networks, in our view. In all network licences there is a requirement that spectrum shall be taken into use within two years from the granting of the licence. Coverage obligations depends of the frequency band in question: o The 700 MHz network licences include obligations for population coverage and coverage for roads and railways (operators may use also other frequency bands to fulfil these requirements). o There are no coverage obligations in the 3.5 GHz and 26 GHz network licences, because these higher frequency bands require more investments to the network and the broader coverage for 5G could be provided by using lower frequency bands. In the 3.5 GHz licenses there is a requirement to lease spectrum for local networks, if requested. In 26 GHz the lower part of the band is reserved for local networks. f) Sharing of passive and active infrastructure is possible with some exceptions. In order to ensure adequate competition there are obligations in some of the network licences depending of the frequency band. With regard to the 5G pioneer bands they are as follows:

	o In the 700 MHz operating licences it is required that the operators own network shall cover at least 35% of the population (operators may use also other bands to fulfil this obligation). Beyond that coverage sharing the passive and active infrastructure is allowed. o In the 3.5 GHz licences it is required that the operators own network shall cover at least 35% of the population. Beyond that coverage sharing the passive and active infrastructure is allowed. o In the 26 GHz nationwide licences sharing the passive and active infrastructure is allowed. Sharing of passive and active infrastructure promotes connectivity e.g. in rural areas, where the investments could otherwise be more limited. Sharing may improve coverage and capacity for users in these areas. Even with network sharing the MNO's can still compete, resulting in reasonable pricing for end-users. An example of network sharing in Finland is the Finnish Shared Network Ltd. (SYV), which is a joint company by two MNO's, DNA plc and Telia Finland plc. This shared network covers half of Finland's total geographical area and serves approximately 15 percent of the population in Northern and Eastern Finland. DNA and Telia continue to compete also in this area with their own products and pricing structures. Also the Joint construction act (implementing the BCRD) mandates the shared use of passive infrastructure, e.g. masts, poles and towers, on fair and reasonable terms.
FR	a) Des méthodes usuelles ont été utilisées pour fixer le prix de réserve : - Un modèle de valorisation financière modélisant les flux de cash-flows actualisés d'un opérateur d'infrastructure générique représentatif du marché mobile français. Cette modélisation financière donne une estimation de la valeur du spectre. - Un parangonnage international et européen pour comparer les variables qualitatives et quantitatives permettant d'estimer la valeur du spectre. - Un modèle économétrique utilisant les mathématiques et des statistiques pour construire un modèle multi-variable explicatives permettant d'estimer la valeur du spectre dans la bande attribuable. **<u>Courtesy translation:</u>** Usual methods were used to set the reserve price: - A financial valuation model modeling the discounted cash flows of a generic infrastructure operator representative of the French mobile market. This financial modeling gives an estimate of the value of the spectrum. - International and European benchmarking to compare qualitative and quantitative variables to estimate the value of the spectrum. - An econometric model using mathematics and statistics to build a multi-variable explanatory model allowing to estimate the value of the spectrum in the band to be attributed. b) Aucune bonne pratique n'a été identifiée pour ce point.

	Courtesy translation: No best practice identified for this point. c) Pour l'utilisation de la bande 3,5 GHz, les lauréats devront verser à l'État une redevance pour l'exploitation d'un réseau mobile en France métropolitaine pendant la durée initiale de quinze ans d'une autorisation d'utilisation de fréquences attribuée en 2020. Celle-ci est exigible en plusieurs parts entre 2020 et 2034 : o La première part correspond à la phase de souscription des opérateurs aux engagements optionnels contre un bloc de 50 MHz au prix de réserve. Elle devra être payée en 15 parts égales de 2020 à 2034, la première dès l'attribution de l'autorisation d'utilisation de fréquences et les quatorze autres à la date d'anniversaire de l'attribution. o La seconde part correspond à la phase d'enchère principale et à l'enchère de positionnement ; Elle devra être payée en 4 parts égales de 2020 à 2023, la première dès l'attribution de l'autorisation d'utilisation de fréquences et les trois autres à la date d'anniversaire de l'attribution. o Ils verseront également une redevance variable égale à 1% du chiffre d'affaires réalisé sur les fréquences concernées. **Courtesy translation:** For the use of the 3.5 GHz band, the award winners should pay a fee for the operation of a mobile network in metropolitan France during the initial period of fifteen years of an authorization for use spectrum awarded in 2020. This is payable in several parts between 2020 and 2034: o The first part corresponds to the operators engagement to optional commitments to obtain a 50 MHz block at the reserve price. It should be paid in 15 equal parts from 2020 to 2034, the first part should be paid on the moment of the frequencies authorization granting and the fourteen additional parts on the anniversary date of the spectrum award. o The second part corresponds to the main auction phase and the positioning auction; It should be paid in 4 equal parts from 2020 to 2023, the first as soon as the authorization to use frequencies is granted and the other three on the anniversary date of the spectrum award. o They will also pay a variable fee equal to 1% of the turnover related to this concerned spectrum. d) Depuis janvier 2019, l'Arcep attribue des fréquences dans la bande 26 GHz à des plateformes d'expérimentation 5G afin de mieux identifier les différents types de cas d'usage innovants de cette bande et afin de concevoir la procédure d'attribution la plus appropriée. Toutes les options sont en cours d'analyse, par exemple: autorisations locales, autorisations nationales, autorisations aux verticaux ou aux opérateurs de téléphonie mobile… **Courtesy translation:** Since January 2019 Arcep awards frequencies in the 26 GHz band for 5G trial platforms to better identify the various types of innovative use cases of this band and design the most appropriate award procedure. All the options for the award procedure are under study, for example: local authorisations, national authorisations, authorisations to verticals or mobile operators… e) Aucune bonne pratique n'a été identifiée pour ce point.

	Courtesy translation: No best practice identified for this point. f) L'Arcep a participé à l'élaboration de la position commune de l'ORECE (BEREC) sur le partage des infrastructures mobiles. En particulier, concernant le déploiement de la 5G, l'Arcep accepte l'affirmation suivante: «Les zones où la concurrence basée sur les infrastructures n'est pas raisonnablement envisageable (en particulier les zones les moins densément peuplées): dans ces zones, un niveau minimum de qualité de service est irréalisable avec des déploiements autonomes et donc avec une concurrence basée sur les infrastructures. En ce qui concerne les objectifs de couverture du territoire, le partage actif du réseau pourrait être particulièrement pertinent dans les territoires isolés, où une attention particulière devrait être accordée aux conditions de partage afin de permettre l'inclusion de chaque opérateur dans le partage. » À cet égard, une obligation de partager le réseau 5G dans les zones blanches où le réseau 4G est déjà partagé a été ajoutée dans la procédure d'attribution de la bande 3,5 GHz. Cette obligation de partage de réseau 5G dans les zones blanches pourrait contribuer à accélérer le déploiement des réseaux 5G dans les zones rurales. En dehors de ces zones blanches, l'Arcep accueillerait a priori favorablement tout accord de partage pour favoriser le déploiement du réseau 5G en milieu rural, que les opérateurs sont libres de contracter. A ce stade, il n'y a pas de tels accords en France puisque les fréquences viennent tout juste d'être attribuées. **Courtesy translation:** Arcep participated in the drafting of the BEREC common position on mobile infrastructure sharing. In particular, regarding 5G roll-out, Arcep accepts the following statement "Areas where infrastructure based competition is not reasonably feasible (in particular, least densely-populated areas): In these areas, a minimum level of service quality is infeasible with stand-alone deployments and thus infrastructure-based competition. With regard to coverage objectives, active network sharing might be of particular relevance in isolated territories, where a careful consideration should be given to the sharing conditions in order to enable sharing to include each operator." In this regard, an obligation to share 5G network in white areas where 4G network is already shared has been included in the 3,5 GHz band award procedure. This 5G network sharing obligation in white areas could contribute to accelerating the deployment of 5G networks in rural areas. Apart from these white areas, Arcep would a priori welcome any sharing agreement to foster 5G network deployment in rural areas, that operators are free to contract. At this stage, there are no such agreements in France since the frequencies have only just been awarded.
HR	a) HR is currently in process of procuring consulting services for 5G spectrum auction (700 MHz, 3,6 GHz and 26 GHz). One of the tasks for chosen consulting firm will be to propose adequate reserve price to encourage investment. Intention is to have low reserve prices but to oblige operators to invest in improving mobile coverage and enabling broadband connectivity in areas which are currently poorly covered or not covered at all. b) HR finds public consultation to examine market interest as useful tool to understand needs of interested parties and to allocate available resources in the best possible way. Certain usage have alternative spectrum resources which can be used (e.g. PPDR) and scarcity can be avoided by implementing alternative possibilities. On the other hand, for certain bands lack of interest could be discovered and it is not needed to award all available resources

	leaving continuous spectrum for other usage. c) Payment modality is defined in auction documentation and all options such as postponing, paying in instalments or discount for one-off payment is possible. HR has already used above mentioned options where MNOs could chose best suitable option for them. d) Currently no interest for verticals/applications in this band has been expressed which would require individual authorisation regime. This might be an issue in future and HR is open for this possibility of using individual or even general authorisation license regime. e) *See* answer *under (a).* f) There are no regulatory obstacles for network sharing, it is subject to mutual agreements between operators. Masts are shared between MNOs wherever possible and mast sharing is regulated in Regulation on criteria for the development of electronic communication infrastructure and other related equipment. According to this regulation when one MNO decides to build the mast he is obliged to inform other MNOs about this intention. If others are interested to use the same mast for their equipment, they must formally express interest to MNO who is building the mast. This way they are ensuring position on the mast and enabling investor to build mast which can support all necessary equipment. 5G network will probably need additional sharing regulation to ensure deployment in certain parts of country to meet connectivity goals. HR experience to date suggests that for areas with no commercial interest measures such as obligations regarding network roll-out and sharing included in spectrum license may be necessary. For example to oblige operators to build in certain part of these uncommercial areas and to share network with each other. This way faster network implementation and coverage is achieved.
HU	a) The reserve price is only one, but very important element of the fee structure. High reserve prices can discourage new entrants to the market. Low reserve prices can result in suboptimal governmental income in case of inadequate competition. The stucture of procedural rules itself, the intensity of interest, the nature and usability of the band concerned, the market environment also significantly influence the market players' decision on the price of the given frequency band and how much they willing to pay as a result of a given competitive procedure. In our opinion, in case of a competitive procedure, it is clear that the market itself determines the value of the given frequency band under the known conditions and obligations if the competitive procedure is well designed. The Hungarian Electronic Communications Act stipulates general rules for the regulation of frequency fees. The general rules are the followings: 'The radio spectrum fee should be set in a way that reflects the need to ensure the optimal use of resources. Fees shall be set in such a way that they are objectively justified, transparent and non-discriminatory, proportionate to the objective pursued and serve the objectives of radio spectrum management.' The amendment of the NMHH Decree on rules of award procedures (implementing the EECC) in addition to the criteria laid down in Electronic Communications Act provides that NMHH shall take into account the usability of awarded spectrum as well as the possibility of alternative

	use when determining the reserve price. b) The 700 MHz FDD spectrum was admittedly limited to 2x25 MHz due to announced governmental spectrum need. NMHH auctioned 3,6 GHz at first time in 2016. 80 MHz spectrum was licensed for the first time. With the exception of 10 MHz guard band, the remaining 310 MHz was auctioned together with 700 MHz in one auction. In addition 30 MHz in the 2,1 GHz band had been licenced together with 700 MHz band and 3,6 GHz band. c) The fee paid for the use of the spectrum is paid monthly by the MNOs. Generally the one-time fee (entry fee) has to be paid before the licencing by the result of the auction. In the case of the 900/1800 MHz auction (stared on 16 October 2020), the entry fee must be paid by April 2022 in accordance with the winner's decision. d) • There is **no market demand** in Hungary. There is no decision on the authorization form of the 24,25-27,5 GHz frequency band, not yet. • NMHH held public hearing twice to assess market needs, including 26 GHz band concerned. The first public hearing was in 2017. The second public hearing held on 13 December 2019. The 26 GHz is a band for point-to-point microwave links mostly used by MFCN operators. Only one licence holder is other than MNO. The users asked the possibility not to change the right of use before the expiry date and a replacement band should be designated for microwave systems as a first step and only than the refarming is feasible. There were no other stakeholders showing any interest for 26 GHz. At the first step NMHH sholud open an alternative frequency band for P-P usage. For this purpose, the 32 GHz band has been identified by NMHH. e) At the latest auction process (auction procedure announced for frequency use entitlements related to wireless broadband services specially supporting the introduction of 5G) NMHH used **incentives** to achieve 5G coverage goals. 50% fee discounts are available for 10 years to parties who 1. obtained frequency use rights in this auction procedure in the 700 MHz or the 3600 MHz frequency band, and/or 2. already hold frequency use rights for the 3600 MHz frequency band before the start of the auction procedure. All winners requested a fee discount with conditions according to section 6.3.1 and Annex 2 Item 1 of the Auction Documentation, The obligation: to implement a total of 10 or more network development cases selected from 4 or more groups of network development cases divided into 5 groups in Table 1 of Annex 2 of the Documentation, and to ensure broadband wireless coverage with metrics set down in Annex 2 of the

	Documentation, within the deadlines specified for each case. o The 5 categories are the following (with examples) ▪ Rail and other non-road traffic (rail, waterways, bikeways) by October 2025 ▪ Road traffic (Highways, 1/10 number roads) by December 2025 ▪ Population coverage of settlements (From District of Budapest to villages, innovation centres, etc.) by December 2023 ▪ Tourism (Tokaj, Balaton, Sopron-Fertő, World Heritage areas of Hungary, etc.) by July 2025 ▪ Verticals (Energy, Healthcare, Industrial parks, Projects under the Modern Cities Program, Universities, Agricultural projects, etc.) by July 2023 f) **Passive infrastucture** sharing is generaly allowed by the Hungarian Electronic Communication Act. (see answers at 4., 10.). NMHH plans to issue a Decree with rules fostering property or facility sharing. **Active infrastructure** sharing is possible by using the secondary trading agreement regime. The secondary trading is allowed band by band in the Decree on the national frequency allocation and the rules of using frequency bands on case by case basis. The rules of procedure are laid down in an NMHH decree on the seconrdary trading. NMHH shall approve the agreement if it ensures the maintenance of the technical standard of the service, the principles of efficient use of spectrum, and ensures that harmful interference is avoided. The detailed rules of the competition impact assessment are supplemented together with the Code implementation to the regulation. During the approval, NMHH will examine, in an objective and prospective manner, that: o how the market competition conditions may develop; o whether the planned secondary trade agreement (hereinafter referred to as "the agreement") ensures that competition is maintained or enhanced, o the likely impact on the investments already made and planned by market players, in particular on the construction of the electronic communications networks covered by the agreement. If certain criteria are met, NMHH will in the near future make possible for a **simplified procedure** for approving an agreement based on **notification**. It will based on the ammendment of the NMHH decree on the seconrdary trading with the Code implementation. (The new regulation is underway.) This responds to the increased demand for secondary trade caused by the needs of the verticals for 5G. In the 800 MHz frequency band, two MNOs leased each other their 2x10 MHz duplex frequency. With this, they were able to create a 20 MHz channel. In addition, they signed a cooperation agreement for network development and operation, so they built their 4G network based on shared spectrum based on geographic sharing. The agreement is under investigation by a Competition Authority.

IE	a) A suggested best practice would be to impose a minimum price where appropriate, such as where there is an opportunity for bidders to obtain access to valuable spectrum at a price below its real economic value, and therefore potentially posing risks to the efficient use of spectrum, etc. Furthermore, having determined that a minimum price is warranted, consideration could be given to the below four approaches, at a minimum, in establishing what said minimum price should be: o low but non-trivial; o administratuve cost basis; o business modelling; and o benchmarking. In relation to best practices identified in other Member States, ComReg notes that each of the four approaches noted above have been used in different circumstances in EU and non-EU countries in establishing the above referred to minimum prices. b) ComReg is in favour of maximising the release of all harmonised spectrum for the purpose for which it has been harmonised. However, in some instances, this has not been possible in order to protect essential services (e.g. Gardaí (police) operations in a portion of the 3.6 GHz band), or in providing ongoing regulatory certainty to incumbents (e.g. fixed links in the 1.4 GHz band). A suggested best practice would be for each decision related to moving incumbents from a harmonised band to be made on a case-by-case basis, with consideration given to the circumstances at the time and to how unnecessary disruption could be minimised – there is no one-size fits all methodology. In respect of best practices identified in other MS, There is great diversity across the EU in respect of how incumbents are dealt with. c) A suggested best practice would be for consideration to be given to the manner in which fees should be paid. Such considerations should not be limited to non-discrimination - but should also incorporate other relevant objectives, to include for example, proportionality, efficient use of spectrum, promoting regulatory predictability, etc. Another suggested best practice would be for consideration to be given to appropriate payment structures, taking account of particular circumstances of the award, including: o upfront payment for the full licence period; o annual fees – either fixed or indexed; o a mixture of an upfront fee to access the spectrum combined with an on-going stream of spectrum usage fees – again, fixed or

	indexed. Additionally, another suggested best practice is in respect of adopting an upfront fee combined with an on-going stream of indexed spectrum usage fees - the manner in which each amount is apportioned (e.g 50/50, 40/60, etc) should also be determined, taking into account the particular circumstances of the matter. In respect of best practices identified in other Member States and non-EU countries, great diversity has been identified. In some cases, ComReg is aware that national legislation limits what the NRA can do in this area, by defining a single or a limited methodology. d) As part of its proposed Multi Band Spectrum Award process, ComReg has considered and consulted upon the potential inclusion of 26 GHz band in the award process on three separate occasions. On each occasion, the respondents who commented on the 26 GHz band agreed with ComReg's proposal to not include the 26 GHz band in the proposed award. In Q4 of 2020, ComReg intends to publish a study on the manner in which the 26 GHz band could be utilised for 5G and the authorisation options ComReg might consider going forward. Therefore, no specific measures have been put in place and hence no best practice in this regard has emerged in Ireland so far. Furthermore, in respect of best practices identified in other Member States, there are very few examples of the 26 GHz band being released for WBB ECS in Europe, and in places where this has occurred, there has been very limited use of the spectrum. Therefore, no best practices have yet been identified. e) No best practice in respect of the above has emerged in Ireland thus far. f) No best practices in respect of the above are in place in Ireland, nor have they been identified in other Member States and non-EU countries. A suggested best practice would be for all barriers, restrictions or limitations that prevent infrastructure-sharing (active or passive) and/or joint roll-out of infrastructure, to be limited only to those barriers, restrictions or limitations brought about by competition law.
IT	a) Italy promotes adequate and equitable reserve prices which reflect the minimum levels of fees, judged acceptable for the rights of use of spectrum, following the principles of proportionality and non discrimination. Reserve prices established for the assignment of 700 MHz, 3.6-3.8 GHz and 26.5-27.5 GHz frequency bands were proportionate with the reserve or market prices in similar frequency bands already assigned, taking into account the specific characteristics of the auctioned bands and the technological ecosystem leveraging on them. When resorting to auctions the final price is by definition the new market price which can be much higher than the minimum starting price. The final price of a lot in an auction is the one resulting at the end of the different stages of offers from one or more bidders. The correspondance between the final standing bid and the final price depends on the rules of the auction. In many auctions it is the same. The reserve price can also be

	different from the minimum price, it depends on the auction rules. In any case the final price is by definition the market price if the auction is open. b) In Italy, the availability of the amount of harmonized radio spectrum as set in art. 54 of the EECC have been ensured. The rights of use of the available frequencies in the 700 MHz, 3.6-3.8 GHz and 26.5-27.5 GHz were granted in October 2018. The 3.4-3.6 GHz band was already assigned for BWA technologies, and the existing rights of use were prolonged and made available for 5G. c) In Italy, revenues generated by auctions can be paid in instalments, as established by the relevant legislation (e.g. budget law). In the 5G frequencies auction, the law provided for a discount granted to the awarded operators in case of payment of the due amount made in advance. d) In order to promote an investment-friendly access to 5G radio spectrum, that will be able to provide high-quality wireless services, as well as to foster the sharing of passive and active infrastructure, Italy defined individual but not exclusive rights of use of the spectrum assigned in the 26,5-27,5 GHz band, according to the so called “club use” model. According to this model, each licensee can dynamically use all the awarded spectrum (up to 1 GHz) in areas where frequencies are not used by other licensees. To this aim, licensees can stipulate commercial, reasonable and non-discriminatory agreements, proportionally sharing the costs. Each licence holder has the pre-emptive right in favour on its assigned block of 200 MHz. Moreover, licensees can assign to a trusted third party the task of managing the uses to avoid harmful interference as well as the access scheduling. Administration maintains the right to supervise the agreements. e) f) The Italian 5G regulation provide for many possibilities for the sharing and joint roll-out of infrastructure. For instance, in order to promote an investment-friendly access to 5G radio spectrum and high-quality wireless services, besides the definition of the aforementioned “club use” model in the 26 GHz band, it established some “collective” coverage obligations for assignee operators in the 700 MHz band. In particular, collective licensees (through reciprocal agreements) must provide at least 99,4% of population and the main national road and rail transport routes65 with 5G services. The collective coverage obligations in the 700 MHz band may be adequate to promote investment only as long as they are marginal. In other words they need to be complementary to individual coverage obligations and commercial deployments. Thus, the collective obligations need to be related to a geographic areas where coverage is not considered a priority. Since the breach of the collective obligation is charged to all concerned operators, each of them is incentivised to agree that at least one operator has to guarantee the established coverage and has tooffer roaming or other access services to all the others.

65 Motorways and high speed railways, including corridors identified at European level and connected nodes (such as stations and other important traffic nodes, e.g. ports and airports).

