

# **Finland's implementation plan**

Common Union Toolbox for Connectivity

28 April 2020

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## Streamlining permit granting procedures

Sharing of physical infrastructure is required by law (Joint Construction Act, 276/2016). According to the act, a network operator is obliged to allow access to its physical infrastructure by fair and reasonable terms at the written request of another network operator. The obligation to allow access applies equally to the parts of the physical infrastructure useful to the construction of both the fixed network and the mobile network which are held by the network operator.

The Finnish Transport and Communications Agency Traficom has studied the situation of shared use of physical infrastructure in Finland in 2019-2020 and has stated that shared use is still limited. Infrastructure sharing between incumbent telecommunications companies is partly the prevailing practice, but shared use is low for other infrastructure networks. To improve the situation, Traficom established a Physical Infrastructure Expert Group in the summer of 2020. The Expert Group currently includes more than 30 organisations and about 100 experts.

The task of the Expert Group is to seek common practices, define common guidelines and operating principles, and review operating models and processes so that shared use of infrastructure can take place better than before. The aim of the Expert Group is to define common pricing and cost-sharing principles for the physical infrastructure shared use. The Expert Group also reviews best practices and draws up recommendations for the terms and conditions of a infrastructure shared use agreements for the entire life cycle of the infrastructure sharing. The work of the Group is closely linked to several best practices. The work of the Group is divided into 6 work streams and subgroups (Figure 1).

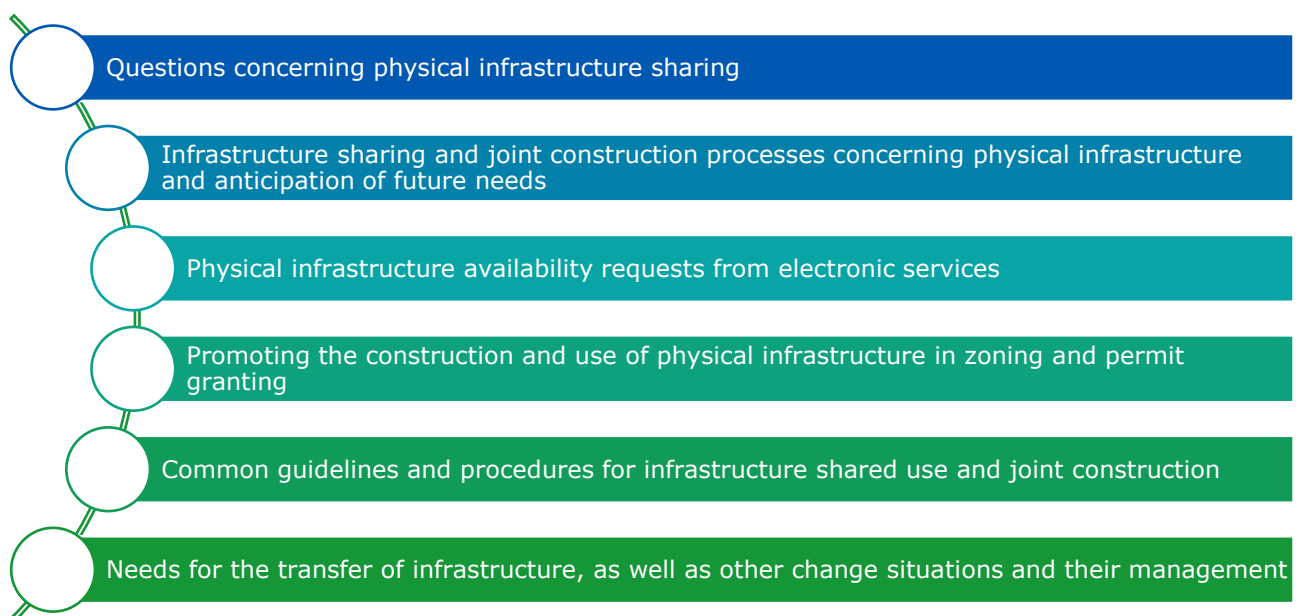


Image 1: Subgroups of the Physical Infrastructure Expert Group

## RECOMMEND 8b

### 1.1 Introduce permit exemptions and fast track procedures and promote the application of existing lighter permit granting procedures

Permit exemptions or mere notification mechanisms can help streamlining procedures for obtaining permission to roll out infrastructure. Therefore, the introduction of new permit exemptions or notification mechanisms should be considered, when relevant legislation is under review, if not earlier. Moreover, permit-granting competent authorities should be encouraged to make use of existing and relevant light permit granting procedures which are available to use by them on a voluntary basis, where appropriate.

The “planning, zoning and permits” subgroup of the Physical Infrastructure Expert Group will discuss the possible development of streamlining permit granting procedures. The potential needs for legislative changes that may arise in the subgroup will be further assessed when relevant legislation is under review.

### 1.2 Provide model regulations on electronic communications network deployment

Provide model provisions (regulations, plans, etc.) with regard to permit granting related to electronic communications network deployment addressed to competent authorities.

For example, Traficom has issued several regulations that specify the location of telecommunications networks in road areas (including a regulation of laying wires and cables in road areas), as well as the provision of communications networks and services, and the synchronisation of communications networks. The regulations and their explanatory memoranda describe in more detail how the communication networks must be technically implemented so that they cause the least possible disturbance to other operations and networks.

The “planning, zoning and permits” subgroup of the Physical Infrastructure Expert Group will discuss the coverage and visibility of the regulations among permit authorities and among permit applicants and constructors. Thereafter, possible follow-up actions shall be planned.

### 1.3 Provide informative materials and workshops for municipalities and other competent authorities

Provide a set of informative materials aimed at municipalities and other competent authorities in charge of permit granting for civil works describing procedures under the relevant legal framework and measures to speed up and ease permit granting procedures. This may include workshops for local/regional authorities regarding the electronic communications legal framework and related permit fast-track procedures.

If the work of the Physical Infrastructure Expert Group identifies the need for special informative materials and/or workshops, the implementation of the materials shall be planned separately. In co-operation with the Association of Finnish Municipalities, it is possible to find out e.g. the utilisation of the Association of Finnish Municipalities' established Kunta-TV -webinars in passing information to municipalities. In addition, the production of other material for the needs of permit authorities shall be investigated. The above measures shall be taken, if necessary.

#### RECOMMEND 8c

##### 1.4 Ensure the use of electronic means for permit applications

Ensure that all permit applications can be submitted by electronic means and that the corresponding decisions (granting/refusing) by the competent authorities are communicated to the electronic communications operators by electronic means.

Electronic services are already widely used in Finland, including by permit authorities. Finland is also undergoing cross-administrative development projects related to the promotion of electronic services, such as a programme for the promotion of digitalisation (<https://vm.fi/en/programme-for-the-promotion-of-digitalisation>). The goal is that in 2023 electronic services will be the primary way of carrying out business in all authorities. The current act on the provision of digital services (306/2019) requires all authorities to provide electronic services.

An ongoing reform of the Land use and building act (More information (in Finnish): <https://mrluudistus.fi>) aims to digitise the permit granting process in all Finnish municipalities. According to a preliminary proposal, all municipalities should accept applications based on the digital information model and all permit applicants should submit their applications in this form. This would simplify the process and speed up the processing of permit applications. A legislative proposal is planned for completion during 2021.

In view of the current situation and the ongoing development projects mentioned above, no other specific measures for this best practice are considered necessary.

#### RECOMMEND 8d

##### 1.5 Digital administrative portal/Single Information Point (SIP) coordination

Establish a digital platform – consisting in a single digital portal or interconnected digital portals – which would enable the electronic submission of permit applications by electronic communications operators to competent authorities in charge of permit granting for the deployment of electronic communications networks. This digital platform could also facilitate the communication to the applicant of the decision issued by the competent authority/ies. The competence regarding the granting of permits remains unchanged (i.e. at central/regional/local level) but the information flow is provided via the digital platform.

Member States may provide - as an additional option - that the Single Information Point (SIP) is interconnected with the digital platform with regard to the information provided by the SIP. The SIP may have a central role in this platform.

There are currently two widely used and functioning electronic permit application systems in Finland, which are available for applying for permits for electronic communications networks.

The electronic Lupapiste.fi service is already widely used in most municipalities in Finland (195 municipalities out of 310). The service can be used by both individuals and organisations to apply for different types of permits from municipalities. It would not be practical to implement a digital platform exclusively for applying for permits for the construction of electronic communications networks, alongside or in place of this service. In addition, the largest cities have their own digital platforms for applying for permits and processing applications.