LT	a) The reserve prices are under consideration. However, such a provision was followed in previous auctions – Lithuania set very low reserve prices 28 962 EUR/MHz for 800 MHz and 136 612 EUR/MHz for 900/1800 MHz. b) Not the case because intention to reserve 2x10 MHz and 2x5 MHz in the 700 MHz band and 100 MHz in the 3,4-3,8 GHz band is considered for PPDR usage in Lithuania. c) Yes, it is. In accordance with draft conditions of the auction for 700 MHz band, the fees will be paid in instalments within the period of rights of usage. d) An individual authorization regime should be applied in Lithuania for the 24,25-27,5 GHz frequency band. In case the spectrum is enough to satisfy all requests, the procedure “first-come-first-serve” is applied. e) Not the case. f) In Lithuania, sharing of passive infrastructure is allowed without restrictions. Joint roll-out of active infrastructure is allowed subject to competition issues.
LU	a) Reserve prices for the 700 MHz band and the 3600 MHz band have been established based on a benchmarking that analysis and compares fees in other european countries Determination of the reserve price for the 26 GHz band will be done after the ongoing public consultation and will also consider the results of a benchmarking exercise comparing fees on an international scale. b) Spectrum is cleared as far as possible prior to the launch of spectrum assignment procedures. However, the situation may vary from band to band and local restrictions (e.g. protection of local FSS activities) may make to availability of the full amount of radio spectrum harmonised at Union level. Setting the full assignment of spectrum as one of the major objectives for spectrum auctions. c) Setting a one-off non-recoverable fee covering the first years of the licence duration in order to force operators to effectively use the allocated spectrum, then switching to an annual fee for all concerned licensees for the remainder of the licence duration. d)

	No response e) No response f) Application of the provisions foreseen be the EECC.
LV	a) At present Regulator is preparing auction of the 700 MHz band and planned reserve price is 0,018 EUR per 1 MHz/1inhabitant (license term 20 years); In comparison reserve price of spectrum in 3.4-3.8 GHz band was 0,003 EUR per 1 MHz/1inhabitant (license term 20 years) The reserve price is based on experience gained in previous auctions. The reserve price was consulted with market players and is one of the lowest in EU. From our point of view the goal to determine the reserve price is only to prevent auction from speculators and the target price should be so low as possible. Regulator doesn't charge operators for renewal of the licence. b) All three mobile operators have rights to use similar amounts of total spectrum and similar amount of spectrum in each band. For Latvian situation three mobile operators is optimal number that fosters a strong competition and each operator can have sufficient amount of spectrum. However, spectrum scarcity might be an issue in member states bordering with non-EU counties taking into account possible different use and plans of use of the bands by non-EU countries or due to a compatibility issues with other services, for example IMT in 3400-3800 MHz band and radars operating below 3400 MHz band. c) Operators pay for rights of use of the spectrum in one instalment at the end of an auction. Operators which continue to use given spectrum after the term of the licence doesn't have to pay for the renewal of the licence. Operator pays only for monitoring of electromagnetic compatibility. d) During the public consultations with market players in 2019 there was lack of interest from operators to use 26 GHz band. In 2020 a 1 GHz band was made available in 26 GHz band for public mobile network use (could be pilot projects, testbeds, cooperation initiatives etc.) re-quiring payment only for individual frequency permit request examination (first-come-first-serve principle in geographically limited area is applied until 2024). It was agreed to re-plan the whole band starting from 2024 when the market demand is foreseen to rise. An auction and assignment of rights of use of radio spectrum in 26 GHz band is planned before 2024. It is planned also to have dedicated spectrum for public mobile networks for nationwide use avoiding electromagnetic coexistence burdens and

	dedicated spectrum for private mobile networks use ensuring opportunity to operate in geographically limited areas on first-come-first-serve principle. In order to determine best possible way forward public consultations with market players will be organised in the future. e) Operators have obligation to operate specified number of base stations in specified areas. f) It is allowed to share any kind of infrastructure excluding the spectrum. At the moment in Latvia there are three fully independent sets of infrastructure of mobile networks in Latvia with operators having about the same amount of spectrum. Competition at infrastructure level is very strong.
MT	a) Spectrum reserve prices for the 3.5GHz band have been established following a benchmarking process based on EU-wide reserve prices, as adjusted in relation to population. Additionally, the price-setting mechanism was further validated against the value of spectrum scarce resources to the national market, taking due consideration of various market financial indicators including YoY incremental revenues and EBITDA figures over a decade. Spectrum reserve prices for the 700MHz band have been set at par with the spectrum fees for the 800MHz band in view of the likeness in the characteristics of the bands in question. b) The full spectrum swath for the 5G Pioneer bands will be made available on the market. c) The fees for the right of use for radio spectrum for the full license term can be paid in annual or quarterly instalments. The licensees for the 3G spectrum were also provided with the option to pay in advance the licence fee for the full term at a discounted annual rate. Such an option however is not envisaged to be adopted for the assignment of the 5G pioneer bands. d) The assignment framework for the 26GHz band is still under consideration. Malta notes that the management framework for the 26GHz band and associated fees for the rights of use, need to be adapted to reflect the diverse technical and operational parameters of the band in question as well as the national context. e) Noting Malta's highly urban setting, the absence of remote rural locations as well as its limited size, the spectrum management frameworks for the 5G pioneer bands currently do not envisage any financial incentives allocated towards specific obligations or formal commitments of spectrum users to accelerate or to expand high quality wireless coverage. f)

	Sharing of both active and passive infrastructure is allowed whenever it is technical and economically possible and subject to approval by the competent regulatory authority.
NL	a) The Netherlands has used reserve prices in the auction of the 700 MHz band and intends to do so also for the 3.4-3.8 GHz band. Reserve prices ensure that the license fees are a fair representation of the economic value of the licenses, even in the case of a limited number of bidders. In order to ensure that reserve prices are not set too high, while at the same time ensuring that this valuable public good is not given away freely when there is scarcity, we have always consulted external experts and asked them for an independent advice. In the course of the last few spectrum awards we have noted that there are various ways to determine the appropriate reserve price. We note three in particular: 1. The most prominent and often employed strategy – also in other countries – is to **benchmark** reserve prices and auction prices in other countries. The benchmark takes into account and corrects for various factors that influence reserve and auction prices. Such factors are e.g. the market size and structure, the amount of spectrum offered, the frequency band(s) in question, purchasing power differences, and more. 2. Another method is to try and model the future cashflow that license holders can reasonably be expected to create from the spectrum on offer. This discounted cashflow method requires a lot of information about possible business cases for the spectrum on offer. As such it may not be the best option for spectrum for which the business case is still unsure. 3. The third method is to model the cost reductions that can be achieved by acquiring extra spectrum. Extra spectrum, for example, will alleviate the need to densify a network to create extra capacity because the same can be achieved through adding frequencies into the network. Which one of these methods is most suited varies from case to case. Therefore we believe it is important to consult external experts before setting reserve prices. b) The Netherlands always strives to ensure that the full amount of radio spectrum that is harmonized at Union level will be made available. This can present issues when there are still existing users in a newly harmonized band. In these cases we prefer to first ensure a solution for the existing users, so that when we award spectrum we award all of the spectrum under the same conditions (excluding necessary conditions as laid down in the harmonization decision of course) and with complete certainty about the usage possibilities. This approach can mean that we are not the fastest in assigning newly harmonized frequencies. However, our experience is that Dutch market players value the certainty that this approach presents to them. This is illustrated by the fact that we have seen large investments and rapid roll-out after we complete our awards. So we believe this approach works well for the Netherlands, while we acknowledge that other approaches can be equally valid in the legal and cultural context of other member states.

	The Netherlands has assigned all of the 700 MHz band (2×30 MHz) . Of the 400 MHz available in the 3.4-3.8 GHz band, 300 MHz will be auctioned for use by MNOs. Several licenses for local and regional networks have been issued in this 300 MHz band that will expire only in 2026. Most of these licenses will be migrated to the 2×50 MHz at the edges of the band, which will remain available for private local networks. Market studies have shown that there is a demand for spectrum that can be deployed locally for specific connectivity solutions such as mission-critical communications. Private local networks are therefore seen as an important component in the 5G ecosystem. Providing various market parties with access to these frequencies is important for ensuring competition and innovation as it ensures that businesses have options and are not wholly dependent on MNOs' offerings. The authorization regime for the 24.25-27.5 GHz band is currently under study. A public consultation has been performed in 2020 to explore market demand for this band. c) In the Netherlands fees for rights of use are almost exclusively the prices that are paid after an auction. In principle, and as a result of budget rules, these prices will have to be paid immediately and in one instalment. However, exceptions are possible and what rules to apply will be decided upon individually for each award. For example; the prices paid in the recent Multiband Auction (700, 1400, and 2100 MHz) can be paid in two instalments. d) The authorization regime for the 24.25-27.5 GHz band is currently under study. It is expected that at least part of this band will be reserved for licenses with geographically limited rights of use. The Netherlands has in the recent past successfully used a first-come-first-serve procedure for awarding licenses with geographically limited rights of use in the 3.5 GHz band. Over 100 licenses were awarded for local deployments of different types, including private critical communications network, camera surveillance networks and fixed-wireless access. This illustrates how successful a fast-track administrative procedure can be. A similar procedure may be followed for the awarding of local licenses in the 26 GHz band, however this is currently under study. e) We are hesitant to use direct financial incentives. They are (very) hard to successfully employ without risking unforeseen consequences or abuse. We believe that the combination of license conditions with a spectrum auction provides an easy and more robust way to ensure that public policy goals are met for a competitive price. For example, if the policy goal is to expand high-quality wireless coverage you could set a license obligation to ensure this. This will invariably lower the value of those licenses because such an obligation will probably require unprofitable investments. This will result in lower auction revenues, but as long as the auction is competitive the policy goal will be achieved for a competitive price decided on by market players themselves. We have recently employed this strategy in our recent Multiband Auction. The 700 MHz licenses that were awarded then include an obligation to provide coverage in 98% of each Dutch municipality within 2 years after start of the license. This coverage should provide end-users with an absolute minimum service level of 8 Mbps, which should be available with a 90% certainty level. 6 years after issuance of the licenses – so in 2026 – this minimum service level needs to be 10 Mbps. This obligation ensures that mobile network coverage is further extended towards the least densely

	populated and visited areas in our country. It also ensures continued investment as the obligation requires that end-users are provided with a minimum service level. As demand for data continues to rise the obligation will require the license holders to continually invest if they want to keep ensuring that the minimum service is delivered. Next to this specific coverage obligation for the 700 MHz licenses, it is common for licenses in all bands to include an obligation for deploying a network with limited geographic area within a given number of years after start of the license. f) Sharing of passive infrastructure such as antenna masts and rooftop locations is both a common practice in the Netherlands and can be mandatory depending on local circumstances. MNOs and municipalities follow mutually agreed procedures for the deployment of shared antenna masts, and for information exchange about future roll-out plans. Installation of antenna masts higher than 5 meter, or at specific locations such as some protected town areas, requires a license from the municipality. It is mandatory for the license holder to allow other providers to install their antennas on the same masts. Masts lower than 5 meter can usually be installed without a license from the municipality. In most cases such antennas are installed on rooftops of buildings, and it is up to the building owner to allow multiple providers to share the rooftop. The providers and the authorities have agreed a procedure (the "antenna covenant") on how local authorities will be informed about planned deployments of license-free antenna installations. Active sharing is possible, subject to competition law, but has so far not been applied by the Dutch MNOs.
PL	a) Before launching first auction as well as at the current stage of preparation for new auction for 3,4-,3,8 GHz band the President of UKE had conducted analyses of reserve process for frequencies from C band that was used by regulatory authorities across Europe and also outside Europe. Comparing market and social circumstances (amount of offered spectrum, availability of spectrum after conducting selection procedure, amount of population, coverage obligations etc.) alongside with reserve prices was one of the factors leading to set adequate reserve price in auction. The other was the analysis of possible directions of development in the Polish telecoms market, in particular expectations and possibilities to roll out infrastructure based on assigned spectrum. Important factors for adequate reserve price are coverage obligations as well quality obligations imposed on winners of auction. b) As a principle the NRA takes necessary steps which allow to fulfil requirements of making available full amount of harmonized spectrum. However, this may not be always possible due to an obligation to respect current spectrum reservation decisions which will be used even for a few years in some areas. Nonetheless, full amount of spectrum in C band is going to be offered in auction with the proviso that some sub bands - in particular areas - will be available for use from specific date. In order to prevent reservations renewals and to assure that harmonized radio spectrum may be available to the biggest extent, the President of UKE (NRA), according to provisions of the Telecommunications Law, may ex officio issue a decision stating that it is not possible to make frequency reservations for the next period for the specific reasons, in particular due to the need to ensure equal and effective competition or the need to significantly increase the efficiency of frequency use. The proceedings shall be commenced not earlier than 4 years before the expiry of the period of frequency use. The President of UKE issued such decisions prior to launching first auction procedure. c)

	Polish law fulfils this condition. According to the Telecommunications Law Act an entity that has received the right to use a frequency subject to a general exclusive frequency license shall pay annual fees for the right to use this frequency. Additionally, Ordinance of the Council of Ministers of 6 December 2013 on annual fees for the right to use frequencies specifies that the annual fee shall be paid once for the whole year by the end of February of that year or in instalments: quarterly at the amount equal to 1/4 of the annual fee by the end of January, April, July and October of a given year or semi-annual at the amount equal to 1/2 of the annual fee by the end of February and August of a given year. d) Poland plans to assign 26,5-27,3 GHz (width of 800 MHz), however currently we are not able to decide which authorization regime would be applied to the entire 26 GHz band. Relevant public consultations on market players' interests in this band were held this year. Operators stated that 26 GHz band should be ready to use not earlier than in 2022. Regulatory aspects of 26 GHz band allocation are to be further discussed internally. e) As the main solution leading to acceleration or expanding high-quality coverage we consider coverage obligations. They are currently subject to internal analyses with regard to pioneer 5G bands, in particular before launching 3,4-3,8 GHz auction procedure. Currently we are not able to make decisions on possible financial incentives or shape of coverage obligations in other pioneer 5G bands. f) According to the current Telecommunications Law in force general exclusive frequency license may be granted to several users. In such case the President of UKE shall set the conditions of shared use of spectrum in particular with regard to ensuring the possibility of managing end user's service by an authorized telecommunications undertaking and making decisions on the provision of services for his/her benefit or granting access to technical interfaces, protocols or other key technologies that are indispensable to ensure service interoperability. Besides this, operators holding spectrum use rights are allowed to transfer and lease spectrum licenses which are set on general basis in Polish Telecommunications Law. Specific provisions of leasing and transferring frequencies are set out in article 122(1). Operators who are granted with frequency spectrum licenses have general right to make such licenses a subject of leasing and transferring, however on condition that an entity to whom the frequencies are about to be leased or transferred for use is going to use them in accordance with other provisions of the Telecommunications Law, in particular section regarding spectrum management, and the requirements specified in a general exclusive frequency license. Additionally, such frequency that is about to be leased or transferred shall be notified to the President of UKE. However, current Polish Telecommunications Law is about to be changed in accordance with ongoing process of EECC implementation in Poland. Currently, the draft provisions of new legal act that contain solutions that allow directly to impose sharing obligations in spectrum management are being discussed. For example, pursuant to article 47 of the EECC when attaching conditions to individual rights of use for radio spectrum, competent authorities may, in particular with a view to ensuring effective and efficient use of radio spectrum or promoting coverage, provide for the following possibilities: a. sharing passive or active infrastructure which relies on radio spectrum or radio spectrum;

	b. commercial roaming access agreements.
PT	a) Reserve prices should be settled aiming at incentivising that the spectrum is awarded to the entities that values it the most: the price should not be too low that could encourage speculative bidders and, at the same time, should not be too high that could hamper discovering the spectrum value at the auction. As far as possible, reserve price shall take into account the conditions and obligations being imposed. Benchmarking of the reserve and final prices in other European countries provides useful information and its analyses have been used in PT in setting the reserve prices in previous awards. Reserve prices should be set below the average of the benchmark which, among other reasons, will therefore allow price discovery. b) Subject to market demand, spectrum should be made available as soon as the technical harmonisation is agreed. To simultaneously award the entire harmonised spectrum in a band including parts of it that are still subject to rights of use but that will be due in the medium term (e.g. 5 years). For example, in the 3.6 GHz award, we are awarding the whole band although part of the band in certain regions will only be available in 2025, date when the existing rights of use in the band will be due. To make available in subsequent awards spectrum that was not awarded in previous ones. c) In Portugal there are 2 major types of fees that can be applicable: access to the spectrum, (i.e., the final prices resulting from the auction) and annual fees for the usage of the spectrum. As best practice: o payment of the access to spectrum fee has been allowed to be paid in instalments (between 1/3 and 1/2 of the access fee has been allowed to be paid in the period up between 5 and 7 years after the licence is granted); o annual fees can be lifted in special circumstances, namely: ▪ considering the high investment to deploy a network from the beginning, for new entrants for a limited period (e.g., our law

	provides, currently, for a reduction of 50% for the first 3 years applicable only to new entrants). ▪ again, considering the high investment that is required from operators and aiming to encourage a quicker deployment of 5G networks, for the rights of use in the 700 MHz and 3.6 GHz bands granted in the 5G action award (our law provides that these rights be subject to a reduction of 80% on the annual fees during their initial term66). d) To apply a "first-come-first-serve" regime, after listening to the market players (applied when the band was used by FWA). **Note**: A public consultation on the 26 GHz band is under preparation. Among others, the amount of spectrum to be made available (on a global and local basis), the adequate timing and the authorisation regimes, are expected to be addressed during the consultation. e) The practice in PT has been to include obligations, namely roll-out obligations, as conditions applicable to the rights of use and are clearly integrated in the award rules. By letting bidders know in advance the conditions in the award rules, as well as by setting reserve prices at the adequate level namely taking also into account the obligations being imposed, the objective of accelerating and expand high-quality wireless coverage can thus be achieved. Notwithstanding, in order to encourage operators to provide high speed coverage to specific facilities and infrastructures in a quicker manner, a reduction on the amount of fees due to the use of spectrum can be given to the spectrum holders that commit to a specific objective (e.g. we have recently provided that spectrum holders who undertake to ensure, individually or jointly, mobile broadband coverage with a minimum speed of 100 Mbps in all public schools of all levels of education and the Northern railway line by 1st January 2022 will benefit from a reduction of 10% in the usage fees applicable to spectrum for terrestrial electronic communications services). Deferred payment of the access fees has also been allowed, as well a reduction in the annual fees (see answer to c) above). This flexibility can also play a role in the operators' business plan thus helping to accelerate coverage. f) To foresee that the roll-out obligation, which also provides that some of the stations be installed in areas which may commercially be less attractive, gives operators the flexibility to reach these areas through passive or active sharing (applied to the 3.6 GHz band in the award currently ongoing). Allowed an operator to use national roaming in order to fulfil coverage obligations in areas that may commercially be less attractive (applied to the 700 MHz band in the award currently ongoing). There are some agreements between mobile operators regarding the joint roll-out of infrastructure that relies on the use of radio spectrum, which can

66 See Administrative Rule n.º 1473-B/2008, from December, 17, in its current version, namely revised by Administrative Rule n.º 270-A/2020 from November, 23 (https://dre.pt/web/guest/home/-/dre/149220145/details/maximized?serie=I).

	be beneficial at several levels (cost reduction of network roll-out and regarding network energetic efficiency) and should be promoted, if safeguarding the competition law. There is a tendency, in Portugal and in other European countries, for the sell-out of mobile towers to a neutral wholesale operator, which may have also the same benefits mentioned in the previous bullet.
RO	a) The levels of the minimum values of the proposed license fees were established in a proposal of Government Decision67 and were objectively justified in the light of the technical-economic characteristics of the radio frequencies subject to the selection procedure. The proposed license fees are comparable to the values resulting from competitive selection procedures in other states of the European Union and reflect, in a reasonable manner, the relevant objectives and criteria identified by ANCOM. Moreover, private transactions of licences and the minimum values obtained thereof, by reference to the historical values of the licenses (national references of values resulting from procedures competitive selection), were considered for assessing the market value of spectrum. b) The full amount of radio spectrum available in the 700 MHz (with the exception of one block of 5 MHz in the SDL subband, which is reserved for BB-PPDR) and in the 3.4-3.8 GHz band (i.e. 400 MHz) will be put to auction during the forthcoming competitive selection procedure to award new spectrum usage rights in several frequency bands (including the 700 MHz and the 3,4-3,8 GHz bands). After a public consultation in 2019, due to some pending legislative processes at national level relevant in order to complete the process, the final documentation for the organization of the aforementioned competitive selection procedure will be updated in the near future following the comments and proposals received from the market players. For the 24.25-27.5 GHz band, after a public consultation process held in the first part of 2019, in order to adopt the national strategy for the awarding of spectrum usage rights in several frequency bands (including the 700 MHz, the 3,4-3,8 GHz and the 24,25-27,5 GHz bands), the national market unanimously agreed and ANCOM decided not to include this band in that competitive selection procedure but to organize a separate subsequent process in this respect. Due to the situation described above, a calendar for the granting of spectrum usage rights in the 24,25-27,5 GHz band has not been established yet, but this will be decided after a new public consultation scheduled to take place by the end of this year, having in mind that there is not a clear evidence of market demand. c) The draft Government Decision regarding the minimum values of the license fees for the granting of rights to use radio frequencies, as well as the conditions for paying the license fee, for the forthcoming competitive selection procedure, provides that the fees due for some licenses, for which the start date will be 2025, within the 3400-3800 MHz bands, be paid in 5 instalments. Regarding the tariffs due for the use of the radio spectrum, the Decision of the President of ANCOM no. 551/2012 on setting the tariff for the use of

67 This Government Decision was in the public consultation process and in the present is in the process of inter-institutional approval.

	spectrum, as amended, provides that they are paid annually (for amounts of less than or equal to 200 euros) and quarterly (in the opposite case) by the licensee. d) No measures taken yet, as a calendar for the granting of spectrum usage rights in the 24.25-27.5 GHz band has not been established for the time being [as detailed in our answer above under item b)]. However, several options for the authorization regimes are contemplated, including various possibilities to allow geographically limited rights of use in the 26 GHz band. e) There is no relevant national practice in this regard. f) For the time being, there are no legal provisions in force regarding the sharing of radio spectrum (active sharing). Radio spectrum, a scarce resource, may be used currently only by the licence holder (in case of individual rights of use). After the transposition into national law of Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European electronic communications code, the national regulatory authority shall apply the principles arisen from Article 45 (2) b) and Article 47 (2) a) of the EECC.
SE	a) The main goal with the allocation of spectrum in Sweden is to maximise the long term societal value of the spectrum use. With this as the starting point the reserve price is set taking into account the identified value of alternative use and taking into account that an auction process should be efficient (this could lead to a higher reserve price closer to the probable market valuation). Maximising or increasing the income to the state from spectrum auctions have never been a design criteria. We would also like to point out that the yearly fee could have a substantial impact on the cost of a license over the total term of the license. In Sweden the license fees for spectrum licenses are based on cost recovery. The total amount of the fees collected from all licensed users of spectrum are based on PTS costs for spectrum related operations, this means that spectrum fees are minimised and gives the licensees a good economic long term predictability about the total cost of the license over the complete license term. License fees for block licenses are also designed ass flat rate fees, and there is no extra license fee connected to additional transmitters within the licensed spectrum which in turn means that there is no economical penalty for building a denser and more capable network. This is something that we think promotes the rollout of higher capacity networks that need more transmitters. b) Maximising the long term societal value of the spectrum use is the governing principle in Swedish spectrum management. As a general rule we aim to assign full amounts of radio spectrum as early as possible to meet issues of scarcity. With the introduction of 5G technology we have noted that the

	new possibilities introduced by the technology may open for new uses as well as new users apart from traditional mobile operators. To meet this development we take note of the demand situation in the Swedish market and also developments in other markets primarily within the European Union in order to ensure that we take into account shifts in demand and new users as well the possibilities and developments in the assignment processes this may result in. Sweden has also seen the effect of not being able to allocate a sufficient amount of spectrum when allocating the licenses in the 700 MHz band. Due to a political decision in Sweden 2*10 MHz of the available 2*30 MHz FDD spectrum in the 700 MHz band was exempted from the 700 MHz auction. This limited the amount of available FDD spectrum in the auction to 2x20 MHz. Going into the auction the market situation was the following, there were four major facility based operators, but due to a network sharing agreement between two of them in practice three parties actively building out new networks. With tree parties competing over the limited amount of spectrum of 2x20 MHz the auction resulted in an unusually high price on MHz/pop basis (compared with other Swedish auctions). Two years after the 700 MHz auction Sweden have still only allocated 2/3 of the FDD spectrum in the 700 MHz band and the remaining 1/3 is in practice unused awaiting further political decisions. The paragraphs above are an assessment made by the Post and Telecom Authority. The Ministry of Infrastructure would like to add the following clarification: Due to the geopolitical development, the Swedish government finds that it is vital to ensure efficient and secure ways of communication for Public Protection and Disaster Relief (PPDR) purposes. Consequently, the government has decided to withhold 2*10 MHz from the 700 MHz auction. c) Unlike several operators in other countries in Europe the Swedish operators have not been hit by the slump in the mobile market during 2010-2020. This means that they have relatively strong balance sheets that give good access to financing in the commercial market when preparing for the 5G rollout. Taking this into account in combination with auction designs that is not trying to maximise the income for the state and yearly licensing fees based only on cost recovery and with no penalty for building out more base stations/densifying networks. Our current assessment is that there is no immediate need to shift to a fee structure based on instalments. d) In April this year, PTS published information on its planned intentions regarding the future use of the 26 GHz band. As part of this PTS is intending to introduce the possibility to acquire local licenses suitable for 5G use in the lower part of the band. The work with developing the suitable fast-track administrative procedure for these local license is ongoing and it is expected that licenses will be available during 2021. e) Due to the high population and geographical coverage that is already available in Sweden we see the need for more targeted requirements and commitments in identified geographical areas. Our assessment is that this makes obligations more transparent and directs the buildout to areas where there is an identified benefit with adding new and/or improved coverage. f)

	In Sweden active and passive infrastructure sharing has been used in both the 3G and 4G rollouts. There are currently three network sharing companies in the form of joint ventures active on the Swedish mobile market: 1. 3G Infrastructure Sevices Aktiebolag (3GIS) 2. Net4Mobility HB 3. Svenska UMTS-nät AB (Sunab) <u>A description of network sharing in Sweden:</u> Although the four major operators in Sweden – Telia Company (35 % market share1), Tele2 (29 % market share), Telenor (19% market share) and Tre (14 % market shares), are in principle vertically integrated, they have to some extent separated parts of the radio access networks through network sharing. The operators buy network capacity from a wholesale supplier in the form of a jointly owned network partner. Network sharing mean that operators can share investments in radio communication networks, operating and maintenance costs for the network, and if the network sharing is extensive, share spectrum, which gives the wholesale buyers of network capacity access to the companies' total spectrum holdings. Each operator have their own core networks and provision their own services. The network sharing only covers network capacity, and transmission network to closest possible interconnection point to their own core networks. The three companies that provide network sharing, and that provide network capacity at the wholesale level, deliver only to their respective owners. Both Sunab and Net4Mobility are legal entities rather than independent network companies, as each owner company performs the service production on behalf of the network sharing company, which is controlled by the owner companies. 3GIS, on the other hand, has an independent organization with its own physical network, but it is limited to outside the main urban areas, which implies that it is a form of geographical network sharing. **3G Infrastructure Services Aktiebolag (3GIS)**: The company's task is to manage the infrastructure that will enable the owners, Telenor and Tre, to provide their customers with mobile services via UMTS (3G) outside the main urban areas in Sweden. This includes, if necessary, building and developing the network for coverage, functionality and capacity. The company is responsible for the 3G infrastructure in Sweden with the exception of the metropolitan areas of Stockholm, Gothenburg, Malmö and Karlskrona, where the operators have built their own networks. ***Net4Mobility****: Net4Mobility's mission is to build, operate* and own a mobile radio access network with associated transmission network. The company's owners Tele2 and Telenor buy their network capacity from Net4Mobility. Description from the annual reports: 2018: The object of the company's operations shall be to build, operate and own a national GSM and LTE network with associated transmission network and sell network capacity to the company's owners and conduct associated operations. 2019: The company has made continued progress in the ongoing network expansion, which aims to expand both the geographical coverage of the mobile network and strengthen it with capacity where needed. During the year, the company also carried out planning and preparations for future network modernization, which will also include the introduction of 5G.