The Pirkanmaa Centre for Economic Development, Transport and the Environment (ELY) coordinates permit applications for the state road network. The centre has a digital platform for applying for permits and processing applications. The platform is designed to guide the applicant to provide all the information needed to process the application at the time of application. This reduces the need for requests for additional information during the application process and thus speeds up the granting of permits.

At present, it is not practical to combine the above services or develop a completely new digital portal for applying for permits. The matter is being handled in the "planning, zoning and permits" subgroup of the Physical Infrastructure Expert Group. If new development needs emerge in the Group, the cost/benefit ratio shall be assessed separately and possible further measures shall be decided upon.

## RECOMMEND 9

### 1.6 Tacit approval for rights of way

The implementation of tacit approvals for the granting of rights of way via administrative procedures should be considered, when the amendment of relevant legal measures regarding rights of way is under way if not earlier. The best practice consists in considering a rights-of-way request as tacitly approved when there is no response by the competent authority within a certain time period (e.g. 3 months) starting as of the submission of a complete application.

The tacit approval procedure, i.e. the notification procedure, is used in certain permit procedures for telecommunications and electricity networks. The Road Act (Act on the Transport System and Highways 503/2005) provides for a notification procedure and the situations in which it applies. Traficom's regulation "On the laying of wires and cables in the road area" specifies the content of the notification procedure. The notification procedure applies to situations specified in the Road Act when the rights

of way does not require a permit in the situations specified in the act in question. The notification must be accompanied by explanations of the cable owner, network planner, geo-referenced location, location conditions and basic information, deployment method and constructor of the network, person responsible for traffic arrangements, traffic arrangements during the work and the planned start date of the civil works.

The typical processing time for permit decisions reported by the permit authorities is less than the target period of 3-4 months. Applications that take longer to process are typically complex and/or incomplete.

The introduction of a tacit consent procedure can be further assessed in the event of future reforms of the relevant legislation.

### 1.7 Fast track procedures for rights of way

The implementation of fast-track procedures for the granting of rights of way should be considered in some cases, when the amendment of relevant legal measures regarding rights of way is under way if not earlier. The best practice may consist of a tacit approval of the request for rights of way within one month following prior information to the relevant authority.

The implementation of special fast-track procedures can be further assessed in the event of future reforms of the relevant legislation.

### 1.8 Establish broadband coordinators

Establish broadband coordinators in order to support the coordination of granting of rights of way and of different permits. The broadband coordinators would inform the electronic communications operators about the necessary permits and enhance communication and coordination with all the competent authorities involved.

The single information point in Finland is called Verkkotietopiste.fi. Verkkotietopiste.fi service contains basic information on permit procedures. If there is a clear need for general information on permit procedures and its addition in the discussions of the Physical Infrastructure Expert Group, such additional information can be provided to Verkkotietopiste.fi service. Information can also be added to the Laajakaistainfo.fi website maintained by the national Broadband Competence Office (BCO). Finland intends to present, as part of the action plan of the EU Recovery and Resilience Facility, the hiring of a temporary coordinator for the Finnish Broadband Competence Office. The coordinator could also contribute to the compilation and dissemination of information related to permit granting procedures.

Municipal broadband coordinators could streamline permit processes. Since broadband coordinators could impose additional costs, it should be voluntary for municipalities. Municipalities, themselves, should consider the practicality of such an activity.



### 1.9 Use of joint preparatory coordination procedures for granting rights of way and permits necessary for civil works

The authorities/entities involved in the granting of rights of way and civil works permits could make use of joint coordination procedures in order to prepare and enhance the formal permit granting process and the process of granting rights of way with a view to grant both civil works permits and rights of way within the same deadline. Such joint coordination procedures may, if feasible and useful, include on-site meetings of the intended path by the authorities/entities involved in the granting of rights of way and the authorities responsible for the permit granting procedures, where electronic communications operators can also participate.

The coordination of civil works and the related permit granting procedures are facilitated in part by the fact that Verkkotietopiste.fi service also contains network deployment plans. With the help of the service, civil works can be coordinated with other parties planning network deployment projects in the same area. It is possible to receive an automatic message from the service in the event that another party draws up a network deployment plan for the same geographical area. A party may also express their interest in joint construction in Verkkotietopiste.fi.

In many Finnish municipalities, network operators are invited to municipalities' common planning meetings, the purpose of which is to coordinate the construction plans of various operators and the municipality's own infrastructure projects at an early stage. Correspondingly, the Centres of Economic Development, Transport and the Environment (ELY) organise regional coordination meetings, the aim of which is to coordinate construction regionally with regard to the state road network.

The "planning, zoning and permits" subgroup of the Physical Infrastructure Expert Group discusses the development of existing operating models, as well as possible new operating models. Thereafter, possible follow-up actions shall be planned.

## RECOMMEND 10

### 1.10 Legal requirements with regard to the appropriateness of fees

Member States should provide for objectively justified, transparent, non-discriminatory, proportionate and cost based fees with regard to permits for civil works. This could either be done by particular legal provisions with regard to the electronic communications network/VHCN roll-out or it could be provided for in the general/horizontal rules on fees.

Member States should avoid non-transparent, unproportioned or discriminatory usage fees/rent with regard to rights of way on public ground.

In case of high and/or strongly varying fees at local level for civil works permits and rights of way on public ground, Member States should provide guidance with regard to the calculation of fees. In particular, Member States should promote harmonisation of local policy regarding the criteria for setting fees and exchange of best practices to accelerate deployment of VHCN.

The Act on Criteria for Charges Payable to the State (150/1992) defines pricing as cost-based for state permit authorities (Centre for Economic Development, Transport and the Environment ELY).

The “planning, zoning and permits” subgroup of the Physical Infrastructure Expert Group and the “guidelines and procedures” subgroup shall discuss the principles for pricing permits and investment rights. The objective is to gain a more accurate understanding of the extent to which pricing may be a problem or a slowdown in network construction. Only then can more detailed plans be made for the necessary follow-ups.

## **Improving transparency through the single information point (SIP)**

### RECOMMEND 11

#### 1.11 Ensure the availability of information from different sources and enhance transparency of planned civil works

Ensure that all information regarding existing physical infrastructure as well as planned civil works is regularly provided by all relevant (public/private) entities and, to the extent possible, integrated into a single data portal, managed by the SIP, to accelerate the deployment of electronic communications networks at a lower cost.

Finnish legislation (Joint Construction Act 276/2016) already requires all private and public network operators (communications, energy, transport and water management networks) to provide information on both existing infrastructure and future network deployment projects and civil works for Verkkotietopiste.fi service.

Traficom regularly monitors the amount of information in the service and assesses its comprehensiveness.

### RECOMMEND 12

#### 1.12 Ensure the availability of information via the single information point (SIP) in electronic format

Ensure the availability of information via the SIP in electronic format, including information by public sector bodies and the electronic accessibility for stakeholders.

The information in Verkkotietopiste.fi is available in electronic format. Electronic downloading of data in bulk is limited for security reasons. For existing networks, for security reasons, the service does not display information on the exact location of the network, but only information about the operators who have a network in the area in question.

**1.13 Include georeferenced information (maps and digital models) in the data made available via the SIP**

Ensure that the information made available through the SIP includes georeferenced information on existing physical infrastructure and, whenever possible, also on planned civil works.

When such information is not available by the network operators and public sector bodies, the SIP should provide for the necessary tools to transform existing physical infrastructure information into georeferenced format.

Information on both the existing network infrastructure and future construction projects is provided from the current Verkkotietopiste.fi service. The data is georeferenced information. Verkkotietopiste.fi also includes drawing tools that allow network operators transform existing physical infrastructure information into georeferenced format. Drawing tools can also be used to describe planned network deployment projects or civil works in Verkkotietopiste.fi. With regard to the existing network infrastructure, Verkkotietopiste.fi service does not currently provide accurate location information in the form of georeferenced data for security reasons.

The "physical infrastructure availability requests" subgroup of the Physical Infrastructure Expert Group shall discuss how information on the availability of physical infrastructure could be shared. The working group shall investigate whether it would be possible to utilise Verkkotietopiste.fi service to share physical infrastructure availability information. Thereafter, possible follow-up actions shall be planned.

**1.14 Make available indicative information on the occupation level of the infrastructure and/or the existence of dark fibre**

Make available information via the SIP concerning physical infrastructure beyond the minimum specified in the Broadband Cost Reduction Directive, such as reliable and updated (indicative) information on the occupation level ("*state of occupation*") of the physical infrastructure.