	Svenska UMTS-nät AB (Sunab): Svenska UMTS-nät AB builds, owns and operates a UMTS network (Universal Mobile Telecommunications Systems) and sells network capacity to Telia and Tele2. The actual construction and operation of the UMTS network is outsourced to Telia and Tele2 in different geographical areas. About the process of approval of the sharing/pooling scheme currently in use in Sweden: What part of the MNOs request/process was evaluated/approved by NRA? Net4Mobility: The transfer of frequency licences from Tele2 and Telenor to Net4Mobility was in 2011 subject of analysis comprising competition issues like how it would affect the retail market, how it would affect competition between the network operators. As this concerns horizontal cooperation PTS analysed the share of common costs derived from the network sharing company. What part of the MNOs request/process was evaluated/approved by the Competition Council? The Competition Authority evaluated the setup of the network sharing companies Sunab and 3GIS around 2001, and after some modifications of the agreements cleared these. But the Competition Authority has not been involved in issues of spectrum leases or transfers.
SI	a) In Accordance with Par. 8 of Art. 60 of ZEKom-1/ECA the reserve prices are calculated taking into account: 1. the supply and demand for tendered frequencies, 2. the development of the market to which the tendered frequencies apply 3. the level of such payments in other EU countries, 4. It may in no case be so high as to hinder the development of innovative services and competition in the market. b) According to Par. 3 of Art. 33 of ZEKom-1/ECA, decisions allocating radio frequencies for the provision of public communications services (licences) to end-users shall be issued on the basis of a public tender without a call for interest. c) According to Par. 8 of Art. 60 of ZEKom-1/ECA a fee shall be paid for the efficient use of a limited natural resource for all radio frequencies allocated on the basis of a public invitation to tender in order to ensure the optimal use of the allocated radio frequencies. This shall be a revenue of the state budget. The minimum amount of this fee and the method of its payment shall be determined in the decision on the initiation of a public invitation to tender procedure. d) According to Par. 3 of Art. 33 of ZEKom-1/ECA in Slovenia all frequencies for the provision of public communications services to end-users shall be issued on the basis of a public invitation to tender, without the procedure referred to in Article 36 of this Act. e) In 2014 Auction – 800 MHz obligations were combined with lower reserve price for special lot A2. Reserve prices were very low (10x lover than

	normal) but not trivial but hrere were quite severe obligations linked to this lot: In addition to the general coverage and deployment obligations, the applicant who got A2 block had to provide: o mobile broadband services at a bit rate of at least 10 Mbps downlink (outdoor) to at least 95% of the population of the Republic of Slovenia within 3 years, o within the scope of covering 95% of the population coverage to at least 75% population coverage in each of the selected settlements from the list of settlements with bad coverage: ▪ 75 selected settlements after first year from, ▪ another 75 after the second year (150 total), and ▪ another 75 after the third year (225 total) The service substituting for fixed wireless broadband access (FWBA) by installing appropriate internal or external customer-premises equipment (CPE) with a suitable antenna, providing a transfer speed for a user experience of at least 10 Mbps downlink and with a minimum data transfer rate of at least 2 Mbps, and terminally assured uplink speeds of at least 1 Mbps. FWBA service was obligatory only for those addresses of permanent residences and businesses, which did not have the option of receiving a suitable alternative broadband connection with a bit rate of at least 10 Mbps, and which are within the area of coverage for individual settled locations, even if they are not a part of a settlement or a contiguous group of settlements from the list. f) Frequency pooling and active sharing, including dynamic spectrum sharing are permitted in challenging areas such as: o Remote areas where coverage is very expensive o arts of roads, railways and state border exceeding general coverage obligations o Buildings where is a restriction on space interventions/building restrictions o and indoor. In case network densification needs to secure very high capacity base stations offering Gigabit speeds, frequency pooling and active sharing, including dynamic spectrum sharing are permitted also: o on road and city infrastructure (e.g., lamp posts, traffic lights …) o on railway and energy infrastructure o in dense venues (convention centres, concert halls, stadiums, bus and train stations, shopping malls, factories, ports, airports …)
SK	a)

	First step for setting reserve price in Slovak Republic is benchmark. However, there are big difference between different countries so also another circumstances should be considered as situation on the market, coverage obligation, and duration of the license and so on. Slovak Republic promotes roll-out of 5G networks and in the tender for 700 MHz tried to apply principle of lower reserve price. In addition to the coverage obligation for provide 5G service we set the reserve price for 700 MHz band, which was lower than for 800 MHz band due to the support of faster roll out of the 5G network. b) Slovak Republic supports assignment of the full amount of harmonized spectrum if there is a demand. c) NRA of Slovak Republic charges two types of the fees: disposable fee for granting a license and annual fees for rights of use the radio spectrum. The first one depends on the result of tender and the second one is charge monthly / quarterly (depend on the operator decision) throughout the duration of rights. Slovak republic also applies the rule of postpone of annual fees for rights of use the radio spectrum for at least one year if the new technology is being introduced. d) We are considering this option. However, the process of authorization depends on the demand for frequencies from this band. NRA have started a public discussion on the future use of the frequency band 26 GHz in order to identify demand. e) Slovak Republic didn't apply this option up to now, but we cannot rule it out in the future. f) Yes. Slovak Republic fully supports sharing of the passive and active infrastructure and also frequency spectrum sharing, but it can´t cause a distortions of competition on the internal market. So sharing of spectrum should be agreed by NRA. In the tender for the 700 MHz band we have specified that the network sharing and national roaming would be acceptable for meeting the coverage obligation for 5G.
NO	**----introductory note----** **<u>700 MHz</u>**: In November 2015 the Norwegian Government decided to dedicate the 700 MHz band (694-790 MHz) to mobile broadband communications services. The current license holder in the band (that used the band for digital terrestrial television (DTT)) was compensated NOK 150 000 000 by the Norwegian Government to release the band for mobile services from 1 November 2019, even though the DTT-licence originally expired in June 2021. The Norwegian regulator authority on electronic communication, Norwegian Communications Authority (Nkom) awarded the 700 MHz band in Norway in June 2019, and this was the first 5G auction in Norway. The award included the entire 700 MHz band (703-733 MHz / 758-788 MHz). The band could be used for mobile broadband from 1 November 2019. The spectrum licences are valid from 1 November 2019 until 31 December 2039.

	The winners were allowed to postpone their payments of the auction price for up to two years in exchange of further roll out. In July 2020 the Ministry of Local Government and Modernisation decided a further postponement for the third MNO, Ice (the smallest MNO in Norway with a market share of about 11 percent) The Ministry decided: 1. deferment of payment of NOK 303 million from the spectrum prices from the spectrum auction of 700 MHz MHz band. The payment is deferred from 2021 until 2025. 2. according to Norwegian Communications Act, the Norwegian government may claim annual fees. Spectrum charges/annual fees for all frequency bands that Ice holds, due to be paid in 2021 and 2022, is deferred until 1 February 2025. In return Ice commits to investing NOK 259 million in telecommunications infrastructure in the years 2020-2022. The decision of deferment of spectrum payments was based on the Norwegian government objective on realizing three mobile networks in Norway. Ice has stated that the deferments have a very positive cash flow effect for Ice and gives them the opportunity to continue to invest in mobile infrastructure in the coming years. The licences are valid from 1 November 2019 until 31 December 2039. In recent years, the duration of frequency licences for mobile communication has been set for 20-year terms. This will provide certainty for operators to undertake long-term investments. **3.4-3.8 GHz**: 3610-3800 MHz was awarded late 2015 after the two largest MNOs applied for spectrum in the band. Since the licences allow are technology and electronic communications services neutral, the two providers that holds spectrum could start the 5G roll-out and launched 5G commercially in 2020, and started testing even earlier. The licences are valid until 1 January 2023, and the full 3400-3800 MHz band will, according to plan, be awarded well in advance of the expiry date, as the auction is planned for mid-2021. In the upcoming award for the 3.6 GHz-band, Nkom has recommended that the licences are valid from 1 January 2023 until 31 December 2043. **26 GHz**: Nkom conducted a public consultation in June 2019 to clarify if there was any market demand for this band in Norway. The results indicated no demand for the band for the next few years. In Norway the 26 GHz band is currently in use for fixed services and there are granted several transmission licences in the band. Exciting rights have some far been renewed for one year at the time. Several licenses for test and R&D are given within the 26500-27500 MHz band. **----end of introductory note----** a) Nkom uses benchmarking to find an appropriate reserve/starting price in our auctions and estimates of the value of a licence in Norway. In almost every auction the end price has exceeded the reserve/starting price, which indicates that the initial prices has not been set too high. One of our highest priorities is to put spectrum into use, i.e. to make spectrum available to the market when there is a demand for it. **700 MHz**:

	In the 700 MHz auction in June 2019 Nkom awarded licences for the use of 2×30 MHz of spectrum in the 700 MHz band (and 2×15 MHz of spectrum in the 2.1 GHz band.). The reserve prices for individual frequency blocks were set differently due to coverage obligations. Nkom awarded four blocks without coverage obligations with a reserve price of NOK 125 000 000 (estimated based on benchmarking). One block was subject to a coverage obligations for designated railway sections and the reserve price was reduced to NOK 30 000 000. One block was subject of a coverage obligations for main motorways/highways and the price was reduced to NOK 55 000 000. The reduced reserve prices for blocks with coverage obligations were set after assessments, calculations and estimates of the cost of meeting the obligations etc. Participants also had an opportunity to offer to take on an additional coverage obligation on main motorways in exchange for a discount on their licence price, but this optional obligation remained unassigned. The process ended with the following assignments: o Telenor, the largest MNO, was assigned 2×10 MHz of spectrum in the 700 MHz band subject to the coverage obligation on main highways, for a total auction price of NOK 180,000,000; o Telia was assigned 2×10 MHz of spectrum in the 700 MHz band subject to the coverage obligation on designated railway sections, for a total auction price of NOK 217,881,000; and o ICE, the smallest MNO, was assigned 2×10 MHz of spectrum in the 700 MHz band and 2×15 MHz in the 2.1 GHz band, for a total auction price of NOK 337,176,000. The coverage obligations are to be fulfilled before 31 December 2025. All winners were allowed, and has accepted, postponement of their payments, if they in return invested NOK 250 000 000 in new or improved coverage. **<u>3.4-3.8 GHz</u>**: When parts of the band was awarded in 2015, the prices were NOK 500 000 for a 10 MHz block and were set as upfront fees. The spectrum was awarded without using an auction since there were only the two operators that applied for spectrum and there was no excess demand. In the upcoming award, for the full 3.6 GHz-band, in mid-2021 Nkom has recommended that the 3.6 GHz band will be packaged into blocks of 10 MHz TDD. The reserve price for these lots is NOK 25 000 000. Reserve prices are assumed to be set at moderate levels by comparison to prices achieved in other awards. **<u>26 GHz</u>**: The reserve prices for the 26 GHz band have not been discussed at this point in time since no decision has been taken on the authorisation regime. National block licences may not be selected in (parts of) this band due to the physical properties of the mmWave band. b) As mentioned above, one of our highest priorities is to make spectrum available to the market when there is a demand for it. Hence, we have no interest nor history of setting aside spectrum if there is an interest for it. That said, we conduct assessments as part of our auction preparations in order to know what the best usage for å certain frequency band would be, i.e. assessing if there should be set asides for private/verticals in the 3,6

	GHz band. **700 MHz**: After conducting assessments on efficient use and socioeconomic assessments on use of 2 x 30 MHz regarding whether parts of the 700 MHz band should be set aside for a dedicated network for high speed broadband service for public safety (PPDR), the entire band was awarded to the MNOs in June 2019. This was considered the best solution given, amongst others assessments on which usage of the spectrum will facilitate the most efficient, and socioeconomically most beneficial, use of the resources and the minimum required amount of spectrum needed to make efficient investments for building the infrastructure for mobile broadband. It was the Norwegian government that finally decided that 2 x 30 MHz should be made available for commercial operators. The decision was in accordance with Nkoms recommendation and the joint recommendation from the Directorate for Civil Protection (the owner of the current TETRA based PPDR-network in Norway (Nødnett)) and Nkom that the next-generation emergency communications network shall be realized within commercial networks. **3.4-3.8 GHz**: There is an ongoing discussion on awarding the entire band or reserving spectrum for verticals/industry. Nkom has provided its assessment on the matter and it will be decided by the Ministry of Local Government and Modernization as part of the overall framework for the award. **26 GHz**: Not relevant at this point. c) **700 MHz**: Winners could decide to postpone payment of parts of the auction price for two years, if they committed to invest NOK 250 000 000 in new and improved coverage within these two years. This was a new arrangement for spectrum auctions in Norway, and the aim was to speed up network roll out. All three operators that acquired spectrum in the auction decided to invest NOK 250 000 000 in coverage in order to postpone their payments for two years. **3.4-3.8 GHz**: In June – September 2020 Nkom conducted a public consultation on the overall framework for the award of 3400-3800 MHz band, which will, according to plan, be awarded together with the 2.6 GHz band in mid-2021. Nkom wants to continue the arrangement from the 700 MHz award with instalments and presented two different instalment options in the consultation. One alternative is to pay the action price over a period of five years with no annual interest rate, or the licensees could pay the auction price over the full licence period (20 years) with 6 percent annual interest rate. The final solution for postponement of payment is yet to be decided by the Ministry of Local Government and Modernization. **26 GHz**: Not relevant at this point. d)

	<u>26 GHz</u>: The authorisation regime for the 26 GHz band has not been concluded as our preparations of awarding the 26 GHz band has not started. What we present here is there for merely initial thoughts and has not been review internally. Since the mmWave has limited range and the 26 GHz band could be an attractive band to boost local coverage or for enterprises/verticals, one possibility is to award the full band as general authorisation. In that sense it is interesting to see whether or not the CBRS scheme or other databased solutions is suitable in this band. One could also consider to use parts of the band for set aside for verticals/enterprises, due to the current HW development the lower part of the band seems like the preferred option. These resources could for instance be awarded as general authorisation, the upper part of the band could then for instance be awarded as national block licences. e) Historically coverage obligations has been set as general obligations to cover a percentage of the households, but as the general LTE population coverage in Norway is north of 98-99% more specific obligations (like coverage of specific rail and road sections) has been used in the latest awards. In addition roll out obligations has been used to compensate for postponed payment of the auction price. **<u>700 MHz</u>**: One of the main objectives of the award was to improve coverage and capacity of mobile broadband services. All of the spectrum offered in the 700 MHz band was subject to an obligation to provide coverage to 40 percent of the Norwegian population within 5 years. In addition, two of the blocks offered in the 700 MHz band were subject to special coverage obligations to be fulfilled before 31 December 2025: o one block was subject to an obligation to cover railways; and o one block was subject to an obligation to cover main motorways. All the winners in the auction had the possibility to postpone payment of 90 percent of the auction prices for two years (10 percent payed 1 November 2019 and the rest is due 1 November 2021) given that the winners invests a minimum of 250 MNOK before 1 November 2021. The investments shall achieve new or improved coverage, including 5G coverage. The amount of 250 MNOK shall among other things be used to build a least 100 new base stations before 1 November 2021. **<u>3.4-3.8 GHz</u>**: There was no coverage obligation when the 3610-3800 MHz band was awarded in 2015, and if there should or should not be obligations for the upcoming award is not decided. **<u>26 GHz</u>**: Not relevant at this point, but due to the physical properties of the mmWave it does not seem efficient to set coverage obligations in this band. f)

	Conditions may be attached to spectrum licences according to the Norwegian Electronic Communications Act, and may include conditions on actual and efficient use of spectrum including the possibility of sharing passive or active infrastructure or joint roll-out of infrastructure.

Member State	Best practice in other MS and non-EU countries
AT	a) Apart from benchmarking there are not so many options on the table to set market price related reserve prices. An alternative to benchmarking is business modelling. A business model aims to calculate the incremental values that additional spectrum holdings bring to the operators. On this basis market prices can be estimated. d) The Club-Use-Model chosen in Italy is an interesting approach for the 26 GHz band. Generally, use-it-or-share-it models might be good trade-off between granting individual usage rights on the one hand and allowing other users to use the band if the owner of the usage right does not use the band on the other hand.
CZ	e) In any case either mobile or fix VHCN networks coverage and QoS need to be improved at higher speed. We noted the measures taken by Germany https://europeansting.com/2020/11/13/state-aid-commission-approves-german-nation-wide-scheme-to-support-deployment-of-gigabit-networks-in-germany/
HR	a) Examples can be found in MS auctions with low reserved price for blocks with coverage obligations and/or lowering of final price in case of acceptance of additional coverage obligations. e) *See answer under (a).*
IE	e) A range of diverse attempts have been identified in other Member States to financially incentivise licensees either directly or through discounts offered at the spectrum award stage, however no best practices have yet emerged.
IT	b) The packaging system used in France for the 3.4-3.8 GHz band, where the auction was conducted in two steps, can be considered a best practice: in the first step the bidders competed for the baseline blocks; in the second step the winners of the first phase competed for additional spectrum. Despite the above practice seems of great interest, in theory, however it seems nevertheless necessary an in depth analysis before considering it suitable in the Italian context.

	c) d) e) Reverse auction for discounts for additional coverage of underserved areas in the second 5G auction in Austria. The coverage packages of underserved areas attached to different spectrum blocks in the 4G auction in Denmark.
LV	a) We may not have all information about all countries, but we believe our reserve prices are among the lowest. b) c) d) e) To our understanding Austria has similar obligations.
PT	a) In the RSPG Report on efficient Awards and Efficient Use of Spectrum, dated February 2016, the following conclusions, which to our mind are still relevant, were reached: • "*Optimising reserve prices play an important role in the auction*" therefore, in defining the PR, consideration should be given to the following: o *"higher reserve prices reduce the gains from engaging in tacit collusion"* (bidders may artificially lower their bids in order to get spectrum cheaper); o "*reserve prices that are set too high will reduce the scope for price discovery in the auction*"; o "*If prices are set at a level above true opportunity cost, they may result in unsold spectrum lots*"; o if *reserve* prices are set too low, "*they may attract the participation bidders without the prime objective to acquire and use spectrum but rather to affect other bidders or the outcome of the auction thus undermining the overall policy objectives of the award, causing an inefficient outcome*"; • *"Benchmarking is one input, amongst others, that may be used to set reserve price* (…) *but results need to be interpreted carefully to take account of specific circumstances*".

***Question 22**: Other means to incentivise substantial investments by radio spectrum users in the roll-out of 5G networks when authorising radio spectrum in the 700 MHz, 3.4-3.8 GHz and 24.25-27.5 GHz frequency bands.*	
Member State	**National best practice**
AT	An investment-friendly framework such as a sufficient license duration that allows operators to earn back their 5G investment. The license duration of the 700 MHz, 1500 MHz and 2100 MHz licenses are more than 24 years.
BE	BIPT believes that it is essential to provide for enough spectrum in the 3.4-3.8 GHz band. We therefore too decided to alleviate the pressure on this band by opening up another band (3800-4200 MHz) for private 5G networks. This will reduce competition in the auction and avoid inflation of the auction result.
BG	
CY	No response
CZ	No response
DE	The entire 700 MHz band was awarded to MNOs by auction. 300 MHz of spectrum in the 3,4-3,8-GHz-band were awarded to MNOs by auction. The other 100 MHz are available for exclusive licences on a local basis for example on industrial prem- ises. The entire 24.25-27.5 GHz frequency range is reserved for exclusive licences on a local basis.
DK	In Denmark there are made no specific initiatives to incentivise investments, however it is possible to get a time-limited licence in 3.5 GHz (until the licences in 3.5 GHz are issued as a result of the upcoming auction), which could be used to test any 5G services.
EE	Duration of licences is not limited. Spectrum fees are not high.
EL	License obligations can be fulfilled using all the frequencies are assigned to each operator.
ES	**National Strategies** o **National 5G Plan** (2018-2020) published in 2017 ▪ A Public consultation was held in July 2017, and the national Plan was developed on the basis of the 51 answers presented by the different stakeholders. ▪ Within the main activities included were the auction of the 3,6-3,8 GHz band or the publication of the 700 MHz band roadmap as well as the promotion of pilots in the pioneer bands with the aim to: experience the 5G network deployments, experience with the network management techniques that 5G technology allows, and develop use cases that allow to certificate the 3 great improvements contributed by the 5G: mobile broadband with very high speed and capacity, ultra reliable and low latency

communications, and massive machine-to-machine communications.

- The government has launched this summer the Digital Spain 2025 agenda which includes a set of measures, reforms and investments, articulated in ten strategic axes, aligned with the digital policies established by the European Commission for the new period.

  Within the planned measures:

  - To continue to lead the deployment of 5G technology in Europe, encouraging its contribution to increasing economic productivity, social progress and territorial structuring (2025 goal: 100% of the radio spectrum prepared for 5G).
  - The creation of the Consultative Council for Digital Transformation in order to advise the Ministry of Economic Affairs and Digital Transformation in the design of the Government's policy proposal on digital transformation, particularly in the areas of telecommunications , digital infrastructures, the deployment of electronic communications networks and services to guarantee the digital connectivity of citizens and companies, etc. The Council has been created in September 2020 and it includes in his composition a broad and diverse agents involved in Digital Transformation as for instance sectoral associations of electronic communications services and networks, telecommunications equipment manufacturers, installers, digital infrastructures, audiovisual communication service providers and digital services providers, professional engineering associations; consumer and user organizations; unions; Business organizations; or local administrations.
  - To strengthen and redirect the instruments available, in order to extend domestic connectivity and the active integration of Spain into the cross-border infrastructure which provides high-quality global connectivity.
- Last 16th of November 2020, the "**Strategy to promote 5G technology**" was presented. Its approval will follow in the coming days. The national strategy for promoting the deployment of 5G will have three specific objectives:
  - **First, Strengthening Spain's leading position in the development and deployment of 5G networks**, by quickly making available to operators the resources they require in terms of spectrum and by giving impetus to the early roll-out of commercial services.
  - **Second, Developing a reliable environment for the roll-out of 5G services**.

    Through a favourable regulatory framework which provides operators in the sector with the necessary legal certainty and brings about the right investment climate in Spain.

  - **And third, Supporting the early roll-out of 5G by economic operators**.

    The measures to support early roll-out will act around four key axes in the deployment of 5G: (1) transport corridors; (2) business solutions and social services; (3) population centres; and (4) innovative ecosystems by means of a programme of

support for R&D+i.

Some of the goals for the 2021-2025 period are, the assignment of the identified pioneer 5G bands, the coverage of the 75% of national population by networks using these bands, the 5G coverage uninterrupted on the main routes and railways and an appropriate regulatory framework (i.e. Cibersecurity Law).