In addition, the provision of an indicative information on the existence (or not) of dark fibre in a physical infrastructure via the SIP would allow for an easy assessment by the access seekers that want to deploy their network.

Based on preliminary feedback received by Traficom from telecommunications companies, the mere provision of indicative and potentially unreliable free capacity information to Verkkotietopiste.fi service and/or searching this information from the service would not be significantly beneficial in the planning, as the actual availability must be ensured on a case-by-case basis.

The "physical infrastructure availability requests" subgroup of the Physical Infrastructure Expert Group shall continue the discussion on the possibility of sharing information on free space and spare capacity. Thereafter, possible follow-up actions shall be planned. If, as a result of the discussions, it is stated that there is a need for such

indicative information and such information would be available with sufficient reliability, the development of Verkkotietopiste.fi service shall be considered.

#### RECOMMEND 13

##### 1.15 Ensure the provision via the single information point (SIP) of transparent information regarding the conditions of access to the existing physical infrastructure

Make available via the SIP, information concerning the terms and conditions of access to the existing physical infrastructures as defined by the respective owners or managers.

The information to be included in (or provided via) the SIP could be presented in text format, without prejudice to the establishment/presentation of web links to the internet web pages where those conditions could already be published by the respective entities responsible.

With regard to the conditions for small-area wireless access points, such functionality has already been implemented in Verkkotietopiste.fi service as required by the Act on electronic communication services (917/2014). The inclusion of possible other conditions for access to the physical infrastructure shall be discussed in the "guidelines and procedures" subgroup of the Physical Infrastructure Expert Group. With regard to Verkkotietopiste.fi service, such functionality can be extended to other uses, if the need arises.

## **Expanding the right of access to existing physical infrastructure**

#### RECOMMEND 14

##### 1.16 Ensure access to physical infrastructure controlled by public bodies

Member States are encouraged to ensure that all reasonable requests for access to physical infrastructure owned or controlled by public bodies or entities, which is capable of hosting VHCN elements are met, where legally feasible.

In Finland, legislation requires that all network operators allow access to their physical infrastructure on fair and reasonable terms (Joint Construction Act, 276/2016). This also applies to public sector network operators.

##### 1.17 Entrust a body with a coordinator and/or promoter role

Member States should identify a competent body to advise the relevant public bodies and to ensure the coordination and/or promotion of the processing of access requests to publicly owned or controlled infrastructure.

Ultimately, Traficom, as the dispute resolution body, shall resolve any disputes related to access to physical infrastructure. Similarly, municipal building supervision authorities shall resolve disputes over location rights in their respective areas.

The designation of a separate coordination body for all network access requests related to publicly owned infrastructure is not considered practical at this stage as it would require significant additional resources.

#### 1.18 Development of guidelines for all governance levels

Developing guidelines – including on pricing methodologies, standard agreement model(s), offer(s) based on fair and reasonable terms and conditions and/or other relevant documentation – as options to facilitate access and usage of physical infrastructure (including buildings and street furniture) and property owned or controlled by public bodies for the purpose of hosting network elements.

The “guidelines and procedures” subgroup of the Physical Infrastructure Expert Group shall discuss pricing principles, contractual practices, cost sharing principles and other key factors in the contract relationship concerning infrastructure sharing. Thereafter, possible follow-up actions shall be planned.

### **Dispute resolution mechanism**

#### 1.19 Include an optional prior/parallel conciliation mechanism

A prior/parallel conciliation mechanism with the aim to find a timely mutual agreement under guidance of the dispute settlement body might speed up the process considerably. If such an agreement cannot be reached, a formal binding decision of the dispute settlement body can be issued at the end of the standard dispute resolution procedure, within the deadline set in the Broadband Cost Reduction Directive.

Finnish legislation requires that Traficom, which acts as the dispute resolution body, promotes cooperation between network operators and seeks to resolve disagreements between network operators primarily through conciliation (Joint Construction Act, 276/2016). The conciliation procedure is an established part of Traficom's dispute resolution process. The preconditions for conciliation are always investigated in dispute situations before proceeding to the formal dispute resolution process.

#### 1.20 Ensure transparency, awareness and trust in the dispute resolution mechanism by issuing guidelines

For the purpose of increasing transparency, awareness and trust, Member States should issue guidelines, e.g. on dispute resolution processes, pricing methods and any other conditions, and should publish all relevant decisions, respecting confidential information. It is also important that Member States increase awareness of the dispute resolution mechanism possibly through workshops and a dedicated part of the dispute settlement body's website.

There is currently no clear and aggregated information on the dispute resolution process available on Traficom's website. A separate section on dispute resolution and the related process will be implemented in the yhteisrakentaminen.fi -website Traficom's web pages. The purpose of the website is to describe, among other things, the principles of dispute resolution and the dispute resolution process. This will allow the various parties to better understand the whole process and, if necessary, have recourse to the dispute resolution body (Traficom) to resolve their differences. The aim is for the website to be implemented during 2021.

#### 1.21 Ensure electronic communication and submission for parties

In order to contribute to reaching timely decisions, communication between the parties, including the application procedure, bilateral communication, final decision, etc., should be made by electronic means.

Communication between various parties already takes place electronically and final decisions can also be notified electronically. However, real-time electronic monitoring of the progress of a case is not currently possible.

If development projects are launched at the agency-wide level to promote electronic services, the possibility of including dispute resolution issues as one of the pilot issues can be explored. As the number of these cases has been small, at least so far, launching a separate development project would not be cost-effective.

## Reducing the environmental footprint of networks

### RECOMMEND 16

#### 1.22 Limit the negative environmental footprint of the electronic communications networks

Member States should acknowledge the environmental footprint of electronic communications networks. They shall therefore undertake initiatives with the aim to limit adverse environmental effects and to enhance the sustainability of networks.

In March 2021, the Ministry of Transport and Communications published the Finnish Climate and Environmental Strategy for the ICT sector (<https://julkaisut.valtioneuvosto.fi/handle/10024/162910>). The strategy sets out a wide range of measures related to the industry's climate and environmental impact.

Planning for the implementation of the strategy is currently underway at the Finnish Transport and Communications Agency Traficom for the tasks for which it is responsible. In 2021, Traficom will actively participate in European cooperation on the environment in BEREC, and together with the Ministry of Transport and Communications in the Radio Spectrum Policy Group. In addition, the agency has already tentatively planned to map international indicators related to the environmental impact of the ICT sector and compile a suitable set of indicators for Finland's needs.



## Environmental impact assessment

### RECOMMEND 17

#### 1.23 Assessment of environmental effects

Concerning the applicability of the Directives 2001/42/EC, 2011/92/EU and 92/43/EEC for wireless communication network roll-outs, each Member State assesses whether the conditions set out in the aforementioned Directives are fulfilled according to its national circumstances and legal framework and draws conclusions accordingly.

At the time of granting rights or issuing licences for spectrum use, the prevailing view among Member States is that the conditions for the application of these Directives do not seem to be fulfilled.

Like several other member states, Finland considers that the prerequisites for the application of these directives do not seem to be fulfilled at the time of granting rights for spectrum use.

However, the environmental impact can be taken into account e.g. when the municipal building control authorities issue permits for the construction of base station masts.

## Incentives for investment

### RECOMMEND 20

#### 1.24 Promote adequate reserve prices

Member States are invited to set reserve prices by using a methodology, including benchmarking for the specific band under consideration, financial valuation models and/or other models. When using a benchmarking exercise as input, prices should be adjusted to consider the country specific circumstances, such as population, licence duration and coverage obligations, among others, and, when justified, with the exclusion of exceptional cases (statistical outliers).

Member States should avoid revenue maximization.

When determining the reserve prices of spectrum auctions, the price paid for the corresponding frequencies in other parts of the world, and the realised auction prices of the frequencies previously auctioned in Finland, have been taken into account. When estimating the reserve price of frequencies, the prices of the reference markets have been compared with the auction prices realised in Finland. The comparison of starting prices has also taken into account the population density, mobile device penetration and data usage.

Spectrum auctions in Finland have not had fiscal goals. The aim of the spectrum auctions has been to promote the quality and availability of high-speed wireless

broadband networks in Finland and to enable the roll-out of the latest generations of technology. The prices of mobile communication services in Finland are still at an affordable level, and they have not changed significantly since the spectrum auctions. In Finland, the prices of spectrum auctions are very reasonable - even when compared internationally.

### 1.25 Timely availability of 5G harmonised bands

To the extent possible, Member States are encouraged to make a substantial part of the 5G harmonised bands available for wireless broadband networks as early as possible.

The decision related to moving incumbents from a harmonised band should be made on a case-by-case basis.