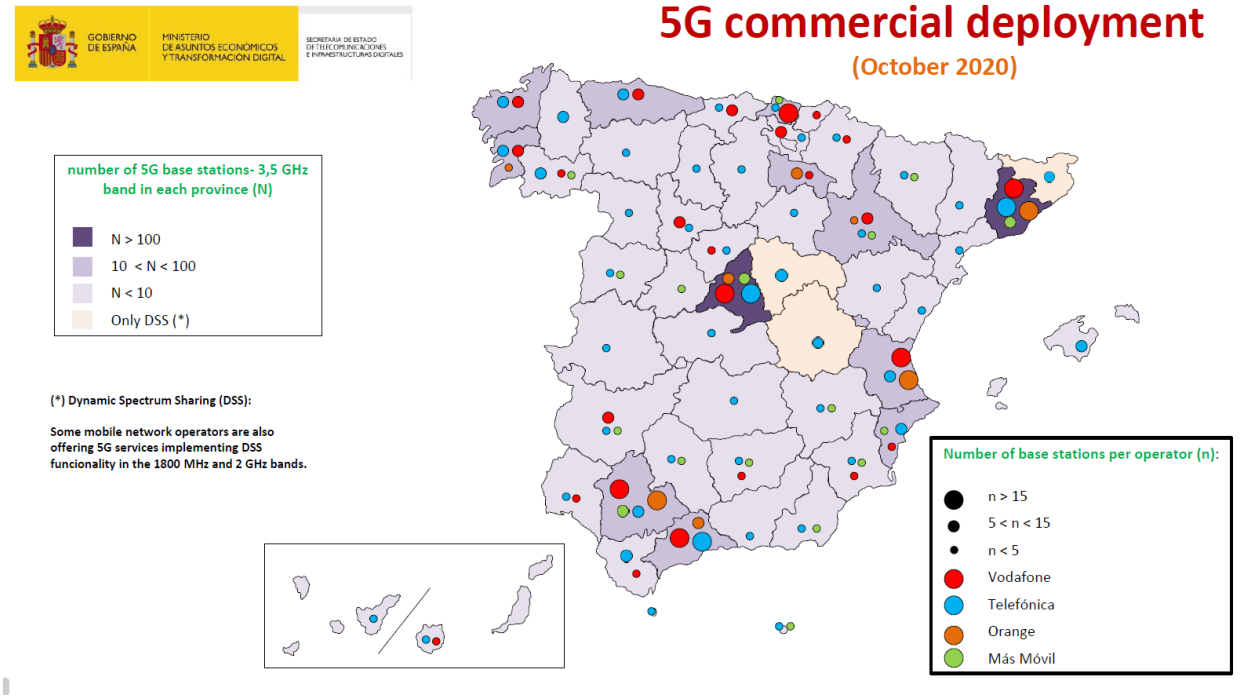
- **Royal Decree 123/2017, of 24th February, that approves the regulation on the use of the radioelectric public domain**:
  - Introduction of regulation for spectrum trading mechanisms as pooling, relevant wholesale services provision and rights of use cession and transfers (these two were already contemplated in the previous regulation). Until date several cessions have been authorised in the 2600 MHz band and in the 3.4-3.6 GHz band, several transfers as well, some of them in the 3.4-3.6 GHz band and finally several addenda of relevant wholesale services provision agreements that were agreed before 2017.
  - Introduction of simplified procedures to access the spectrum by "responsible declarations" notification. For certain type of stations and services, the possibility to define what it is called a "Project Type" with specific conditions and parameters: Spectrum users would have only to notify stations that comply with a specific published "Project Type" (this model will be used for small cells). If the band were not auctioned, the potential holders would apply for spectrum on the "first come first served" basis complying with a specific Project Type among those that were defined. The potential holder that would like to use spectrum under the conditions published in that Project Type, shall only notify it to the Administration (some information should be provided to the administration in the notification as for instance, the sites coordinates).
- **Other "regulation" related to clarify and simplify administrative procedures:**
  - To facilitate the roll-out, a specific 5G template project was defined to use when applying for installation of a station. To build general confidence, it has been established a temporary requirement for a presentation of measurements of the EMF levels periodically each three months.
- **Modifications of the National Frequencies Allocation Table:**

The National Frequencies Allocation Table has been modified in order to establish the deadlines for the release of some bands, to establish harmonized technical conditions and to identify some bands for ECS services. In particular, the following modifications have been introduced in 2018 and 2020:

- Identification of the extended L-band for ECS services SDL (1427-1517 MHz). The band 1452-1492 MHz is not anymore allocated for digital sound broadcasting being already available while legacy uses in the extended ranges can operate in the band initially until the 1st of January 2023.
- Introduction of harmonised technical conditions for 5G for the 900MHz, 1800 MHz, 2.1 GHz, 2.6 GHz and 26 GHz bands.
- Identification of the 26 GHz band for ECS services. The band shall be released of fixed service communications at the latest

	the 31st December of 2021. There is already 1.5 GHz available for ECS in the upper part of the band. ▪ Identification of the 40.5-43.5 GHz and 66-71 GHz bands for ECS services. ▪ Establishment of a deadline for the release by radiolocation services of 2x20MHz in the 3400-3600 MHz band for the 1st of January of 2023 and the shared use of the band for radiolocation services and ECS services. Establishment of the levels of protection for radiolocation services operating below 3400 MHz. Establishment of a limit of spectrum per operator of 120 MHz in the 3400-3800 MHz band. ▪ Establishment of the final deadline for the release of the 694-790 MHz band due to the COVID 19 pandemic for the 31st October 2020 and its identification for ECS services (2x30 MHz, 15 MHz SDL) and PPDR services (2x3 MHz national network, 2x5 MHz regional/local networks). ▪ Establishment of a limit of spectrum per operator of 2x15 MHz in the 700 MHz band and 2x35 MHz for the 700 MHz, 800 MHz and 900 MHz bands. ▪ Establishment of the need to protect broadcasting service operating below 694 MHz. ▪ 10 MHz in the 2.3 GHz band (2370-2380 MHz) have been identified for broadband mobile networks preferably for public services (water/energy networks). Another 10 MHz from 2380 to 2390 MHz have been identified for downlink from UAS on a shared basis (coordination of the users). ▪ Introduction of information of the NATO Joint Frequency Agreement for civil/military uses in the bands. **3.4-3.8 GHz band**: o Low part 3.4-3.6 GHz band was auctioned in the year 2000 for LMDS. The titles have been renewed for 10 years more (until 2030) following the rules of the bidding documents. Upper part was released from fixed service links for the introduction of ECS services. Both parts where designated in the National Frequencies Allocation Table to ECS services under the harmonised technical conditions established at EU level. All this process took place before 2017, except for the last update of the harmonised technical conditions. o The 3.6-3.8 GHz band was auctioned in June 2018 and assigned to the auction winners in December 2018. A provision of payment via instalments was included in this auction. o The legacy radar systems in the 3.4-3.6 GHz band must abandon the band by the first January 2023. Meanwhile operators and the MoD are studying and proposing trials to coexist applying the needed measures for compatibility. o The whole band will be reorganised in the short term to allow larger continuous blocks of spectrum for each spectrum holder operator. o Promotion of trials in the band (see next paragraph on 700 MHz and 26 GHz bands). o The 5G roll-out for any city in Spain has been as well promoted. Please find below a slide about the current 5G deployment in Spain

mainly in this band.



- All major operators in Spain have already switched on their 5G commercial networks.
- In June 2020, Vodafone Spain launched its commercial 5G services at 3.5 GHz band in 15 cities reaching approximately 50% coverage in each of them, and Vodafone 5G services are now available in a total of 21 cities.
- In September 2020, Telefonica, Orange and MasMovil have also launched its commercial 5G services.
- Telefonica switched on its Non-Standalone 5G network in 3.5 GHz band, alongside with refarmed 1800 MHz and 2100 MHz bands. Telefonica also announced it has awarded Finnish vendor Nokia the contract to increase 5G coverage up to 75% of the Spanish population by year-end 2020.
- Orange Spain has launched 5G mobile services, in 3.5 GHz band, in selected parts of five cities, namely: Madrid, Barcelona, Valencia, Seville and Malaga, predominantly in central areas. Orange covers around 30% of each city and plans to expand rapidly to other cities.

	o And MASMOVIL has become the fourth Spanish operator to launch 5G services, after switching on connectivity in 15 cities. MasMovil is offering 5G service via a combination of own infrastructure and an agreement with Orange. o In total, till date, there are 598 5G sites covering at least 23 big cities plus 805 DSS activated stations operating in the 2100 MHz band (Telefónica) (for January 2021, it is foreseen that 3062 sites will be DSS activated mainly in the 2100 MHz band). There are as well two road corridors between Spain and Portugal and between Spain and France. **<u>700 MHz band and 26 GHz band</u>:** o The 700 MHz band is foreseen to be auctioned in the first quarter of 2021 and there are not yet specific plans for the 26 GHz band as very little interest has been showed by the sector in general in the public consultations where the subject was reflected. Some specific measures adopted to incentivise substantial investments in the roll-out of 5G networks have been: ▪ Several Public Consultations have been published to get the view and interests of the sector: In 2018 on the 700 MHz band in 2019 on 700MHz, 1.5 GHz and 26 GHz. ▪ The Administration is promoting all 5G deployments and services. Since June 2018, 84 titles of right of use for 5G trials on the pionner bands (3.7 GHz, 700 MHz and 26 GHz) have been issued to different enterprises and operators. ▪ The Administration has awarded as well, through the Public Business Entity, Red.es, ten 5G pilots in total with several sectors implied in them. Regulatory resolutions were published to allow the use of the pioneer bands for the duration of the pilots in line with the calls for applications. On a first call for applications two 5G pilot projects were awarded using the 3,5 GHz and 26 GHz bands. These two 5G pilots will last till the first trimester of 2022. In October 2019, a new call for tenders was published by the public entity Red.es, for a total of 11 5G pilot projects. The total budget available for this second call for tenders was 45 M€. These pilot projects will include the 700 MHz, the 3,5 GHz and the 26 GHz bands. Eight projects have been awarded to be developed until the first trimester of the year 2023 in this second call. They are at this moment in their first steps. For the 10 pilots, the outcome must be shared and it will be published. o In the case of verticals, the current view is to test if the MNOs can supply verticals with the needs those specific sectors have. Depending on the results, both, MNOs and SMEs will have a better understanding of the more suitable model for the vertical operation using 5G networks. Models could be only with MNOs provision of the network and services, a combined model or an exclusive 5G network for the vertical.
FI	No response
FR	Afin de construire les bases de la future connectivité des entreprises et de favoriser la compétitivité dans d'autres secteurs de l'économie française, un engagement facultatif a été ajouté dans la procédure de la bande 3,5 GHz. Ainsi les 4 candidats se sont engagés à répondre aux demandes raisonnables des acteurs économiques (entreprises, collectivités, administrations, etc.) en leur apportant des solutions personnalisées en termes de couverture et de performance ou, si l'opérateur le souhaite, en attribuant localement ses fréquences. Cet engagement représente une obligation dans les licences attribuées,

	qui seront contrôlées par le régulateur. Une bonne pratique pourrait également être de traiter et éliminer les incertitudes techniques (par exemple la coexistence avec d'autres réseaux) au niveau européen à un stade précoce.
HR	In short term, lowering annual spectrum fees and setting low reserve prices in awarding procedures. Croatia changed regulation regarding spectrum fees several times in period 2017.-2020. lowering annual fees for mobile bands and removing some fees completely (one-time fee for entering new frequency band in case of public tender or FCFS procedure and annual fee for unpaired TDD spectrum in band 1900-1920 MHz). In long term, the Connecting Europe Facility (CEF2) Digital programme should be used as a mean to incentivise substantial investments in the roll-out of 5G networks, during the period 2021-2027. From our point of view the CEF2 Digital programme is a good approach to ensure and catalyse investments in digital connectivity infrastructure of common interest for local, national and cross border connectivity across Europe.
HU	In order to meet the 5G demand of the verticals, two MNOs entered into lease agreements with universities and a manufacturer supporting university research for scientific research and educational purposes and requested the approval of NMHH.
IE	As far as it may be practicable, a suggested best practice would be to ensure that spectrum rights of use for WBB ECS harmonised bands are both service and technology-neutral. This would provide regulatory certainty to parties that change of use and/or change of technology would not be subject to any regulator intervention. Another suggested best practice includes, as far as it would be practicable, to ensure that spectrum rights of use for WBB ECS harmonised bands have provisions for spectrum leasing and/or spectrum trading to facilitate those, post spectrum award, who value the spectrum the most to acquire it as and when they need it.
IT	Other means to incentivise substantial investments by radio spectrum users in the roll-out of 5G networks can be represented by the “use-it-or-lease-it” mechanism and the access obligations. According to the “use-it-or-lease-it” mechanism set for the 3.6-3.8 GHz band, the operators not licensees in the frequency bands up to 3.6-3.8 GHz (or licensees in 3.5 GHz but with rights of use covering less than 40% of the national population) can lease the frequencies in the 3.6-3.8 GHz band in any municipalities not included by the licensees in their coverage obligation area. Italian regulation also imposed on the assignee operators in the 3.6-3.8 GHz and 26.5-27.5 GHz bands access obligations aimed at fostering new players in the value chain (including verticals, infrastructure-only operators and service providers) to invest for developing innovative business cases and 5G services (including also private services). In particular, according to the access obligation in the 3600-3800 MHz band, each licensee holding at least 80 MHz at national level in the 3.4-3.8 GHz band must provide access to other players not licensees in the bands up to 3.8 GHz (or licensees in 3.5 GHz but with rights of use covering less than 40% of the national population), e.g. other telco operators or service providers. The access for a specified area of interest must be aimed at the development of 5G services and based on commercial agreement with fair and non-discriminatory conditions. Moreover, if the licensee does not cover the area where a

	player needs connectivity, the player can deploy the network, upon agreement or even by leasing frequencies. With reference to the 26.5-27.5 GHz band, besides the introduction of the aforementioned "club use" model, Agcom imposed on licensees the obligation to provide access (wholesale capacity) to other players (not telcos, e.g. service providers) for the development of 5G services.
LT	Considering cross-border coordination difficulties with non-EU countries, Lithuania considers to grant the 3.4-3.8 GHz band mainly for small-area wireless access points and fixed 5G networks instead of national mobile 5G network. It would incentivise investments by radio spectrum users instead of keeping spectrum blocked for the usage by mobile 5G in a major part of Lithuania.
LU	No response
LV	There are no other short term means included in the auction obligations to incentivise investments in mobile networks rollouts.
MT	Coverage of 5G technology and services may also be delivered through existing licensed spectrum bands in line with the spectrum licence obligations. The 5G Pioneer spectrum bands do not form part of the overall spectrum cap applicable in Malta.
NL	For the 700 MHz band, separate licenses are issued on land and in the Netherlands' Exclusive Economic Area of the North Sea. The licenses that were awarded to the three Dutch MNOs in July of this year are not valid for use in the sea area (e.g. at oil rigs there). Separate licenses can (and will) be issued for use in the Netherlands' Exclusive Economic Area of the North Sea. This will allow specialized parties to invest in wireless connectivity at sea. This will create more opportunities for competition and will prevent frequencies being unused if the holder of the land license sees no business case in deployments other than on land.
PL	No response
PT	Please refer to question 21.e).
RO	There is no relevant national practice in this regard.
SE	A possible way to lower the cost of buildout is to adjust the fee structure so that it in itself do not penalise the buildout and densification of the networks. This can be especially important in 5G where the prospect of a substantial densification of the network is foreseen in the longer term. As noted in 21 a) the license fee structure for block licenses is a low flat rate. That is if a block license holder doubles or quadruples the number of base stations in their network, the yearly fee is still the same in Sweden. The Swedish regulation also allows for self-planning without prior registration in block licenses which means that there is no extra fees to the regulator for activating a new base station /radio transmitter. In total this means that improving the capacity or expanding the coverage of the network will not incur any additional fees to the regulator.
SI	By lowering annual fees for newly assigned frequencies for first year they should pay only 30 %, for second year 50 %, for third year 70 % of annual fees for the frequencies. By allowing more freedom in the 26 GHz band: For the 26 GHz band, frequency pooling and active sharing, including dynamic spectrum sharing, are permitted everywhere, with a pre-emptive right in

	favour of the licence holder on its assigned sub-band, and active sharing between all licence holders including dynamic spectrum sharing, is permitted.
SK	NRA would like to realize refarming of frequency spectrum, because it helps to improve effective use of frequency spectrum. RU organized a lot of discussions with MNOs on this topic, especially on the frequency band 900 MHz, 1800 MHz and 3.6 GHz. However the agreement between MNOs has to be achieved, which has not happened yet.
NO	Give operators the possibility to use parts of the revenue/auction prices to improve capacity and coverage. Setting coverage obligations and reserve prices based on calculations and reasonable estimates of costs of meeting the obligations

Member State	**Best practice in other MS and non-EU countries**
-	--no input--

***Question 23**: Name industrial ('vertical') use cases with a cross-border dimension, which depend on or benefit from wireless / mobile connectivity and their needs regarding coherent practice for granting rights of spectrum use to operators. These should be in line with Union priorities on 5G deployment (s. footnote 12 of the Connectivity Toolbox Recommendation) and may apply to the sectors of transport or smart manufacturing (industry 4.0).*	
Member State	**National best practice**
AT	Regarding cross-border industrial use cases depending on or benefiting from wireless / mobile connectivity it seems too early to make a sound assessment. However, some sectors are probably more likely to benefit from cross-border 5G connectivity than others. In this sense the following sectors could be amongst those possibly taking advantage of seamless cross-border connectivity: • Automotive sector - connected cars, buses and trucks with V2V, V2I and V2X technology (possibly supported by 5G) • Transport sector - connectivity for all sorts of vehicles like cars, ships, trains, airplanes, drones, ... • Health sector – infrastructure for hospitals and medical institutions • Logistics sector - connectivity for all sorts of goods, e.g. container or parcel tracking • Manufacturing sector - connectivity along the full value chain from production to assembling, to sale and final usage monitoring • Media sector - connectivity along the full value chain from content creation, production and post-production to distribution and sale • PPDR sector - connectivity for public safety, security and defence in cross border emergency situations Regarding a coherent practice for granting rights of spectrum use to operators it is obvious that coherent procedures across the European Union make it easier for multi-national operators, for vendors and for verticals to launch 5G services and introduce products benefiting from 5G. Therefore we appreciate the peer review procedure introduced in recent years and allowing for increased cooperation and knowledge sharing between Member States.
BE	The international research project '5G-Blueprint', a public-private partnership involving parties from the Netherlands, Flanders, Switzerland and the Czech Republic, is to receive a grant of 10 million Euros from the European Union. The Dutch Ministry of Infrastructure and Water Management, together with, among others, the Flemish Department for Mobility and Public Works, North Sea Port and Port of Antwerp, the business community and academic sector, has set up a consortium of 28 parties. Together they are investigating how to increase the efficiency of transport and logistics - also across borders - using 'tele-operation' technology. The 5G-Blueprint project has started on 1 September 2020 and will run for three years. The grant is being awarded as part of the EU's 'Horizon 2020 Research and Innovation' program: https://www.imec-int.com/en/articles/international-research-project-5g-blueprint-receives-european-grant An important issue which has to be kept in mind is the need for different synchronisation frames for private networks, compared to public networks. This complicated the international coordination.
BG	
CY	We have not received any application for vertical project with a cross-border dimension. As examples we believe that automated

	driving and fleet management and road safety are some industrial ('vertical') use cases with a cross-border dimension, which can benefit from wireless / mobile connectivity.
CZ	Please see the response to the question 24.
DE	In Germany, the NRA (Federal Network Agency – BNetzA) has made available 100 MHz of spectrum in the 3.7 to 3.8 GHz range for exclusive licences on a local basis. The spectrum can be used by verticals, start-ups, science, agriculture etc. The application procedure started one year ago. Since then, nearly 100 licenses have been issued: https://www.bundesnetzagentur.de/SharedDocs/Pressemitteilungen/DE/2020/20201123_5GCampusNetze.html (in German) At the start of the licence procedure, the Federal Network Agency announced that it will review the licence conditions after one year and analyse if the conditions need to be adjusted with regard to the efficient use of spectrum (cf. p. 3 "Verwaltungsvorschrift für Frequenzzuteilungen für lokale Frequenznutzungen im Frequenzbereich 3.700-3.800 MHz (VV Lokales Breitband)" of 19 November 2019). Some verticals state that, so far, they have not applied for a licence since, although there is a need for spectrum, they will wait for the harmonization of technical conditions (i.e. 5G release 16, 17 at 3GPP). However, spectrum has to be used. Otherwise there is a risk of licence withdrawal ("use it or lose it"). The use cases identified so far do not have a direct cross-border dimension. Any industrial ('vertical') use case relying on wireless / mobile technologies with a cross-border dimension benefits from connectivity. However, connectivity does not depend on the practice of granting rights but on the interoperability of equipment, in particular on the existence of European harmonised standards. Since industrial use cases rarely have a mobility dimension, it is not critical to have access to the same spectrum but to have access to spectrum at all and with sufficient scale/bandwidth. Using similar spectrum bands for verticals / industry 4.0 at Union level may have indirect benefits, because chipset manufacturers are more likely to develop hardware if there is a large-scale business case. However, there is no need for a particular coherent practice for granting rights of spectrum use to operators within the EU to support spectrum needs of industry 4.0.
DK	
EE	Cooperation in Developing 5G Connectivity and Connected Automated Mobility in the North Sea-Baltic Corridor between the Baltic States and Poland, and the objective to further develop 5G connectivity.
EL	No interest has been expressed for a vertical application.
ES	In Spain the main vertical sector that has shown interest in the 5G deployment for their specif-ic business or needs is the car manufacturers. Industry 4.0 has also shown some interest. In general, vertical's interest is not focused on the mmWave bands.

FI	Several vertical sectors are interested in using commercial 5G equipment, possibly with some additional services to cover their specific needs, for example: transportation, ports, healthcare, manufacturing, agriculture, mines etc. This may require dedicated local networks.
FR	Actuellement, il n'y a pas de demande d'utilisation transfrontalière de la 5G pour les verticaux en France. Néanmoins, il est possible de signaler certains cas d'utilisation transfrontalière qui utilisent le spectre déjà en opération : 1) Le campus du CERN (Organisation européenne pour la recherche nucléaire), est situé à la frontière de la France et de la Suisse, sur le territoire des deux pays. Grâce à un accord trilatéral de services d'urgence entre le CERN, la France et la Suisse, les fréquences françaises et suisses sont diffusées sur le territoire du CERN. La couverture MFCN à la frontière a également été améliorée pour les employés et les chercheurs. 2) L'accord franco-monégasque d'assistance mutuelle entre les services de secours et la protection civile signé en 1970 est le socle qui a permis la signature en 2005 de l'accord trilatéral entre la France, l'Italie et Monaco dans la bande 410-425 MHz pour la coordination des fréquences. 3) Pour les opérations dans le tunnel sous la Manche, un traité entre le Royaume-Uni et la France a été signé en 1986. Le protocole en vigueur sur la coordination des fréquences a été signé en 2015. Voir aussi réponse de la question 22. **<u>Courtesy translation :</u>** Currently, there is no demand for 5G cross-border use for verticals in France. Nevertheless, it is possible to point some cases of cross-border use in the past awarded spectrum : 1)The CERN's campus (European Organization for Nuclear Research), is located at the border of France and Switzerland, on the territory of both countries. Thanks to a trilateral agreement for emergency services between CERN, France and Switzerland, French and Swiss frequencies are broadcasted on the CERN territory. The MFCN coverage at the border was also improved for employees and searchers. 2)The Franco-Monegasque agreement on mutual assistance between the emergency services and civil protection signed in 1970 is the basement which allowed the signature in 2005 of the trilateral agreement between France, Italy and Monaco in the 410-425 MHz band for the coordination of radio frequencies. 3) For the operations in the Channel Tunnel, a Treaty between the United Kingdom and the French Republic was signed in 1986. The in-force MoU on frequency coordination was signed in 2015. See also reply to question 22.
HR	In HR opinion transport and PPDR will be the first vertical uses with cross-border dimension.
HU	Hungary believes in the effectiveness of the harmonization of technical regulation. Spectrum decision gives the opportunity for the establishment and functioning of the internal market in Community. Article 53. of the Code is a good frame for the coordination of timing steps on the way to make possible the different spectrum bends. ITS ((EU) 2020/1426 decision) is the latest decision to

	harmonise spectrum for such use Union-wide in order to ensure a single market also in urban rail and to contribute to Europe's environmental objectives. The aim of the Spectrum Decision is to establish a policy and legal framework in the Community in order to ensure the coordination of policy approaches and, where appropriate, harmonised conditions with regard to the availability and efficient use of the radio spectrum necessary for the establishment and functioning of the internal market in Community policy areas such as electronic communications, transport and research and development (R & D). This aim has stood the test of time. NMHH had public hearing on the use of frequency bands suitable for the operation of mobile networks. The spectrum needs was one of the topics. The vertical needs are basically not defined in terms of frequency band, but they can be defined by usage characteristics (such as data transfer rate, latency, coverage (indoor, outdoor)). The radio communication system adapted to the demand, the identification of the possible frequency band, bands, the finding of the appropriate technology are already understood by radio spectrum management/network planning experts. Car manifacturers have indicated their need to be able to have a system that operates in a frequency band that can be used for the same purpose in all the countries where their group members operate. The harmonized 5G with harmonised technical solutions gives this possibility. NMHH belives it can be solved without a common authirization regime.
IE	Whilst Ireland no longer shares a land border with any EU Member State, consideration has been given to the possibility of industrial use cases which may have a cross-border dimensi-on with the United Kingdom and Northern Ireland. Taking into account the rural nature of the border with Northern-Ireland, there are limited opportunities for such cross-border industrial applications, which is reflected in that there are currently no Irish industrial use cases that use licenced spectrum in such a cross-border manner. The upgrading of the rail link between Ireland and Northern-Ireland may entail the use of 5G technology (i.e. a 5G version of GSM-R), however Ireland is not aware of any plans to do so, noting that there is a very limited scale of rail operations which may not require such connectivity.
IT	In the context of the most interesting use cases, relating to a harmonized spectrum manage-ment for cross-border communications, we have investigated some European research projects related to vertical transport. In particular, 5G CroCo, 5G-Mobix, and 5G-Carmen projects are interesting because all services they want to deploy make use of 5G Networks in cross-border areas. We have no evidence of use cases on the industry or manufacturing vertical in the cross-border area.
LT	Under consideration.
LU	The 5GCroCo project will trial 5G technologies in the cross-border corridor along France, Germany and Luxembourg. In addition, 5GCroCo also aims at defining new business models that can be built on top of this unprecedented connectivity and service provisioning capacity. (https://5gcroco.eu/)
LV	There are no such requests identified at this point in time.
MT	Malta would like to note that as of to-date, no cross-border coordination requests for vertical applications were received by the Malta Communications Authority.

	In addition, Malta notes that cross-border vertical industries in the logistics and manufacturing sectors may benefit from the coherent practices for granting right of use for wireless mobile connectivity. Such a statement is without prejudice to (i) any other existing or emerging industries which may adopt 5G connectivity as part of their future applications or business endeavors and (ii) any envisaged European Harmonised Standards with regard to the interoperability of equipment.
NL	At least two EU projects on transport and logistics involve cross-border coordination: • The project 5G-MOBIX on automated driving. In 5G-MOBIX automated vehicle functionalities are developed and tested using 5G core technological innovations along multiple cross-border corridors and urban trial sites. The project 5G-BLUEPRINT on inter-harbour tele-operated transport between the Netherlands and Belgium. Four use cases are carried out: 1) Automated Barge Control, 2) Automated Driver-In-Loop Docking Functionality, 3) CACC Based Platooning, and 4) Remote Take-over Operations. One of the main objectives is to identify regulatory issues regarding the deployment of cross-border tele-operated transport based on 5G connectivity and identify recommended actions.
PL	At this stage we have no examples of industrial use-cases in a cross-border dimension. In future perspective of distributing bands for 5G we consider it possible to allocate part of it for local industrial and non-public needs. The use of such solution and creating private networks de-pends strongly on market demand and other market circumstances to be observed. We will de-sign future distribution processes in accordance with all necessary market factors, including market demand. Due to lack of specific data and market demand we are not able to give more conclusions in this area.
PT	Enterprises benefiting from the Atlantic corridor, as well autonomous driving.
RO	There is no relevant national practice in this regard. However, please note that Romania's three out of five neighbor are non-EU countries and due consideration should be given to this par-ticular situation.
SE	There are several vertical sectors that have expressed interest in using 5G technology, for example: Transportation, Healthcare, Agriculture, Foresting, Mining and manufacturing. Actors from all these sectors have expressed a preference for using standard based harmo-nised 5G equipment while this is perceived as a means to gain the cost advantages that co-mes with the economy of scale. However, standard based harmonised 5G equipment does not necessarily require the use of a single harmonised frequency band for a vertical need, in most cases terminal equipment will have multiband support supporting multiple of the available harmonised frequency bands in EU. We notice that all of the verticals listed above bring forward a multitude of use cases with different requirements that describe their needs. For example Agriculture span from low data rate sensors to autonomous cooperative operation of heavy machinery, which means that it would be more suitable to define a set of requirement profiles that cover the different use cases needed for a specific vertical, than defining a single, all-encompassing service pro-file for a vertical sector. We also note that similar requirement profiles show up in different vertical sectors and could be viewed as common subsets of required services in different verticals. This far, we have not seen any vertical that have presented well defined, standardised, ser-vice profiles that all stakeholders within that particular vertical supports and promotes.

	The needs we have identified so far can be divided into two main categories. Needs that require wide area coverage (for example many use cases within transport) and needs that are confined to a small geographical area (for example indoor factory automati-on). Our assumption this far is that the former category can get their requirements fulfilled through commercial negotiations with the mobile operators. Local geographical needs can obviously be handled by local networks using licensed, leased or unlicensed local spectrum.
SI	All cross-border activities are based on preferential Agreements with neighbouring countries concluded in accordance with HCM Agreement. Such verticals could be transport or PPDR vertical. In draft new ZEKom-2/ECA Articles 41 and 42 simplify Slovene internal procedure in order to support multi-country and/or pan European verticals.
SK	At this time NRA has no experiences with industrial use cases with a cross-border di-mension. However we are expecting that cross-order issue should be take into account in the case of autonomous vehicles.
NO	As connectivity becomes a commodity cross-border connectivity gets more and more im-portant. Goods and people travel and hence one wants cross border connectivity. In Norway it is particularly important to monitor transportation of fresh goods, like fish, and connectivity across the borders is important. The Borealis project where 40 km of E8 from Norway to Fin-land is used to test cross border connectivity. ITS is another important service with clear cross border benefit. Ambulances and other blue lights travel across the borders and for them it is of course im-portant to have continuously connectivity. This means that one also need to systems behind needs to work across borders.

***Question 24**: In regard to the use cases identified under Question 23, please name best practices, for granting rights of spectrum use to operators with a view to the identification of a dedicated frequency range in conjunction with the appropriate authorisation regime, as well as the conditions attached to such authorisations, which are necessary to ensure service continuity across borders, including but not limited to quality of service and network security*[68]		
Member State	**National best practice**	**Best practice in other MS and non-EU countries**
AT	In respect to the possible use cases we still see to a certain extend a need for individual solutions for different sectors (further inputs can be awaited after the second consultation to our "spectrum release plan" in Austria, see above). At the moment we would not exclude any type of licensing modell to react to a possible market demand. European harmonisation could be key for some of the identified use cases (i.e. logistics). Modells for cross border coordination of spectrum (as the technical frame for spectrum rights of use) already exist - eg coordination under HCM* and already existing technology neutral bi-/multilateral Agreements in mobile bands with the aim also to foster "operator arrangements" in case of a need for closer cooperation in border areas. This process is closely supported by concerned administrations to provide the necessary information for parties to agree on special arrangements. Further consultations on future mobile bands will show further needs in this respect.)* HCM: Harmonized Calculation Method – Fundamental frequency coordination agreement between 18 European states - *Agreement between the Administrations of Austria, Belgium, the Czech Republic, Germany, France, Hungary, the Netherlands, Croatia, Italy, Liechtenstein, Lithuania, Luxembourg, Poland, Romania, the Slovak Republic, Slovenia and Switzerland on the Coordination of frequencies between 29.7 MHz and 39.5 GHz for fixed service and land mobile service (HCM Agreement)* (see also http://www.hcm-agreement.eu/http/englisch/verwaltung/index_europakarte.htm). Austria does not intend to combine licensing of radio spectrum with obligations on security. Legal obligations result for operators and all users of spectrum with respect to ECS from other legislation (NIS-law, Network-Security Ordinance and respective EU legislation).	
BE	BIPT always gives test licenses if asked for and if the spectrum is available. The cost for this test license is negligible and the procedure is very quick.	
BG		
CY		

68 These may refer to spectrum authorisation both, directly to 'verticals' (e.g. for operating their private networks) and to (public) operators providing services to 'verticals'.

CZ	The Czech Republic is convinced that dedicated spectrum approach cannot be the general solution. Some Member States have already decided not to allocate dedicated 5G spectrum to vertical applications such as smart manufacturing, and therefore this approach cannot be coherent across the Union. Furthermore, the sheer number of verticals that deserve to benefit from 5G vertical applications by far exceeds the amount of spectrum available for dedicated allocations. The viable solution is mostly using 5G networks to provide vertical-specific services across a publicly available networks, using native features of the technology, such as network slicing. Issues of consistency across the Union will arise in some verticals, such as using certain frequencies for ITS, but this will be best provided for by technology standards and/or other means of legal harmonization, not by spectrum administrators. Still, one must keep in mind that these services on specific frequencies will be provided, by and large, on public 5G networks, not on dedicated vertical frequencies. The question thus translates into ensuring availability of 5G networks in all places where vertical services are likely to be used – including, but not limited to, border crossings. In this respect, the Czech Republic used the following measures: • obligatory coverage by holders of the rights if use in the band 700 MHz of the road and railroad corridors included in TEN-T;[69] • obligatory coverage of by 700/800 MHz network of border crossings by the holder with the Priority BB-PPDR obligation;[70] • the obligation for the holder of the rights to one of the auctioned blocks in the 3.5 GHz band (B1 block) to lease radio frequencies in the 3400–3800 MHz band for local private networks used for Industry 4.0.[71] Questions of service quality and security on 5G network slices are of crucial importance and worth the continuous attention of Member States. Provided that services based on network slicing are still subject to substantial development in both technological and business sense of the word, we do not see good	

69 See *Invitation to Tender*, section 7.5.1.d)

70 See *Invitaiton to Tender*, section 8.3.1.1.b)

71 See *Invitation to Tender*, section 8.5.

	practices to recommend right now.	
DE	Rights of spectrum use are granted based on the European legal framework. No obstacles identified.	We assume that the European Commission monitors thoroughly the lawful application of the European legal framework in all EU Member States. In challenging cases with a cross-border dimension, a peer review procedure under the umbrel-la of the Radio Spectrum Policy Group can be carried out.
DK		
EE		
EL		
ES	The usual best practice has been a coordination between neighbouring countries and collabora-tion agreements (for instance for railway communications systems between France and Spain). For cross-border seamless operation, specific conditions and management should be defined. Article 37 of the Code would be sure for help if applied in previously well analysed uses cases and when clear and motivated interest is expressed by stakeholders.	
FI	Most of the cases can be covered by existing procedures, e.g. coordination agreements and through normal commercial agreements including international roaming. In order to ensure continuous coverage and required Quality of Service in transport corridors there may be a need for some additional spectrum arrangements between countries, requiring possibly also involvement of NRA's. This could be required especially to meet the connectivity needs for maritime and unmanned aviation. The licensing regimes for local networks should be flexible and enable different network solutions and topologies. Local networks could be provided by mobile operator’s solutions, third-party providers and directly by the local users themselves.	

	The demand for local spectrum can be met through spectrum leasing (voluntary/mandatory), by dedicated spectrum allocations for local networks and/or by MNO operated local networks. In some cases also the use of unlicensed spectrum could be considered. The solutions depend on the national situation and spectrum availability.	
FR	Par rapport aux meilleures pratiques, l'expérience acquise concerne le spectre déjà en opération avant les attributions 5G. Dans ce cas, la solution parait a priori être du RAN sharing avec le PLMN pour un usage vertical (ex : CERN) diffusé dans les deux zones frontalières, ce qui suppose bien sûr l'accord de l'opérateur exploitant la station de base. Pour les bandes étroites, il est également possible d'étendre (de façon limitée) la couverture d'un opérateur par la répartition des porteuses entre pays (par exemple avec une station Swiscomm sur le territoire français). **Courtesy translation :** In respect to best practices, previous experience is related to the spectrum already in operation (pior to 5G attribution)). In this case, the solution seems a priori to be RAN sharing with the PLMN for vertical use (e.g. CERN). There must be an agreement with the operator of the base station to broadcast in the two border areas. For narrow bands, it is also possible to extend (within a limit) the coverage of an operator through the distribution of carriers between countries (for example with a Swiscomm station on French territory).	
HR	No such authorisation have been granted yet.	
HU	ITS is a good example how the technical harmonisation could help to build the a union single market. Furthermore, two agreements have already been concluded between MNOs and universities to lease frequency for the use of univerities' private networks. Under the umbrella of these agreements, universities will have the right to use at least 20 MHz indoor for internal communication purposes	
IE	The establishment of Memoranda of Understanding (MoU) with neighbouring countries that seek to maximise and not unduly restrict the use of the radio spectrum at and around national borders, should be considered as best practise. The range of current MoUs can be found here: https://www.comreg.ie/industry/licensing/international-spectrum-coordination/. MoUs are agreements between Administrations as to how specific spectrum bands will be used at borders and across borders. However, the policy behind the use of MoUs is important. There are restrictive agreements that seek to implement a policy that prevents any meaningful or useful signal across borders to prevent customers to be served once they leave their home country. With these types of agreements, we see the formation of regions without any coverage in border areas as a result of	

	licenced operators been understandably reluctant to establish base stations in these areas for fear of falling foul of these agreements. Secondly, there are MoUs that actively seek to facilitate the provision of services from each country both at the border and a reasonable distance across the border. With these types of agreements and using the conditions contained therein, operators have certainty around establish base stations and proving services at and across borders. These are the type of agreements that ComReg seeks to set in place when dealing with Ofcom (UK) and other EU countries. ComReg is aware of many MoUs that have been established in other Member States and non-EU countries of both types explained above. ComReg has examined the conditions in these MoUs to help establish its own MoUs, which will maximise the use of radio spectrum in and across borders.	
IT	With respect to the use cases we focused, we consider the 5G carmen project as the Italian Best Practise in term of mobile connectivity and properly use of cross border spectrum ma-nagement. The Project provides several V2X services that must be guaranteed when vehicles crosses the three distinct member states that host the project. According to the consortium choices, telecommunications services are provided in two distinct ways: Services provided by Operators exploiting their own licensed 5G frequencies; ITS G5 services, provided in the 5.9 GHz frequency band.	
LT	Under consideration.	
LU		
LV		
MT		
NL	The Dutch Radiocommunication Agency has so far not received a request for cross-border coordination. As far as we know now the 5G-BLUEPRINT project will use spectrum in the 5.9 GHz band (under general authorization), but at a later stage also other spectrum (and au-thorization type) may be used. Cross-border use cases require cooperation of MNOs at both sides of the border, which can prove difficult.	
PL		
PT	To facilitate cross-border coordination by, jointly with the administrations of the neighbour countries, encourage that agreements between operators of each country be reached – please note that this is not a best practice applied in Portugal in the context of the verticals but a practice that has been followed to foster technical co-ordination in general between operators at the border in the 5G award.	
RO		
SE	This far we have not seen any vertical needs that would obviously require special treatment. Our current assessment is that they could all be handled within the current framework of national, local licenses and	

	general authorisation. Regarding vertical needs that require wide area and cross border coverage we have a hard time to see the need for dedicated frequency ranges for specific services. Most terminals and mobile networks are already multi band and we see that the same will be true for 5G wide area networks. Dedicating a specific band to a specific frequency range and thereby limiting the possibility to produce the services in the most efficient way is deemed contra productive. In our view a more efficient way to handle wide area cross border service needs is through normal commercial agreements. If verticals can come up with common universal set of re-quirements that describe the different mobile services that they need, there is already a well-established commercial process to guarantee cross border access through roaming ag-reements based on the necessary SLA:s and other service definitions. If there is a well-defined set of service requirements for a vertical sector it should therefore be possible to secure roaming for needed cross border services, those services can then be delivered in the most cost efficient way using all the available frequency bands. When it comes to vertical needs that is local but where the vertical sector is pan European in its reach, such as manufacturing, harmonisation would allow for an easier path to reuse ra-dio solutions. We however notice that several countries have already chosen diverging fre-quency ranges for these kind of local needs, and that in the countries furthest ahead users have already started to build out their networks. Lacking EU-harmonisation Sweden has cho-sen the path to align and to some extent harmonise our spectrum use with Germany which has been an early mover in issuing licenses suitable for 5G-use in manufacturing (Industry 4.0), this allows Sweden to some extent, to achieve economies of scale with Germany.	
SI	Good cross border coordination of spectrum such as HCM and other bi/multi lateral agreements are very crucial for development of such verticals as well as good cooperation between concerned administrations.	
SK	NRA has no experiences with industrial use cases with a cross-border dimension yet.	
NO	The MNOs in Norway, Sweden and Finland are the same and hence both roll out in and around the borders has been well coordinated. We also have great collaboration with the Swedish and Finnish NRAs and we have coordination agreements with those countries. Win-ners in auction should have the opportunity to bid for their placement in the band. This would allow them to acquire the same resources on both sides of a border. There is of course more difficult with non-EU countries like Russia.	

***Question 25**: In view of the growing social resistance to the deployment of 5G networks, in particular due to alleged health issues due to EMF emissions, please identify potential measures that could be taken by operators, competent authorities or national regulatory authorities to address and mitigate such concerns and that could constitute best practices contributing to the timely de-ployment of 5G networks in line with the objectives of the Recommendation*	
Member State	**National best practice**
AT	The reasons for the growing opposition against the deployment of 5G in some parts of the European population are manifold. The worries range from health issues to building permission aspects, ubiquitous connectivity, increased surveillance and digitalisation in general. Sometimes, these worries are amplified by conspiracy theories and false information. Therefore potential counter-measures are possible from several directions. In Austria, the Austrian Regulatory Authority for Broadcasting and Telecommunications and the Federal Ministry of Agriculture, Regions and Tourism have joined forces to provide the public with facts (based on technical, legal and medical knowledge) regarding 5G technology, 5G usage scenarios and the ongoing 5G deployment. As most discussions arise on local level the information campaign addresses mayors on local level in order to better prepare them for discussions with the local population. Apart from the information already accessible on the websites of both authorities, the additional measures currently under discussion include the following: • Extensive FAQ list addressing various aspects of 5G • 5G hotline for mayors to discuss specific 5G issues (e-mail, phone) • 5G workshops for mayors on regional level • 5G technical measurements to prove emissions of base stations are below allowed limits • It is planned to start the information campaign in 2021. • Link Ministry: https://www.bmlrt.gv.at/telekommunikation-post/telekommunikation/wissenschaftlicher-beirat-funk/5g-faktencheck.html • Link NRA: https://www.rtr.at/en/tk/5G Furthermore, the Austrian mobile industry also addresses the issue of health concerns and other aspects of 5G on their website. Mobile operators have a certain amount of experience with social resistance as they faced similar opposition when deploying 3G and 4G. Link: https://www.fmk.at/en/ We also see the joint position paper of RSPG-BEREC (https://rspg-spectrum.eu/wp-content/uploads/2020/10/BEREC-RSPG_position_paper_on_EMF.pdf) as a good basis for information in this respect.
BE	Belgium strongly supports the respect of adequate field strength limits to avoid harmful effects from exposure to EMF. In many

	cases, members of the public are unaware of the fact that there are guidelines in place to limit their exposure to EMF. We therefore strongly believe that one of the key actions should be to make the general public aware of existing internationally accepted guidelines. Accurate public information on the new technology and its interplay with EMF, is key for the successful social and societal acceptance of 5G networks. The invalidation of conspiracy theories and the avoidance of spread of misinformation (e.g. the alleged link between 5G and COVID19) are major targets. Competent authorities (health, environmental, radiation protection) should work together and remain open to hearing and understanding such concerns of citizens. We should continue to address potential barriers to wireless deployments and continue to work on how best to communicate science-based EMF exposure limits recommended by experts. Any measurements taken should be scientifically supported. Department "Omgeving" of the Flemish government therefore monitors the scientific research and publishes these reports on the website: https://omgeving.vlaanderen.be/onderzoek-straling-en-gezondheid. The Flemish governement also launched a research project on new evolutions concerning 5G, the societal impact of the rollout of 5G networks on radiation exposure (https://researchportal.be/en/project/new-developments-result-5g-social-impact-roll-out-5g-networks-radiation-exposure). In addition to this, in accordance with the DPR 2019-2024 ("Déclaration de Politique Régionale"), the Walloon government has set up a multidisciplinary Expert Group on 5G whose main report is expected at the end of 2020 to help the regional government in his future decision on 5G deployments in the Walloon region. The question of EMF norms will be part of the expert group work but in a second phase, during 2021. Other aspects of 5G deployments are also pointed as potential risks for the general public such as energy consumption.
BG	
CY	There is a need for a comprehensive information campaign. The operators and competent authorities will have to cooperate and implement a joint campaign with targeted goals. Everyone has to be informed for the benefits of 5G. This campaign has to start from members of the government and the parliament, continue with local authorities and then the general public. This campaign should include TV and radio spots, informative leaflets, billboards, which point out the benefits of 5G. Furthermore, workshops/seminars, TV talk shows can be organized that will focus on answering crucial questions regarding the impact of 5G on health and environment.

	We similarly believe that the European Commission should review the Recommendation 1999/519/EC and update it as a Directive. A Directive will resolve a lot of misunderstandings among the public opinion (especially public concerns) regarding EMF. In Cyprus, mobile operators are obliged to conduct continuous measurements by accredited laboratories (2 times per year for urban areas and 1 time per year for rural areas), for all their antennas taking into consideration a worst case scenario. The relevant results are published on the website of the Department of Electronic Communications of the Ministry of Research, Innovation and Digital Policy and are accessible to every citizen (http://dec.dmrid.gov.cy/). Finally we trust that a political announcement at the higher level from the EU will assist on the issues of disinformation to the public concerning 5G roll out. Also a common coherent campaign also originating from the EU would be in the right direction.
CZ	Based on the situation in the Czech Republic, it seems sufficient to continue addressing allegations, fake news and hoaxes as they appear. Relevant action has been taken by the Ministry of the Interior72, the Ministry of Trade and Industry,73 the media74, and private companies.75 The regulator launched an FAQ site dedicated to information 5G technologies, including an email dedicated to collecting feedback and concerns from the public so that these can be addressed adequately.76 To improve trust of the public in 5G technology, we are following the strategies to increase transparency of 5G related information. This should help in dispelling the doubt about and increasing the trust in the way public authorities are handling 5G networks. One option is to focus on making available in a user-friendly format the information on the location and technical parameters of radio access points and the results of control measurements of EMF, such as the Cartoradio site in France.77 The other option is

72 *Koronavirus: Přehled hlavních dezinformačních sdělení,* https://www.mvcr.cz/cthh/clanek/koronavirus-prehled-hlavnich-dezinformacnich-sdeleni.aspx

73 *Jak je to s 5G sítěmi,* 29 May 2020, https://www.mpo.cz/cz/rozcestnik/pro-media/tiskove-zpravy/jak-je-to-s-5g-sitemi--254887/

74 Cf. *Ptáci padající z nebe, paprsky smrti a uvařené mozky. Objasňujeme 13 mýtů o 5G sítích,* 27 July 2020, https://zpravy.aktualne.cz/domaci/ptaci-padajici-z-nebe-paprsky-smrti-a-uvarene-mozky-objasnuj/r~781a9c90cce111eab115ac1f6b220ee8/

75 E.g., *Konspirační teorie, nepravdy a mýty o 5G sítích,* https://www.5gvcesku.cz/cs/bezpecnost-5g.html

76 *5G sítě,* https://www.ctu.cz/5g

77 *Cartoradio. La carte des antennes et des mesures radioélectriques,* https://www.cartoradio.fr/index.html#

	preparing convincing research reviews, sponsored from public resources, such as the Polish White Book on 5G78 aiming at the broad public, or the Swiss report Mobile Telecommunications and Electromagnetic Emissions79, aiming at decision makers.
DE	In Germany, too, a small part of the population has the reservations described in the question. It is essential to take the worries and fears seriously and to respond to them by providing information in a transparent and open manner. In Germany's experience, what contributes to tackling the resulting challenges are in particular interlinked measures in three fields: Regulation: The foundation for further steps is the existence of a national regulatory system with which the health risks of EMF can be avoided if the system is adhered to. It comprises a limit values regime that is based on international scientific recommendations (and/or on Council Recommendation 1999/519/EC, which in principle remains an adequate basis for the harmonization of limit values for electromagnetic fields within the EU and ensures the protection of the population. Against this background, however, it would appear reasonable for the European Commission to examine whether the limit values should be adjusted to the values given in updated scientific guidelines (ICNIRP guidelines for low-frequency fields of 2010 and ICNIRP guidelines for high-frequency fields of 2020)). Further important components are the obligation to provide evidence of compliance with the rules and a transparent inspection system. Despite regulation primarily being a responsibility of government agencies, operators can make a substantial contribution by providing transparency concerning the emissions from their installations and/or inspections performed. Research: The continuous promotion of scientific research in the field of EMF makes an important contribution to enhancing public confidence. Such research programmes must be led and carried out by credible institutions that are independent from the roll-out interests. Moreover, what is needed are institutions, e.g. scientific commissions or specialized agencies, that are able to continuously monitor new scientific findings and assess their relevance. Such institutions can then also make important contributions to the evolution of the regulatory system and to communication. But here, too, operators can make a contribution: thus, a significant part of the funds for the performance of the large-scale German Mobile Telecommunication Research Programme was contributed by the network operators through a voluntary self-commitment.

78 *The electromagnetic field and people: On physics, biology, medicine, standards, and the 5G network,* Ministry of Digital Affairs: Warsaw 2020, https://www.gov.pl/attachment/02d0f873-90ec-41a9-a786-f998b13d99ca

79 *Bericht Mobilfunk und Strahlung: Herausgegeben von der Arbeitsgruppe Mobilfunk und Strahlung im Auftrag des UVEK,* 18 November 2019, https://www.bafu.admin.ch/dam/bafu/de/dokumente/elektrosmog/fachinfo-daten/bericht-mobilfunk-und-strahlung.pdf. In addition, the Swiss Federal Office for Environment is publishing a quarterly review of relevant research studies, the *Newsletter of the Swiss expert group on electromagnetic fields and non-ionising radiation (BERENIS)*, https://www.bafu.admin.ch/bafu/en/home/topics/electrosmog/newsletter-of-the-swiss-expert-group-on-electromagnetic-fields-a.html

	Communication: Communication with the population remains a key building block. Here, information offerings should be created both for the general public but also for specific target audiences and especially for concerned citizens. The information measures should refer to both the current scientific knowledge about risks and effects of EMF and the measures taken. Communication on possible health risks must be provided by specialized institutions that are independent from commercial interests and should be continuous, low threshold/easily accessible and appropriate to the target audience. The Federal Network Agency is monitoring compliance with the limit values for health protection purposes and publishes its measurements on the Internet. The limit values also have to be complied with for 5G. A key building block of the German Mobile Communications Strategy is a communication initiative of the Federal Government on the roll-out of mobile communications and 5G. The aim is to provide transparent and neutral information on the technical characteristics, fields of application and possibilities of the new technology in mobile communications in Germany and to enter into an in-depth dialogue with our citizens in order to enhance acceptance of the mobile communications roll-out at the local level. The initiative is to prioritize regions in which opposition on site reveals a greater need for information. The scepticism and worries primarily refer to the question whether 5G poses a health risk or even contributes to the spread of corona. A direct exchange of information and experience with the citizens is of crucial importance. Therefore, the initiative is called “Germany talks about 5G”. Since direct talks are rather difficult in times of corona, communication initially takes place digitally. The initiative was launched in mid-October within the framework of a silent launch on Facebook (@dspricht5G) and Twitter (#dspricht5G). The Youtube launch is about to take place. A central website will be available soon: www.deutschland-spricht-ueber-5G.de. Since the beginning of October, the central digital office can be reached at: dialogbuero@deutschland-spricht-ueber-5g.de. The launch of the initiative by the German Minister of Transport and Digital Infrastructure and the Minister for the Environment, with the media present, is currently scheduled for 1 December. The State of North-Rhine Westphalia has initiated a 5G dialogue with stakeholders, which addresses, among other things, the subject of 5G & health to discuss open questions in this context and overcome possible reservations. Moreover, the current brochure of the Ministry for Environment, Agriculture, Conservation and Consumer Protection of the State of North Rhine-Westphalia summarizes relevant information on the 5G technology and, among other things, answers questions regarding the advantages of 5G, the subject of radiation protection and 10 important questions concerning the impact of 5G on the environment and on health. Within the framework of Hesse’s dialogue campaign, information on the roll-out of mobile communications and 5G is provided, among other things. The objective is supporting local authorities by creating transparency against the backdrop of digitalization. The target audience includes local authority decision-makers (e.g. district commissioners, mayors, heads of building authorities,

	administrators and broadband coordinators) who serve as multipliers and are informed about and trained in the relevant subjects by means of various dialogue formats (online seminars, central portal and face-to-face events). Here, the events are held in close cooperation with Hesse's Ministry of the Environment, Climate Protection, Agriculture and Consumer Protection. Furthermore, an interface between citizens and the federal state is available at the Centre of Competence for Mobile Communications to facilitate the dialogue concerning individual citizen's enquiries.
DK	Like everywhere the introduction of 5G in Denmark has met concerned citizens. Despite this the current pattern indicates a decrease in the amount of citizen inquiries and demonstrations. Due to the increasing attention on EMF we have intensified the cooperation with other authori-ties and focused on public communication, as well as intensifying the monitoring of the opera-tors. Funding for larger studies on EMF was not available. Instead, we have sought infor-mation from our colleagues in the EU and we have cooperated with private and public actors to ensure that correct and well-founded information is made widely available. There is a great cooperation between the different responsible authorities on health, safety and telecom and all the official announcements have been coordinated amongst these. The Danish Energy Agency which monitors EMF has a close dialogue with the operators who also experience that the collaboration (between authorities and operators) is beneficial to them when it helps alleviate concern in the population. The Danish Energy Agency strives to make the monitoring and supervision transparent to all. The Danish Energy Agency and operators have agreed on a method for the operator's calculation and demonstration of the EMF expo-sure relative to the threshold values, which they will perform on a regular basis. The Danish Energy Agency has furthermore had a close dialogue with the municipalities for whom the roll-out of 5G means an increase of applications for permission to set up antennas. Through a cooperation between municipalities, operators and several authorities, a toolbox for application processes has been developed, including content on EMF. We have received much praise for this toolbox (which is described in more detail in the response to question 10).
EE	Operators have an obligation to request a permission for the use of radio equipment from National health Board. As well Estonian Association of Information Technology and Telecommunications in cooperation designed a webpage (www.5Geestis.ee) with information concerning 5G, explaining the benefits of technology and mitigating fears and concerns of public.
EL	Antennas Licensing According to the new legislative framework for licensing antenna constructions established by Law 4635/2019, the issuance of the antenna construction license by EETT is carried out through the Electronic Application System (SILYA/ΣΗΛΥΑ) of antenna constructions, as in the previous legal framework, but without the prerequisite of issuance of urban planning approval. In

	particular, the request is submitted electronically to SILYA and the responsible authorities must decide on it within three months through SILYA. The issuance of the antenna construction permit requires the consent of the Civil Aviation Authority (CAA) and the Hellenic Airforce staff (HAF) regarding the aviation safety, of the Hellenic Atomic Energy Commission (GAEC) regarding the adherence to the limits of electromagnetic radiation and the environmental licensing of the antenna construction, which, depending on the type and size of the project, consists in the granting of Approval of Environmental Terms (EPO) or - in the majority of cases of mobile base stations - in the submission of the Declaration of Submission to Standard Environmental Commitments. The issuance of urban planning approval, follows the issuance of an antenna construction permit by EETT, is carried out through the electronic system e-Adeies already used for buildings and is to interwork with SILYA, is issued automatically at the request of an authorized engineer and is followed by a building inspector autopsy. In addition, the current legal framework significantly simplifies the process of modifying antenna constructions. In particular, the majority of cases of antenna construction upgrades do not require the modification of the existing license but the submission of a declaration to SILYA accompanied by updated approvals affected by the modifications made. In particular, the simplified modification procedure applies to all cases of modification of the antenna systems that are not accompanied by changes in the structural part of the antenna construction as well as in the cases of modification to the structural part of antenna constructions which are subject to Standard Environmental Commitments, if the height of the construction remains less than 15 meters if it is based on the ground and less than 10 meters if it is based on a building. It is further noted that with the Joint Ministerial Decision (JMD) no. / 2012. » (Government Gazette 1442 / B / 14-6-2013) are excluded from the licensing process the Antenna Constructions of Low Environmental Impact (EKKXO) that meet the conditions (e.g. power limits, antenna mast dimensions) set out in this JMC, resulting to a simple declaration process, which is also implemented through SILYA for a significant number of antennas, mainly within urban centers, Finally, it is noted that especially for the public mobile telephony networks and the installation of indoor antennas without the obligation of declaration, the decision of EETT 751/1 / 5-3-2015 “Amendment and codification of No. 529/138 / 30−6−2009 decision of EETT 751/1 / 5-3-2015 “Inclusion of Femtocells antenna constructions in article 1 par. 2 ed. in Law 2801/2000 »» (Government Gazette 1462 / B / 2015) is in force. Potential measures: Informing citizens about health and safety issues from electromagnetic radiation and 5G can mitigate public concerns. In this regard, EETT is publishing on line all available information for all licensed antenna constructions. The Antenna Construction Information Portal (keraies.eett.gr) is a pilot web application developed by EETT that provides citizens with the opportunity to be informed about the construction of antennas that are licensed or registered with EETT. The aim is to increase transparency in the licensing of antenna constructions and the provision of e-government services to citizens. An application informing citizens about EMF and measurements results in antennas is also available under the responsibility of Greek Atomic Energy Commission (competent authority for radiation safety) for the mobile phone, https://ekeraies.gr/

ES	More information, clarity and health organizations involvement is needed. Publication of the EMF levels measured with more continuity in time for different periods of time and days. Identification of the sites that should be under specific control and follow-up. More cosmetic/mimetic or carefully installed sites could be of help as well. Specific mechanisms to control EMF levels and power should be implemented in the 5G equipment and 5G networks. It is needed countering misinformation at its early stage. It is needed to support local municipalities that are the closest entities to citizens.
FI	Radiation and Nuclear Safety Authority (STUK) supervises radiation and nuclear safety in Finland. The supervising is based on legislation, safety regulations and guidelines related to radiation and nuclear safety. For mobile networks see more details on 5G network and radiation safety: https://www.stuk.fi/web/en/topics/mobile-telephones-and-base-stations/base-stations/5g-network-and-radiation-safety Fact-based information sharing is important. It should take into account timeliness and transparency. Convincing communication requires a broad understanding of the subject in order for the debate to be held on the issue and to remain credible. Limit values should be based on scientifically validated health hazards and refrain from artificial precautionary measures.
FR	Bonne pratique : Mise en place d'un dispositif de surveillance et de mesure des ondes électromagnétiques permettant à tout personne de solliciter gratuitement auprès de l'Agence nationale des fréquences une mesure d'exposition soit dans les locaux d'habitation, soit dans les lieux accessibles au public. Un téléservice est en ligne depuis le mois de novembre 2017: https://mesures.anfr.fr/#/. L'ensemble des résultats des mesures obtenues sont publiés en open data sur le site https://www.cartoradio.fr/ Statut : Le dispositif est en place depuis le 1er janvier 2014. Justificatifs : Assurer auprès des citoyens une plus grande transparence sur les émissions liées aux déploiement de réseaux de téléphonie mobile et renforcer la confiance du public dans le respect des seuils réglementaires d'émission autorisés. **Courtesy translation :** Best practice: Making available a process for monitoring and measuring EMF which allows anyone to request an exposure measurement either in residential areas or any public area free of charge from the National Frequency Agency for . A teleservice has been online since November 2017: https://mesures.anfr.fr/#/. All the results of the measurements obtained are published in open data on the site https://www.cartoradio.fr/ Status: Available since January 1, 2014. Justification: Provide citizens with greater transparency on emissions linked to the deployment of mobile networks and strengthen public confidence related to the compliance with the authorized regulatory emission thresholds.
HR	Education of public and transparent publication of all relevant information regarding 5G and EMF are key elements to build public trust in institutions and reduce resistance to the deployment of 5G networks. A certain part of public in Croatia is rather concerned about effects that 5G might have on the human health. Therefore NRA and Croatian Employers´ Association ICT group (HUP ICT),

	started some activities with aim to educate public about electromagnetic fields and 5G. These activities are independent from each other but have the same goal - to facilitate 5G deployment. Croatian NRA HAKOM has published on its website a special section dedicated exclusively to 5G technology (https://www.hakom.hr/default.aspx?id=10530). This page covers simple explanations on what the 5G is, its technical characteristics, possible use cases etc. EU and national strategies are presented, as well. The EMF section explains relevant regulations (ICNIRP guidelines, current HR regulation) and the role of NRA in relation to EMF. Information on test licenses and deployed 5G sites are also published and regularly updated. HUP ICT, which brings together Croatian ICT companies including MNOs, started campaign "Connected and safe" (website available in Croatian only: http://povezanismosigurni.hr) trying to explain 5G technology including the frequency bands that are used, when network will be operational and what advantages will it bring
HU	The key is to authentically inform the general public. The NMHH campaign launched on 3 September 2020 provides assistance in recognising fake news—particularly for the members of the older generations (https://english.nmhh.hu/article/214381/The_NMHHs_September_campaign_calls_for_caution_in_the_sharing_of_news). The three campaign videos on the nmhh.hu/alhirek website warn of the dangers of the cursory reading of news, while the infographics and explanations highlight the critical elements of verifying news. Therefore, it is important to call attention to the need of conscious and critical news-reading skills again and again. The campaign uses the examples of hastily read, misunderstood news in brief, 15-second videos to show why we should slow down and ask a few self-check questions before sharing news. NMHH has an e smog webpage where makes available authentic information on EMF emission measurement issue (http://emirpub-prod.nmhh.hu/pubrendszer-web/eszmog/eszmogMeresek.jhtml). Education regarding these issues is one of NMHH goals.
IE	Matters relating to public exposure to EMF emissions in Ireland fall within the remit of the Environmental Protection Agency, and the informative and educational materials provided by the EPA is documented at the following link: http://www.epa.ie/radiation/emf/. Matters relating to exposure to EMF in the workplace in Ireland falls within the remit of the Health and Safety Authority: https://www.hsa.ie/eng/Topics/Physical_Agents/Electromagnetic_Fields/.
IT	The Decree Law n. 76 of 16 July 2020 introduced simplification rules for setting up telecommunications infrastructures and established that while municipalities can adopt a regulation to ensure the correct urban and territorial settlement of equipments, and to minimize the exposure of people to electromagnetic fields in specifically identified sensitive sites, it excludes municipalities' ability to introduce generalised limitations to the location of radio base stations for electronic communications of any kind in the municipal jurisdiction. In any case municipalities may not affect - even indirectly or through contingent and urgent measures – the limits of exposure to

	electric, magnetic and electromagnetic fields, the attention levels, and the quality targets - all matters reserved to the State pursuant article 4 of the Law n. 36 of 22 February 2001. 5G technology enables new services with a positive impact in the lives of citizens, in the management of local public services, and in the development of businesses and territories. Proactive action is therefore required by Member States as well as by the European Commission in order to raise the awareness of local administrations and public opinion that huge benefits will be brought to territories by 5G networks. In particular, it should be pointed out that such benefits will not be limited to the holders of the rights to use frequencies. Moreover it should be underlined that among other things - as Germany's example suggests - rights to use frequencies may also be owned by local public or private entities to create local service networks, thus enforcing the benefits of 5G impact on local economies. In the 5G scenario local administrations will therefore not only have an interest to regulate and enhance the use of a precious resource - such as spectrum is - with due respect for the health of citizens, but also to aim at increasing the overall wealth of their jurisdictions and the welfare of citizens. To this end it could be useful to provide local administrations with guidelines and tools useful to verify compliance with the standards relating to electromagnetic emissions, as well as for verifying the impact of projects for the installation of 5G networks on the basis of potentially enabled services (e.g. coverage and capacity of networks suitable for the activation of 5G services).
LT	Authoritative and reliable information on 5G networks, EMF emissions, with references to articles from World Health Organization, European Commission and European Parliament, is regularly published on websites of the National Public Health Centre and RRT.
LU	An information and sensibilisation campaign on EMF health issues by governments. In line with the Commission.
LV	According to national regulations, prior to official approval of operation of mobile communication base stations, including 5G stations, operators shall organise independent measurements of EMF. These tests are assessed by Health Inspectorate taking into account target values set by the Regulations of the Cabinet of Ministers "Rules for the assessment and limitation of exposure of the general public to electromagnetic fields" (approved in 2018). Additional tests can be requested in apartments nearby the base station upon health concerns or worries ex-pressed by inhabitants after the base station is launched. Regular communication on 5G issues is important to the public using different channels – from individual consultations to publica-tions in mass media, etc.
MT	Educating the people about the topic of EMF and 5G is considered by Malta to be crucial towards the process of 5G network deployment. Most members of the general public may not understand the concept of EMF, which therefore makes them "vulnerable" towards misinformation on the topic matter. Such educational campaigns target all the members of the public aiming to somewhat reduce the element of "unknown" on the subject of EMF. Another measure that may be useful in order to increase the acceptance of the 5G network deployments is the rollout of fixed / mobile EMF monitoring stations throughout areas of interest. The measurements results may then be made available to the general public preferably also in real time. Also, historic information may be made available as open data for the analysis and

	studies by any individual / entity. The introduction of EU-wide recommendations on best practices towards installation of mobile base station in areas such as school, playing fields, hospitals etc may also prove beneficial towards the acceptance of new base station installations by the general public. Malta further supports the BEREC and RSPG joint-paper on EMF issues80
NL	Continued research on EMF and health issues is important. The independent National Health Council in the Netherlands recently published a report on 5G and EMF and concluded (among others) that research on effects of exposure to frequencies around 26 GHz is virtually absent. The Health Council therefore recommends not using the 26 GHz frequency band for 5G. On the other hand, the organizations WHO, EC and ICNIRP see at this moment no rea-son to assume that use of the 26 GHz band within the internationally agreed exposure limits of ICNIRP 2020 can cause health issues. Also our National Health Council confirms that it is unlikely that exposure to frequencies that will be used for 5G can cause health issues. These frequencies have been in use since many years, and this has not led to evidence of negative health effects. The Dutch government therefore sees no reason to stop the issuance of the 26 GHz band. At the same time, it will closely monitor the latest scientific insights and aim for more international research. For mitigation of social resistance it is important that research-based information is accessible to the public. The Dutch "Kennisplatform EMV" (knowledge platform on EMF) has an im-portant role here. In the Kennisplatform EMV governmental and scientific organisations work together to interpret the latest results and make these accessible for citizens, professional and local governments. Regular measurement and monitoring of EMF levels is important to ensure that these remain within the applicable exposure limits. Measurement results should be available to the public, e.g. via a publicly available database at the relevant NRA.
PL	In terms of the information campaign regarding the relationship of the project with 5G technologies, the Minister of Digital Affairs of the Chancellery of the Prime Minister (former of the Ministry of Digital Affairs) has been presenting a clear message on the impact of telecommunications infrastructure, including 5G networks, on the environment and citizens since 2016. Positions in this area have been presented many times by the Minister of Digital Affairs during the works of the Parliamentary Committee on Digitization, Innovation and Modern Technologies as part of the current work of the committee, as well as during legislative work carried out in 2019 on the Act amending the Act on supporting the development of telecommunications services and networks and certain other acts and they are consistent with the position of science, which is reflected in the recommendations of international organizations dealing with non-ionizing radiation. It was also necessary to undertake intensive information and education activities

80 https://berec.europa.eu/eng/news_and_publications/whats_new/7667-berec-and-rspg-adopt-joint-position-paper-on-spectrum-related-emf-issues

	in the field of electromagnetic fields and 5G networks. This turned out to be crucial in relation to acts of disinformation in this area which intensified in Poland since December 2018. Among the activities carried out to raise public awareness, one should distinguish the organization by the Institute of Communications - the National Research Institute and the Ministry of Digital Affairs of the annual international scientific conferences on this subject (the first one took place in 2016, the next one is scheduled on December 9-10, 2020, largely will be devoted to the issue of disinformation in the 5G and EMF network and received the patronage of the European Commission - https://www.facebook.com/events/780621402515564/), or the organization in 2017 together with the International Telecommunications Union (ITU) of a workshop entitled 5G, EMF and Health. This workshop was attended by representatives of ITU, WHO, ICNIRP, as well as global operators and equipment suppliers. Moreover, at the request of the Minister of Digital Affairs, a study entitled "The electromagnetic field and people. On physics, biology, medicine, standards and 5G networks" (the so-called White Paper), presenting in an accessible way the most important issues related to the electromagnetic field at radio frequencies. Another activity, carried out on a continuous basis, is a dedicated website devoted to issues related to the 5G network, including the electromagnetic field (www.gov.pl/5G). This website publishes news on the implementation of the 5G network in Poland and in the world, as well as information on research and reports on the electromagnetic field. As part of the educational activities, the "A Guide to 5G", written in accessible language, was also made available, presenting the most important issues related to next-generation networks. Since December 2018, the Ministry of Digital Affairs has been carrying out activities against disinformation related to mobile telecommunications networks and the electromagnetic field. We joined the activities aimed at counterfighting the wave of fake news regarding the relationship between the coronavirus and 5G. Almost from the very beginning, as part of substantive support, we participated in the works of the factchecking teams i.e. Stop Fakenews and Fake Hunter. We cooperated with the Demagogue Association, which is the first fact-finding organization in Poland. In cooperation with the Institute of Communications, we have launched the #Please check in social media campaign. As part of it, we debunk even the most absurd myths that appear during the pandemic, regarding 5G and electromagnetic radiation, which are directly and indirectly associated with COVID-19. As part of the project for the construction of an Information System on Installations Generating Electromagnetic Radiation (SI2PEM), training courses are conducted, among others in the field of physical properties of electromagnetic fields emitted in wireless telecommunications networks and obtaining information about the levels of emissions of these fields. Due to the wave of fake news regarding 5G, EMF and the COVID relationn, which resulted in acts of destroying the telecommunications infrastructure in the country, measures were taken to prepare an information and educational campaign on the role of mobile telecommunications. At the turn of August and September, two information clips on mobile telecommunications networks were prepared - one presenting the risks associated with loss of connectivity, the other presenting the advantages of mobile connectivity. Both clips were broadcast on nationwide television (Polsat - 30 times - including prime time and TVN - 80 times). At the same time, the Ministry is also working on a project co-financed by Measure 3.4 of the Digital Poland Operational Program,

	the aim of which will be to counteract disinformation in the wireless telecommunications environment and to build social acceptance for modern radiocommunication technologies. The project involves the preparation of dedicated training courses as well as information and educational materials for local governments, journalists and the general public. We consider broad education of selected social groups to be the only effective method in the long term to combat systemic disinformation. Local government officials are a key group for the development of mobile telecommunications in Poland, primarily in terms of the investment process, the exact course of which they are not aware of. Local government officials are also the group that most often encounters social opposition to telecommunications investments in the first place. We considered equipping them with appropriate knowledge in the field of law, the functioning of telecommunications networks, research on health aspects of the impact of electromagnetic fields and soft skills in resolving disputes as the most important from the point of view of the project objectives. The second group are journalists, as well as the general public and school principals. As part of the project, we also want to prepare a supporting textbook for learning physics in primary schools. The project envisages very broad communication and educational activities in all fields of impact.
PT	ANACOM has issued a guide in order to draw some clarity regarding the possible effects of the fifth mobile generation (5G) on health (see https://www.anacom.pt/render.jsp?contentId=1549501&languageId=1). At national level, a study of the impact of 5G EMF emissions in the population is ongoing. Furthermore, ANACOM is preparing a number of webinars to municipalities, and latter to the operators, in order to foster 5G implementation (namely the small cells Regulation), noting that EMF issues will have to be monitored. We consider of major importance to combat misinformation and fake news and, in this context, it is important to maintain information campaigns directed to public entities and to the population in general, in particular in an articulated manner within the EU institutions.
RO	Some measures in this sense have already been taken: - in order to comply with the rules on limiting the exposure of the population to the effects of electro-magnetic fields, the licensee has the obligation to ensure, throughout the use of radio communication/broadcasting stations, compliance with the essential requirement for protection of health and safe-ty of persons and domestic animals, as well as the protection of property, including the objectives related to safety requirements; - the licensee has the obligation to transmit, at request, in case of radio communications/broadcasting stations located inside the built-up areas and outside the buildings, the results of non-ionizing electro-magnetic radiation measurements indicating the value of the cumulative electromagnetic field in the targeted location . - the measurements shall be made in accordance with the recommendations of the Electronic Communications Committee of the

	European Conference of Postal and Telecommunications Administrations and may not be older than 24 months from the date of request. - ANCOM is already measuring the level of EMF emissions generated by low or high frequency sources (e.g. Radio/TV, GSM, UMTS, WiFi, WiMax stations or other transmission-receiving equipment operating in the 100 KHz – 7 GHz range) though its fixed monitoring sensors in-stalled in urban centres. The real time results are made public through the website http://www.monitor-emf.ro/en/ . In addition to the permanent monitoring of the electromagnetic field through fixed sensors, ANCOM also performs measurements with mobile equipment and makes the results publicly available. Potential measures for operators may consist in: • Public demonstrations for press, influencers and general public with 5G measurements showing level of 5G EMF emissions in some sensitive places (near schools, residential neighbourhoods etc.); • General media and social media engagement – interviews, Q&As, videos, tutorials; • Engage with local celebrities (sports, music, medicine, etc.) to speak about 5G and provide assurance on health issues. Potential measures for competent authorities: • National Health Institutes and/or Ministry of Health could provide relevant data from WHO or results of local measurements (near schools, residential neighbourhoods etc.) to ensure the public about health safety issues related to 5G emissions; • Engage with public representatives from hospitals/ research institutes to support the messages regarding health safety issues related to 5G emissions. Potential measures for national regulatory authorities (communications): • Implement a 5G-dedicated web page with pertinent, objective and reliable information, featuring text, images and video content; • Communicate measurements of 5G EMF emissions (web, press, social media); • General media and social media engagement – interviews, Q&As, videos, tutorials; • Public demonstrations – how 5G works, how EMF emissions are measured.
SE	In order to ensure trust in radio technologies, including 5G, efforts are continuously made to ensure that measures are in place for the necessary monitoring of whether the operator's installed equipment is operating in compliance with the set limits. Efforts are taken by PTS together with the relevant and competent national authority to en-sure that transparent, factual and neutral information on EMF issues is spread and high-lighted to reach citizens in order to contribute to a better understanding by the general public of these issues and to promote transparency with regard to the new 5G technology.
SI	AKOS has no responsibility on this matter but timely communication all parties involved with the public, especially with a clear

	professional explanation of the problem.
SK	A lot of worries of 5G comes from ignorance and the only possible way is to explain and fight with hoaxes. NRA is trying to inform public about hoaxes through its website and social media.
NO	Nkom collaborates closely with the Norwegian Radiation and Nuclear Safety Authority (DSA) on questions regarding electromagnetic radiation. DSA is the national authority in the field of radiation protection. DSA provides general information, advice and guidance on possible health effects associated with exposure to electromagnetic fields. Nkom measures and documents radiation from electronic equipment and DSA uses the measurements from the Nkom and others to assess health risks and provide general health advice and guidance. Nkom has also measured early test sites (base stations) for 5G. As part of the collaboration, Nkom and DAS has, collaborated with the mobile operators and the installation industry, on calculations and measurements for all the main types of antenna installations. These results have been used to prepare diagrams and calculate restricted zones in front of antennas. Nkom participates in a working group that considers the marking of restricted zones. The authorities have produced several information brochures on radiation together, amongst others a folder with general information and a folder for installers, available online in English: file:///D:/sid/Downloads/Folder%20for%20installers%20about%20electromagnetic%20radiations,%20may%202020.pdf. Nkom has published information on EMF our webpages, available; https://www.nkom.no/fysiske-nett-og-infrastruktur/elektromagnetisk-straling. Nkom has also constructed an online radiation calculator where the public may calculate exposure level at specific geographic point. The service calculates a theoretical level from all the base stations, also base stations for 5G, that are within a radius of at least 500 meters. This is quite a popular service. Since 2013, Nkom has carried out long-term measurements in of the largest cities in Norway in a collaborative project with DSA. In this project, we look at the development of radiation in a city over time. Nkom measures the level in the same place at the same time four times a year. In Norway we have not seen cases where activists or opponents of the rollout of 5G, sabotage or damage infrastructure as seen in other countries.

***Question 26**: Add any other aspect which you deem relevant and important*	
Member State	**National best practice**
AT	Further issues concerning aspects of the respective recommendation: *(18) Without prejudice to any assessment of force majeure under Union law, Member States should ensure that any postponement of procedures to grant rights to use radio spectrum due to the COVID-19 crisis is kept to a minimum and lasts only for as long as is necessary to prevent or contain the spread of COVID-19. Member States should update accordingly any relevant national spectrum roadmap.* **Austria:** The 2nd 5G-Auction in Austria which included the 700 MHz band was scheduled to take place in April 2020. It was around that time that the Austrian Government decided to impose a strict lock down to contain the spread of COVID-19. TKK decided to postpone the auction in order to support the containment strategy of the Government. Moreover, the reduction of physical contacts led to many practical problems that would have put the auction at risk. However, TKK decided to limit the postponement to the minimum time necessary, taking into account the following aspects: • The auction should start as soon as possible after the containment strategy of the Government successfully reduces the spread of COVID-19. • All parties should have sufficient time to prepare themselves to participate in the auction under the special conditions caused by COVID-19 (eg setup secure communication channels, backup teams, etc.) • In the event that a second wave comes in autumn, the auction should be over before the Government imposes a second lock down. TKK expected the second wave not before October. • Give potential bidders sufficient time to reassess their valuation of spectrum with a view to the economic crises that was caused by the pandemic situation. Taking all that into account TKK decided to start the auction on the 17th of August. The auction ended 4 weeks later. The spectrum assignment of the 700 MHz band (as well as 1500 MHz and 2100 MHz) was published by 19th October 2020, see also https://www.rtr.at/en/tk/FRQ5G_2020 . *(19) Member States should request a Peer Review Forum pursuant to Article 35 of the European Electronic Communications Code to examine in advance draft measures for granting rights of use of spectrum within the 700 MHz, 3.4-3.8 GHz and 24.25-27.5 GHz frequency bands, with a view to exchanging best practices.*

	Austria: At the time the 5G-auctions in Austria were prepared the European Electronic Communications Code was not in effect. Nevertheless, TKK and RTR decided to conduct a voluntary RSPG Peer Review. The Peer Review took place in May 2019 in Vienna.
BE	In the Walloon Region: "Tax on pylon" agreement ("ToP") of the Walloon regional government with the 3 national Telco operators. In December 2016, the Walloon Government signed an agreement with the country's three mobile telecommunications operators. This agreement concerned the abolition of regional taxes on masts and pylons, in return for a commitment from each operator to invest 20 million Euros over three years, from 2017 to 2019, in addition to the basic investments of the operator, in order to fill the mobile coverage of the Walloon territory (3G/4G).
BG	
CY	
CZ	**A common Union toolbox of best practices to foster connectivity in support of economic recovery from the COVID-19 crisis – CZECH REPUBLIC** **On basis of practical experience of the Czech BCO, there are activities that could increase impact of BB Cost reduction Directive:** **1) Increasing awareness of and knowledge on the VHCN on local level (municipalities, especially remote areas etc.) by active discussions and information campaigns adjusted to needs of municipalities, supported by offering free of charge impartial assistance in negotiations of municipalities and investors (operators) on the VHCN. National BCOs are a very appropriate tool for that.** 2) **Practical examples of co-operation of municipalities and operators as well as matrix of agreements (that are in line with national legislation) on co-operation of municipalities and investors/operators prepared by BCOs in cooperation with all stakeholders.** The Czech Republic offers its best practise that approved to function in supporting the creation of better conditions for development of very high capacity networks (VHCN) of electronic communications to ensure high-speed internet in all parts of the Czech Republic. As the Ministry of Industry and Trade (MIT) together with the National Regulatory Authority – the Czech Telecommunications Office – executed a number of functions, namely mapping and administration of public support, that were envisaged for the Broadband Competence Offices (BCOs), there has been a room for finding another role of the BCO that would support the development of NGA, respectively VHCN. Knowing that • there are approximately 6300 municipalities in the Czech Republic, 96 per cent of which has up to 5000 inhabitants, • numerous municipalities are managed by people having to solve problems that are felt to be much more acute, • development of NGA, resp. VHCN, is a special technical and investment (line construction) demanding activity that needs a

good co-operation of both sides – the municipalities and investors

MIT worked out a design for the BCO where main goals are:

- Facilitating and **mediating** the management of constructing a line infrastructure among the players (mainly municipality operator/investor, civil society)
- **Promoting coordination** of civil works processes to facilitate expansion of high-speed telecommunication networks
- **Supporting abolishing present barriers** in construction process to reduce final costs of investments
- Continual searching for ways **how to improve** the project preparation stage and shorten the building time
- BCO is **independent and technology neutral**. Employees must follow the Code of Ethics agreed.

The structure that comprises a central office with overall managing and technical capacity and local co-ordinators that have different work experience (some are functioning or ex-municipality leaders, some were active in construction of electronic communications, some are active in Local Action Groups within programmes of regional development) made an excellent executive organ for above mentioned goals.

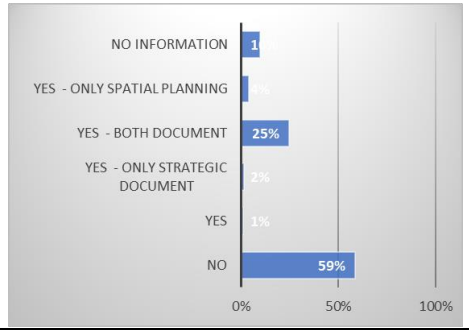
Although the BCO Czech Republic belongs to the most recent projects within the European network of BCOs, it seems to be quite successful. More information can be found at https://www.bconetwork.cz. The web will be available also in English soon.

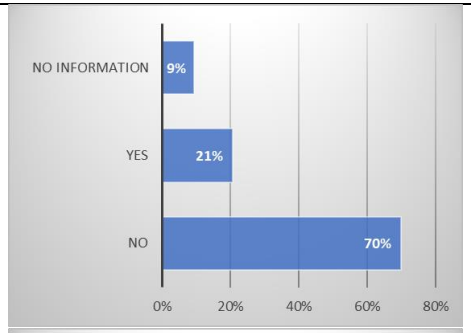
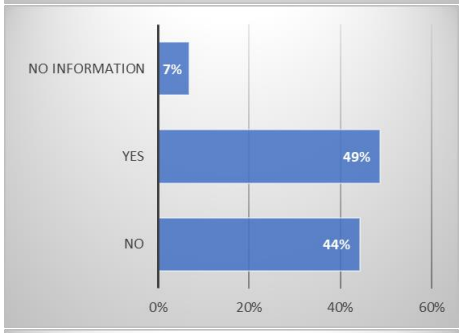
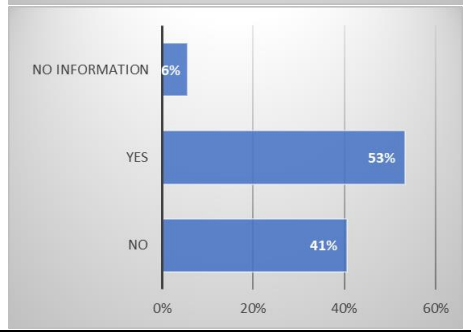
BCO is financed from the Technical Aid of OP OPEIC (EFRR) and currently is a structure within the MIT. The project is planned to continue within the frame of EFRR 2021-2027.

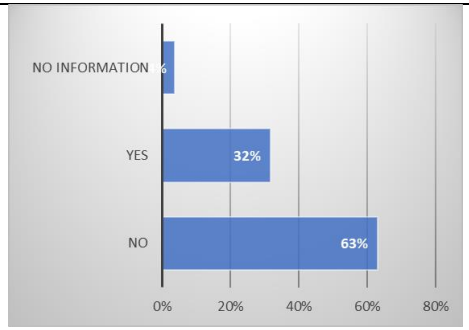
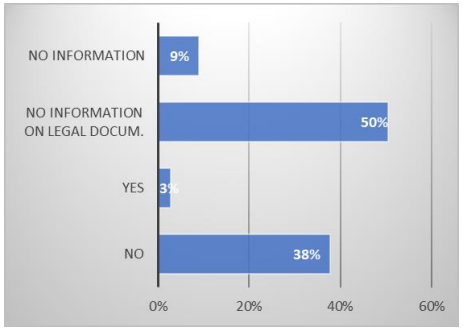
To be specific, the Czech BCO´s results after 3-and-half months support the above-mentioned framework and are quite impressive considering that the COVID crisis cancelled a lot of activities that BCO planned to realize.

Despite of general situation, local co-ordinators realized more than 500 meetings with representatives of local municipalities. All meetings are documented in a system-processable notation expressing views and information of the leader of given municipality. Thanks to mentioned views and information about the local reality the support can be focused quite precisely. Results of the survey done by local co-ordinators were processed and following is obvious:

Has the municipality a part dedicated to the development of data/Internet networks in Spatial Plan and Strategic Document of the Municipality?



	Does the municipality co-operate with operators when developing the Strategy of development of the municipality?		
	Does the municipality support the development of high-speed internet access and does it support enabling conditions for the realisation similarly in comparison to other infrastructure?		
	Has the municipality an overview of concepts such as high-speed access/types of networks, requirements and conditions of introducing them?		

	Does the municipality consider when realizing construction/reconstructs an idea to join these activities with development of electronic communications networks / public internet?  Did the municipality solve co-ordination of such construction works in line with the act No. 194/2017 Coll.[81] to ease the construction of high-speed internet?  Conclusions from above mentioned: 1. It is necessary to increase the knowledge concerning the importance of VHCN, including terminology, so that the municipality is not lost in the topic. 2. It is important to show on examples why the municipality should support the development of VHCN and what it will gain by doing so. 3. It is worth to show on examples how the co-operation can be set up when building multiple networks at once. In addition to what was stated above, the BCO also supported approximately 40 requests of operators/municipalities either by preparing a supportive written material or by personal mediation on site.
DE	Within the framework of the Connectivity Toolbox process, it has to be taken into consideration that possible new measures at EU level - even those that are formally voluntary - which are associated with additional procedural steps (e.g. which will require further

81 Act 194/2017 Coll., on measures to reduce the cost of deploying high-speed electronic communications networks and on amendment of some relating laws that transposes the Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks

	coordination within the context of the submission of applications or the permit granting procedure of the public authorities, etc.) can cause delays. This runs counter to the purpose of Recommendation (EU) 2020/1307, because it impedes fast and investment-friendly access to 5G radio frequencies. Such additional procedural requirements are to be avoided within the framework of establishing a common Union toolbox.
DK	
EE	
EL	In 2019, 5G pilot networks were launched in 3 cities (Trikala, Kalamata and Zografou). The auction for 5G spectrum is foreseen for December 2020. The "Phaistos Fund", which is established under the Greek Law 4727/2020, will operate for the public interest handling its funds (25% of the revenue incurred from the spectrum auction) according to IFRS. Its sole purpose is to invest in companies (established in Greece and abroad), provided that they are active in product research and / or development and / or services operating on 5G (or related) infrastructure in Greece. Eligible companies could be active in sectors such as transport / logistics, manufacturing, industry, defense, goods and utility networks, health, tourism, information and media.
ES	
FI	To promote the environmental aspects of communications network deployment and operation, it would be necessary to have a common understanding of the current situation and the most important factors influencing the environmental footprint. These common criteria would enable comparing different technologies and keep track of the development. To promote the possibilities for shared use of passive infrastructure and in the absence of regulatory obligations, it would be necessary to find solutions to finance the initial investment to passive infrastructure and reduce the uncertainty of the investment when future demand is unknown. In Finland the 26 GHz auction was held in June 2020 as there was no justification to delay the auction despite the Covid-19. During Covid-19 the use of communications networks (fiber and mobile) has been growing even more rapidly and functionality of society is being more dependent on reliable and widely available networks.
FR	Aucune autre pratique a été indentifiée. No additional best practice was identified.
HR	
HU	

IE	**Annex 1 - Legal Framework and Statutory Objectives under which ComReg Spectrum Management operates** The Communications Regulation Act 2002 (as amended by the Communications Regulation (Amendment) Act 2007) (the "2002 Act"), the EU Common Regulatory Framework (including the Framework and Authorisation Directives[1] as transposed into Irish law by the corresponding Framework and Authorisation Regulations[2]), and the Wireless Telegraphy Acts1926 to 2009[3] set out, amongst other things, powers, functions, duties and objectives of ComReg that are relevant to the management of the radio frequency spectrum in Ireland and to this consultation document. Apart from licensing and making regulations in relation to licences, ComReg's functions include the management of Ireland's radio frequency spectrum in accordance with ministerial Policy Directions under section 13 of the 2002 Act, having regard to its objectives under section 12 of the 2002 Act, Regulation 16 of the Framework Regulations and the provisions of Article 8a of the Framework Directive. ComReg is to carry out its functions effectively, and in a manner serving to ensure that the allocation and assignment of radio frequencies is based on objective, transparent, non-discriminatory and proportionate criteria. All references in this annex to enactments are to the enactment as amended at the date hereof, unless the context otherwise requires. **New European Electronic Communications Code** On 20 December 2018, Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code ("EECC") entered into force. The EECC replaces the EU Common Regulatory Framework adopted in 2002 (and amended in 2009) under which ComReg

[1] Directive No. 2002/21/EC of the European Parliament and of the Council of 7 March 2002 (as amended by Regulation (EC) No. 717/2007 of 27 June 2007, Regulation (EC) No. 544/2009 of 18 June 2009 and Directive 2009/140/EC of the European Parliament and Council of 25 November 2009) (the "Framework Directive") and Directive No. 2002/20/EC of the European Parliament and of the Council of 7 March 2002 (as amended by Directive 2009/140/EC) (the "Authorisation Directive").

[2] The European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011) and the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations 2011 (S.I. No. 335 of 2011) respectively.

[3] The Wireless Telegraphy Acts 1926 to 1988 and Sections 181 (1) to (7) and (9) and Section 182 of the Broadcasting Act 2009.

has regulated electronic communications since 2003.

With some limited exceptions (see Article 124 of the EECC), Member States have until 21 December 2020 to transpose the EECC into national law.[4] Until then, the existing EU Common Regulatory Framework will continue to apply.

Primary Objectives and Regulatory Principles under the 2002 Act and Common Regulatory Framework

ComReg's primary objectives in carrying out its statutory functions in the context of electronic communications are to:

- promote competition[5];
- contribute to the development of the internal market[6];
- promote the interests of users within the Community[7];
- ensure the efficient management and use of the radio frequency spectrum in Ireland in accordance with a direction under section 13 of the 2002 Act[8]; and
- unless otherwise provided for in Regulation 17 of the Framework Regulations, take the utmost account of the desirability of technological neutrality in complying with the requirements of the Specific Regulations[9] in particular those designed to ensure effective competition[10].

[4] With the exception of Articles 53(2), (3) and (4), and Article 54 (see Article 124).
[5] Section 12 (1)(a)(i) of the 2002 Act.
[6] Section 12 (1)(a)(ii) of the 2002 Act.
[7] Section 12(1)(a)(iii) of the 2002 Act.
[8] Section 12(1)(b) of the 2002 Act. Whilst this objective would appear to be a separate and distinct objective in the 2002 Act, it is noted that, for the purposes of ComReg's activities in relation to electronic communications networks and services ("ECN" and "ECS"), Article 8 of the Framework Directive identifies "*encouraging efficient use and ensuring the effective management of radio frequencies (and numbering resources*)" as a sub-objective of the broader objective of the promotion of competition.

Promotion of Competition

Section 12(2)(a) of the 2002 Act requires ComReg to take all reasonable measures which are aimed at the promotion of competition, including:

- ensuring that users, including disabled users, derive maximum benefit in terms of choice, price and quality;
- ensuring that there is no distortion or restriction of competition in the electronic communications sector; and
- encouraging efficient use and ensuring the effective management of radio frequencies and numbering resources.

In so far as the promotion of competition is concerned, Regulation 16(1)(b) of the Framework Regulations also requires ComReg to:

- ensure that elderly users and users with special social needs derive maximum benefit in terms of choice, price and quality, and
- ensure that, in the transmission of content, there is no distortion or restriction of competition in the electronic communications sector.

Regulation 9(11) of the Authorisation Regulations also provides that ComReg must ensure that radio frequencies are efficiently and effectively used having regard to section 12(2)(a) of the 2002 Act and Regulations 16(1) and 17(1) of the Framework Regulations. Regulation 9(11) further provides that ComReg must ensure that competition is not distorted by any transfer or accumulation of rights of use for radio frequencies and, for this purpose, ComReg may take appropriate measures such as mandating the sale or the lease of rights of use for radio frequencies.

[9] The 'Specific Regulations' comprise collectively the Framework Regulations, the Authorisation Regulations, the European Communities (Electronic Communications Networks and Services) (Access) Regulations 2011 (S.I. No. 334 of 2011), the European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011 (S.I. 337 of 2011) and the European Communities (Electronic Communications Networks and Services) (Privacy and Electronic Communications) Regulations 2011 (S.I. No. 336 of 2011).

[10] Regulation 16(1)(a) of the Framework Regulations.

Contributing to the Development of the Internal Market

Section 12(2)(b) of the 2002 Act requires ComReg to take all reasonable measures which are aimed at contributing to the development of the internal market, including:

- removing remaining obstacles to the provision of ECN, ECS and associated facilities at Community level;
- encouraging the establishment and development of trans-European networks and the interoperability of transnational services and end-to-end connectivity; and
- co-operating with electronic communications national regulatory authorities in other Member States of the Community and with the Commission of the Community in a transparent manner to ensure the development of consistent regulatory practice and the consistent application of Community law in this field.

In so far as contributing to the development of the internal market is concerned, Regulation 16(1)(c) of the Framework Regulations also requires ComReg to co-operate with the Body of European Regulators for Electronic Communications ("BEREC") in a transparent manner to ensure the development of consistent regulatory practice and the consistent application of EU law in the field of electronic communications.

A2.1.3 Promotion of Interests of Users

Section 12(2)(c) of the 2002 Act requires ComReg, when exercising its functions in relation to the provision of electronic communications networks and services, to take all reasonable measures which are aimed at the promotion of the interests of users within the Community, including:

- ensuring that all users have access to a universal service;
- ensuring a high level of protection for consumers in their dealings with suppliers, in particular by ensuring the availability of simple and inexpensive dispute resolution procedures carried out by a body that is independent of the parties involved;
- contributing to ensuring a high level of protection of personal data and privacy;

- promoting the provision of clear information, in particular requiring transparency of tariffs and conditions for using publicly available ECS;
- encouraging access to the internet at reasonable cost to users;
- addressing the needs of specific social groups, in particular disabled users; and
- ensuring that the integrity and security of public communications networks are maintained.

In so far as promotion of the interests of users within the EU is concerned, Regulation 16(1)(d) of the Framework Regulations also requires ComReg to:

- address the needs of specific social groups, in particular, elderly users and users with special social needs, and
- promote the ability of end-users to access and distribute information or use applications and services of their choice.

A2.1.4 Regulatory Principles

In pursuit of its objectives under Regulation 16(1) of the Framework Regulations and section 12 of the 2002 Act, ComReg must apply objective, transparent, non-discriminatory and proportionate regulatory principles by, amongst other things:

- promoting regulatory predictability by ensuring a consistent regulatory approach over appropriate review periods;
- ensuring that, in similar circumstances, there is no discrimination in the treatment of undertakings providing ECN and ECS;
- safeguarding competition to the benefit of consumers and promoting, where appropriate, infrastructure-based competition;
- promoting efficient investment and innovation in new and enhanced infrastructures, including by ensuring

that any access obligation takes appropriate account of the risk incurred by the investing undertakings and by permitting various cooperative arrangements between investors and parties seeking access to diversify the risk of investment, while ensuring that competition in the market and the principle of non-discrimination are preserved;

- taking due account of the variety of conditions relating to competition and consumers that exist in the various geographic areas within the State; and

- imposing ex-ante regulatory obligations only where there is no effective and sustainable competition and relaxing or lifting such obligations as soon as that condition is fulfilled.

BEREC

Under Regulation 16(1)(3) of the Framework Regulations, ComReg must:

- having regard to its objectives under section 12 of the 2002 Act and its functions under the Specific Regulations, actively support the goals of BEREC of promoting greater regulatory co-ordination and coherence; and

- take the utmost account of opinions and common positions adopted by BEREC when adopting decisions for the national market.

Other Obligations under the 2002 Act

In carrying out its functions, ComReg is required, amongst other things, to:

- seek to ensure that any measures taken by it are proportionate having regard to the objectives set out in section 12 of the 2002 Act;[11]

[11] Section 12(3) of the 2002 Act.

- have regard to international developments with regard to the radio frequency spectrum[12]; and

- take the utmost account of the desirability that the exercise of its functions aimed at achieving its radio frequency management objectives does not result in discrimination in favour of or against particular types of technology for the provision of ECS.[13]

Policy Directions[14]

Section 12(4) of the 2002 Act provides that, in carrying out its functions, ComReg must have appropriate regard to policy statements, published by or on behalf of the Government or a Minister of the Government and notified to the Commission, in relation to the economic and social development of the State. Section 13(1) of the 2002 Act requires ComReg to comply with any policy direction given to ComReg by the Minister for Communications, Energy and Natural Resources ("the Minister") as he or she considers appropriate, in the interests of the proper and effective regulation of the electronic communications market, the management of the radio frequency spectrum in the State and the formulation of policy applicable to such proper and effective regulation and management, to be followed by ComReg in the exercise of its functions. Section 10(1)(b) of the 2002 Act also requires ComReg, in managing the radio frequency spectrum, to do so in accordance with a direction of the Minister under section 13 of the 2002 Act, while Section 12(1)(b) requires ComReg to ensure the efficient management and use of the radio frequency spectrum in accordance with a direction under Section 13.

The Policy Directions which are most relevant in this regard include the following:

Policy Direction No.3 on Broadband Electronic Communication Networks

ComReg shall in the exercise of its functions, take into account the national objective regarding broadband rollout, viz, the Government wishes to ensure the widespread availability of open-access, affordable, always-on broadband infrastructure and services for businesses and citizens on a balanced regional basis within three years, on the basis of utilisation of a range of

[12] Section 12(5) of the 2002 Act.

[13] Section 12(6) of the 2002 Act.

[14] ComReg also notes, and takes due account of, the Spectrum Policy Statement issued by the Department of Communications Energy and Natural Resources in September 2010.

existing and emerging technologies and broadband speeds appropriate to specific categories of service and customers.

Policy Direction No.4 on Industry Sustainability

ComReg shall ensure that in making regulatory decisions in relation to the electronic communications market, it takes account of the state of the industry and in particular the industry's position in the business cycle and the impact of such decisions on the sustainability of the business of undertakings affected.

Policy Direction No.5 on Regulation only where necessary

Where ComReg has discretion as to whether to impose regulatory obligations, it shall, before deciding to impose such regulatory obligations on undertakings, examine whether the objectives of such regulatory obligations would be better achieved by forbearance from imposition of such obligations and reliance instead on market forces.

Policy Direction No.6 on Regulatory Impact Assessment

ComReg, before deciding to impose regulatory obligations on undertakings in the market for electronic communications or for the purposes of the management and use of the radio frequency spectrum or for the purposes of the regulation of the postal sector, shall conduct a Regulatory Impact Assessment in accordance with European and International best practice and otherwise in accordance with measures that may be adopted under the Government's Better Regulation programme.

Policy Direction No.7 on Consistency with other Member States

ComReg shall ensure that, where market circumstances are equivalent, the regulatory obligations imposed on undertakings in the electronic communications market in Ireland should be equivalent to those imposed on undertakings in equivalent positions in other Member States of the European Community.

Policy Direction No.11 on the Management of the Radio Frequency Spectrum

ComReg shall ensure that, in its management of the radio frequency spectrum, it takes account of the interests of all users of the radio frequency spectrum.

General Policy Direction No.1 on Competition (2004)

ComReg shall focus on the promotion of competition as a key objective. Where necessary, ComReg shall implement remedies which counteract or remove barriers to market entry and shall support entry by new players to the market and entry into new sectors by existing players. ComReg shall have a particular focus on:

- market share of new entrants;
- ensuring that the applicable margin attributable to a product at the wholesale level is sufficient to promote and sustain competition;
- price level to the end user;
- competition in the fixed and mobile markets; and
- the potential of alternative technology delivery platforms to support competition

Other Relevant Obligations under the Framework and Authorisation Regulations

Framework Regulations

Regulation 17

Regulation 17 of the Framework Regulations governs the management of radio frequencies for ECS. Regulation 17(1) requires that ComReg, subject to any directions issued by the Minister pursuant to Section 13 of the 2002 Act and having regard to its objectives under Section 12 of the 2002 Act and Regulation 16 of the Framework Regulations and the provisions of Article 8a of the Framework Directive, ensure:

- the effective management of radio frequencies for ECS;
- that spectrum allocation used for ECS and issuing of general authorisations or individual rights of use for such radio frequencies are based on objective, transparent, non-discriminatory and proportionate criteria; and
- ensure that harmonisation of the use of radio frequency spectrum across the EU is promoted, consistent with the need to ensure its effective and efficient use and in pursuit of benefits for the consumer such as economies

of scale and interoperability of services, having regard to all decisions and measures adopted by the European Commission in accordance with Decision No. 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the EU.

Regulation 17(2) provides that, unless otherwise provided in Regulation 17(3), ComReg must ensure that all types of technology used for ECS may be used in the radio frequency bands that are declared available for ECS in the Radio Frequency Plan published under Section 35 of the 2002 Act in accordance with EU law.

Regulation 17(3) provides that, notwithstanding Regulation 17(2), ComReg may, through licence conditions or otherwise, provide for proportionate and non-discriminatory restrictions to the types of radio network or wireless access technology used for ECS where this is necessary to:

- avoid harmful interference;
- protect public health against electromagnetic fields;
- ensure technical quality of service;
- ensure maximisation of radio frequency sharing;
- safeguard the efficient use of spectrum; or
- ensure the fulfilment of a general interest objective as defined by or on behalf of the Government or a Minister of the Government in accordance with Regulation 17(6).

Regulation 17(4) requires that, unless otherwise provided in Regulation 17(5), ComReg must ensure that all types of ECS may be provided in the radio frequency bands, declared available for ECS in the Radio Frequency Plan published under Section 35 of the Act of 2002 in accordance with EU law.

Regulation 17(5) provides that, notwithstanding Regulation 17(4), ComReg may provide for proportionate and non-discriminatory restrictions to the types of ECS to be provided, including where necessary, to fulfil a requirement under the International Telecommunication Union Radio Regulations ("ITU-RR").

Regulation 17(6) requires that measures that require an ECS to be provided in a specific band available for ECS must be justified in order to ensure the fulfilment of a general interest objective as defined by or on behalf of the Government or a Minister of the Government in conformity with EU law such as, but not limited to:

- safety of life;
- the promotion of social, regional or territorial cohesion;
- the avoidance of inefficient use of radio frequencies; or
- the promotion of cultural and linguistic diversity and media pluralism, for example, by the provision of radio and television broadcasting services.

Regulation 17(7) provides that ComReg may only prohibit the provision of any other ECS in a specific radio spectrum frequency band where such a prohibition is justified by the need to protect safety of life services. ComReg may, on an exceptional basis, extend such a measure in order to fulfil other general interest objectives as defined by or on behalf of the Government or a Minister of the Government.

Regulation 17(8) provides that ComReg must, in accordance with Regulation 18, regularly review the necessity of the restrictions referred to in Regulations 17(3) and 17(5) and must make the results of such reviews publicly available.

Regulation 17(9) provides that Regulations 17(2) to (7) only apply to spectrum allocated to be used for ECS, general authorisations issued and individual rights of use for radio frequencies granted after 1 July 2011. Spectrum allocations, general authorisations and individual rights of use which already existed on 1 July 2011 are subject to Regulation 18 of the Framework Regulations.

Regulation 17(10) provides that ComReg may, having regard to its objectives under Section 12 of the 2002 Act and Regulation 16 and its functions under the Specific Regulations, lay down rules in order to prevent spectrum hoarding, in particular by setting out strict deadlines for the effective exploitation of the rights of use by the holder of rights and by withdrawing the rights of use in cases of non-compliance with the deadlines. Any rules laid down under this Regulation must be applied in a proportionate, non-discriminatory and transparent manner.

Regulation 17(11) requires ComReg to, in the fulfilment of its obligations under that Regulation, respect relevant international

agreements, including the ITU-RR and any public policy considerations brought to its attention by the Minister.

Regulation 23 on security and integrity and Regulation 24 on implementation and enforcement of Regulation 23

Regulation 23 provides:

> *23. (1) Undertakings providing public communications networks or publicly available electronic communications services shall take appropriate technical and organisational measures to appropriately manage the risks posed to security of networks and services. In particular, measures shall be taken to prevent and minimise the impact of security incidents on users and interconnected networks.*
>
> *(2) The technical and organisational measures referred to in paragraph (1) shall, having regard to the state of the art, ensure a level of security appropriate to the risk presented.*
>
> *(3) Undertakings providing public communications networks shall take all appropriate steps to guarantee the integrity of their networks, thereby ensuring the continuity of supply of services provided over those networks.*
>
> *(4) (a) An undertaking providing public communications networks or publicly available electronic communications services shall notify the Regulator in the event of a breach of security or loss of integrity that has a significant impact on the operation of networks or services.*
>
> *(b) Where the Regulator receives a notification under subparagraph (a), it shall inform the Minister of the said notification and, with the agreement of the Minister, it shall also, where appropriate, inform the national regulatory authorities in other Member States and ENISA.*
>
> *(c) Where it is considered that it is in the public interest to do so the Regulator, with the agreement of the Minister, may inform the public in relation to the breach notified under subparagraph (a) or require the undertaking to inform the public accordingly.*
>
> *(5) The Regulator shall annually submit a summary report to the Minister, the European*

Commission and EINSA on the notifications received and the actions taken in accordance with paragraph (4).

(6) An undertaking that fails to comply with the requirements of paragraph (4)(a) or (c) commits an offence.

Regulation 24 provides:

24. (1) For the purpose of ensuring compliance with Regulation 23 (1), (2) and (3), the Regulator may issue directions to an undertaking providing public communications networks or publicly available electronic communications services, including directions in relation to time limits for implementation.

(2) The Regulator may require an undertaking providing public communications networks or publicly available electronic communications services to—

(a) provide information needed to assess the security or integrity of their services and networks, including documented security policies, and

(b) submit to a security audit to be carried out by a qualified independent body nominated by the Regulator and make the results of the audit available to the Regulator and the Minister. The cost of the audit is to be borne by the undertaking.

(3) An undertaking in receipt of a direction under paragraph (1) shall comply with the direction.

(4) An undertaking that fails to comply with a direction under paragraph (1) or a requirement under paragraph (2) commits an offence.

Authorisation Regulations

Decision to limit rights of use for radio frequencies

Regulation 9(2) of the Authorisation Regulations provides that ComReg may grant individual rights of use for radio

frequencies by way of a licence where it considers that one or more of the following criteria are applicable:

- it is necessary to avoid harmful interference;
- it is necessary to ensure technical quality of service;
- it is necessary to safeguard the efficient use of spectrum; or
- it is necessary to fulfil other objectives of general interest as defined by or on behalf of the Government or a Minister of the Government in conformity with EU law.

Regulation 9(10) of the Authorisation Regulations provides that ComReg must not limit the number of rights of use for radio frequencies to be granted except where this is necessary to ensure the efficient use of radio frequencies in accordance with Regulation 11.

Regulation 9(7) also provides that:

- where individual rights of use for radio frequencies are granted for a period of 10 years or more and such rights may not be transferred or leased between undertakings in accordance with Regulation 19 of the Framework Regulations, ComReg must ensure that criteria set out in Regulation 9(2) apply for the duration of the rights of use, in particular upon a justified request from the holder of the right.
- where ComReg determines that the criteria referred to in Regulation 9(2) are no longer applicable to a right of use for radio frequencies, ComReg must, after a reasonable period and having notified the holder of the individual rights of use, change the individual rights of use into a general authorisation or must ensure that the individual rights of use are made transferable or leasable between undertakings in accordance with Regulation 19 of the Framework Regulations.

Publication of procedures

Regulation 9(4)(a) of the Authorisation Regulations requires that ComReg, having regard to the provisions of Regulation 17 of the Framework Regulations, establish open, objective, transparent, non-discriminatory and proportionate procedures for the

granting of rights of use for radio frequencies and cause any such procedures to be made publicly available.

Duration of rights of use for radio frequencies

Regulation 9(6) of the Authorisation Regulations provides that rights of use for radio frequencies must be in force for such period as ComReg considers appropriate having regard to the network or service concerned in view of the objective pursued taking due account of the need to allow for an appropriate period for investment amortisation.

Conditions attached to rights of use for radio frequencies

Regulation 9(5) of the Authorisation Regulations provides that, when granting rights of use for radio frequencies, ComReg must, having regard to the provisions of Regulations 17 and 19 of the Framework Regulations, specify whether such rights may be transferred by the holder of the rights and under what conditions such a transfer may take place.

Regulation 10(1) of the Authorisation Regulations provides that, notwithstanding Section 5 of the Wireless Telegraphy Act,1926, but subject to any regulations under Section 6 of that Act, ComReg may only attach those conditions listed in Part B of the Schedule to the Authorisation Regulations. Part B lists the following conditions which may be attached to rights of use:

- Obligation to provide a service or to use a type of neutrality for which the rights of use for the frequency has been granted including, where appropriate, coverage and quality requirements.
- Effective and efficient use of frequencies in conformity with the Framework Directive and Framework Regulations.
- Technical and operational conditions necessary for the avoidance of harmful interference and for the limitation of exposure of the general public to electromagnetic fields, where such conditions are different from those included in the general authorisation.
- Maximum duration in conformity with Regulation 9, subject to any changes in the national frequency plan.
- Transfer of rights at the initiative of the rights holder and conditions of such transfer in conformity with the Framework Directive.

- Usage fees in accordance with Regulation 19.
- Any commitments which the undertaking obtaining the usage right has made in the course of a competitive or comparative selection procedure.
- Obligations under relevant international agreements relating to the use of frequencies.
- Obligations specific to an experimental use of radio frequencies.

Regulation 10(2) also requires that any attachment of conditions under Regulation 10(1) to rights of use for radio frequencies must be non-discriminatory, proportionate and transparent and in accordance with Regulation 17 of the Framework Regulations.

Procedures for limiting the number of rights of use to be granted for radio frequencies

Regulation 11(1) of the Authorisation Regulations provides that, where ComReg considers that the number of rights of use to be granted for radio frequencies should be limited it must, without prejudice to Sections 13 and 37 of the 2002 Act:

- give due weight to the need to maximise benefits for users and to facilitate the development of competition, and
- give all interested parties, including users and consumers, the opportunity to express their views in accordance with Regulation 12 of the Framework Regulations.

Regulation 11(2) of the Authorisation Regulations requires that, when granting the limited number of rights of use for radio frequencies it has decided upon, ComReg does so *"…on the basis of selection criteria which are objective, transparent, non-discriminatory and proportionate and which give due weight to the achievement of the objectives set out in Section 12 of the 2002 Act and Regulations 16 and 17 of the Framework Regulations."*

Regulation 11(4) provides that where it decides to use competitive or comparative selection procedures, ComReg must, inter alia, ensure that such procedures are fair, reasonable, open and transparent to all interested parties.

Fees for spectrum rights of use

Regulation 19 of the Authorisation Regulations permits ComReg to impose fees for rights of use which reflect the need to ensure the optimal use of the radio frequency spectrum.

ComReg is required to ensure that any such fees are objectively justified, transparent, non-discriminatory and proportionate in relation to their intended purpose and take into account the objectives of ComReg as set out in Section 12 of the 2002 Act and Regulation 16 of the Framework Regulations.

Amendment of rights and obligations

Regulation 15 of the Authorisation Regulations permits ComReg to amend rights and conditions concerning rights of use, provided that any such amendments may only be made in objectively justified cases and in a proportionate manner, following the process set down in Regulation 15(4).

A2.3 Other Relevant Provisions

Wireless Telegraphy Act, 1926 (the "1926 Act")

Under Section 5(1) of the 1926 Act, ComReg may, subject to that Act, and on payment of the prescribed fees (if any), grant to any person a licence to keep and have possession of apparatus for wireless telegraphy in any specified place in the State.

Section 5(2) provides that, such a licence shall be in such form, continue in force for such period and be subject to such conditions and restrictions (including conditions as to suspension and revocation) as may be prescribed in regard to it by regulations made by ComReg under Section 6.

Section 5(3) also provides that, where it appears appropriate to ComReg, it may, in the interests of the efficient and orderly use of wireless telegraphy, limit the number of licences for any particular class or classes of apparatus for wireless telegraphy granted under Section 5.

Section 6 provides that ComReg may make regulations prescribing in relation to all licences granted by it under Section 5, or any particular class or classes of such licences, all or any of the following matters:

- the form of such licences;
- the period during which such licences continue in force;
- the manner in which, the terms on which, and the period or periods for which such licences may be renewed;
- the circumstances in which or the terms under which such licences are granted;
- the circumstances and manner in which such licences may be suspended or revoked by ComReg;
- the terms and conditions to be observed by the holders of such licences and subject to which such licences are deemed to be granted;
- the fees to be paid on the application, grant or renewal of such licences or classes of such licences, subject to such exceptions as ComReg may prescribe, and the time and manner at and in which such fees are to be paid; and
- matters which such licences do not entitle or authorise the holder to do.

Section 6(2) provides that Regulations made by ComReg under Regulation 6 may authorise and provide for the granting of a licence under Section 5 subject to special terms, conditions, and restrictions to persons who satisfy it that they require the licences solely for the purpose of conducting experiments in wireless telegraphy.

Regulation 10(1) of the Authorisation Regulations provides that, notwithstanding section 5 of the Act of 1926 but subject to any regulations made under section 6 of that Act, where ComReg attaches conditions to rights of use for radio frequencies, it may only attach such conditions as are listed in Part B of the Schedule to the Authorisation Regulations.

Broadcasting Act 2009 (the "2009 Act")

Section 132 of the 2009 Act relates to the duties of ComReg in respect of the licensing of spectrum for use in establishing digital terrestrial television multiplexes and places an obligation on ComReg to issue:

- two DTT multiplex licences to RTÉ by request (see Sections 132(1) and (2) of the 2009 Act); and
- a minimum of four DTT multiplex licences to the BAI by request (see Sections 132(3) and (4) of the 2009 Act) for the provision of commercial TV content.

Article 4 of Directive 2002/77/EC (Competition Directive)

Article 4 of the Competition Directive provides that:

> *"Without prejudice to specific criteria and procedures adopted by Member States to grant rights of use of radio frequencies to providers of radio or television broadcast content services with a view to pursuing general interest objectives in conformity with Community law:*
>
> - *Member States shall not grant exclusive or special rights of use of radio frequencies for the provision of electronic communications services.*
> - *The assignment of radio frequencies for electronic communication services shall be based on objective, transparent, non-discriminatory and proportionate criteria."*

Radio Spectrum Policy Programme

On 15 February 2012, the European Parliament adopted the five-year Radio Spectrum Policy Programme ("RSPP") which establishes a multi-annual radio spectrum policy programme for the strategic planning and harmonisation of the use of spectrum. The objective is to ensure the functioning of the internal market in the Union policy areas involving the use of spectrum, such as electronic communications, research, technological development and space, transport, energy and audiovisual policies.

Among other things, Article 5 of the RSPP, entitled "Competition", provides:

> *"1. Member States shall promote effective competition and shall avoid distortions of competition in the internal market for electronic communications services in accordance with Directives 2002/20/EC and 2002/21/EC.*

		They shall also take into account competition issues when granting rights of use of spectrum to users of private electronic communication networks. *2. For the purposes of the first subparagraph of paragraph 1 and without prejudice to the application of competition rules and to the measures adopted by Member States in order to achieve general interest objectives in accordance with Article 9(4) of Directive 2002/21/EC, Member States may adopt, inter alia, measures:* *(a) limiting the amount of spectrum for which rights of use are granted to any undertaking, or attaching conditions to such rights of use, such as the provision of wholesale access, national or regional roaming, in certain bands or in certain groups of bands with similar characteristics, for instance the bands below 1 GHz allocated to electronic communication services. Such additional conditions may be imposed only by the competent national authority;* *(b) reserving, if appropriate in regard to the situation in the national market, a certain part of a frequency band or group of bands for assignment to new entrants;* *(c) refusing to grant new rights of use of spectrum or to allow new spectrum uses in certain bands, or attaching conditions to the grant of new rights of use of spectrum or to the authorisation of new spectrum uses, in order to avoid the distortion of competition by any assignment, transfer or accumulation of rights of use;* *(d) prohibiting or imposing conditions on transfers of rights of use of spectrum, not subject to national or Union merger control, where such transfers are likely to result in significant harm to competition;* *(e) amending the existing rights in accordance with Directive 2002/20/EC where this is necessary to remedy ex post the distortion of competition by any transfer or accumulation of rights of use of radio frequencies.* *3. Where Member States wish to adopt any measures referred to in paragraph 2 of this Article, they shall act in conformity with the procedures for the imposition or variation of such conditions on the*

	rights of use of spectrum laid down in Directive 2002/20/EC. *4. Member States shall ensure that the authorisation and selection procedures for electronic communications services promote effective competition for the benefit of citizens, consumers and businesses in the Union."*
IT	
LT	
LU	
LV	
MT	Malta notes that, taking into consideration the existing and envisaged local mobile markets for the near future, the amount of radio spectrum available on the market should not exhibit spectrum scarcity for the current and near future demands.
NL	It is noted that due to the strict timelines, it has not yet been possible to fully involve all the relevant stakeholders in providing the answers to this questionnaire. This particularly applies for the municipalities. The Netherlands has a relatively good coverage of broadband fixed and mobile telecommunication infrastructure. This could make some of the recommendations less relevant in the Dutch situation. For instance, further improvements in the transparency of existing physical infrastructure via a Single Information point should only be considered if they provide clear added value to the stakeholders. Unnecessary extra administrative burden for businesses and government should be avoided. Implementation of the connectivity toolbox may require changes in national and local legislation. This will take more time than is anticipated in the planning of this toolbox. Also, we think it could be premature to make such changes pending the upcoming revision of the Broadband Cost Reduction Directive. We would like to make an explicit reservation that our involvement in the toolbox process and any measures agreed upon in the toolbox should not be considered as commitment to include these measures in the upcoming revision of the Broadband Cost Reduction Directive.
PL	Other information on procedures influencing the completion date of a telecommunications investment. <u>Power connection to the base station.</u> As part of the investment, each base station is supplied with power - on the basis of a "sub-meter" or a dedicated power connection supplied by the energy company. In the case of tower stations located at a distance from human clusters, only the latter solution is used, which power utilities have 18 months to implement. Please find attached additional documents which are Polish good practices in the field of investments in fixed networks and related to 5G and EMF networks:

	1. Good Practices in the processes of implementation and operation of telecommunications infrastructure on public roads 2. Good Practices in the processes of implementation and operation of telecommunications infrastructure using pole positions of power lines owned by power companies 3. Investment contract & Coverage contract 4. Guide for practical use of the standard Investment contract 5. Investment contract template with Appendix 1-6 6. A Guide to 5G The electromagnetic field and people. On physics, biology, medicine, standards and 5G net-works.
PT	Authorizing tests to be performed before awarding the spectrum allows operators to be pre-pared in advance thus enabling the deployment phase to be quicker.
RO	
SE	
SI	
SK	
NO	One measurement for ensuring timely and investment-friendly access to 5G radio spectrum is to set and publish an up-to-date national spectrum roadmap. Nkom has a strategic plan for the frequency bands for mobile communications in a Spectrum Roadmap. The roadmap includes information about Nkom's assessments in regards to the upcoming awards and the introduc-tion of 5G. Nkom uses the roadmap in the assessment and management of future spectrum awards, taking into account national requirements and interests, identification and harmoniza-tion of frequency bands internationally, standardization and availability of equipment (ecosys-tem) etc. The roadmap lists all frequency bands identified for mobile communication, their current usage and their anticipated future application. Information regarding these bands, in-cluding the awarding schedule, is made public to provide transparency and increased predict-ability for interested parties. Nkom has received feedback that the roadmap is quite useful for operators. We also believe that predictable and open award processes and procedures and predictable regulatory framework enables operators to make long-term network investment. Nkom's regu-lation on awards/auctions usually consist of an overall framework and detailed auction rules, and both regulations are subject to public consultation. Inputs to our consultations gives us important perspectives and information from different stakeholders. (The overall framework states the overall objectives and the overall framework for the award. This includes regulation on the auction format, reserve prices, coverage obligations and spectrum caps. The detailed auction rules states rules on the conduct of the auction.)