In Finland, all 5G pioneer frequency bands (700 MHz, 3.5 GHz and 26 GHz) have already been taken into use for wireless broadband networks:

#### 700 MHz:

- spectrum auction in 2016
- the licence period began on 1 February 2017
- nationwide licences for three telecommunications operators
- frequency range 2 x 10 MHz / telecommunications operator
- Auction outcome EUR 66,330,000

#### 3.5 GHz:

- spectrum auction in 2018
- the licence period began on 1 January 2019.
- nationwide licences for three telecommunications operators
- frequency range 130 MHz / telecommunications operator
- Auction outcome EUR 77,605,000

#### 26 GHz:

- spectrum auction in June 2020
- the licence period began on 1 July 2020
- nationwide licences for three telecommunications operators
- frequency range 800 MHz / telecommunications operator
- Auction outcome EUR 21,000,000



- Part of the frequency band (24.25-25.1 GHz) was left outside the spectrum auction, and allocated to local 5G networks. Granting of usage rights to local networks will begin during the spring of 2021.

Previous users of the 700 MHz, 3.5 GHz and 26 GHz frequency bands switched to other frequencies or were assigned replacement frequencies, if necessary.

## 1.26 Review National Spectrum Plans on a regular basis

Member States are encouraged to carry out a regular review of national spectrum plans (allocation table and/or award strategy plans) with the objective to take the harmonised bands into use as early as possible. This is useful to the industry and provides planning predictability. It also allows operators to adjust their spectrum holdings to the market development and to their individual demand.

In this process, it is advisable to take into account the demand for a certain spectrum and changes that may occur on the national markets.

In Finland, the needs for the use of frequencies are continuously assessed. Harmonised frequency bands have always been taken into use very quickly after, or even before international decisions. All 5G pioneer -bands are already in use.

In Finland, the spectrum usage plan is regulated by a government decree on the use of radio frequencies and the frequency plan (1246/2014) and by radio frequency regulation 4 of the Finnish Transport and Communications Agency. The purpose of both the decree and the regulation is to ensure the availability of radio frequencies and their efficient, appropriate and sufficiently uninterrupted use.

The government decree contains provisions on the number of television, radio and mobile networks, the frequency bands used for these, as well as certain technical issues and restrictions on the use of frequency bands. The regulation of the Finnish Transport and Communications Agency contains provisions on the allocation of radio frequencies, frequency bands and sub-bands for different purposes of use. The regulation also contains the requirements for transmission and receiving frequencies, channel spacing, bandwidth of transmission, duplex separation, transmission powers, and other corresponding radio characteristics. The regulation's frequency allocation table takes into account the Radio Regulations of the International Telecommunication Union (ITU) and also implements, nationally, the European Commission's decisions on the use of radio spectrum and the European table of frequency allocations and applications.

The Radio Spectrum Regulation is assessed and updated at least once a year and stakeholders are consulted through an open consultation process. Active dialogue with stakeholders is even more important, as the frequencies are also used e.g. for local 5G networks by those who are not already familiar with frequency issues. The information in the radio frequency regulation's frequency table is also exported to the European EFIS system (ECO Frequency Information System, <https://efis.cept.org/>), where international stakeholders can also search for information on the use of frequencies in Finland.

The government's frequency decree is evaluated and updated, as necessary, in broad consultation with stakeholders.

### 1.27 Enable payments of award fees in instalments

Especially if the investment in the network deployment is expected to be high, Member States are invited to consider whether providing that operators can opt to pay a considerable amount of the award fees in instalments could help them with their investments; in this case, the amount that is not paid upfront can be spread over e.g. the total duration of the rights or, at least, over a certain period after the usage rights are granted.

Member States may charge an interest rate and/or ask for a bank guarantee.

The prices of spectrum auctions have been very reasonable domestically and when compared internationally.

According to the act (Act on Electronic Communications Services 917/2014), the licence fee, i.e. the auction price, shall be paid in instalments during the licence period. According to the act, however, the first instalment of the licence fee can be collected even before the start of the licence period. The payment schedule is, otherwise, regulated by a government decree. The fee is ordered to be paid by a decision of the Finnish Transport and Communications Agency. Payments in equal instalments avoid the high frontloading costs typical of auctions and support network investments.

For example, fees in the 5G pioneer bands (700 MHz, 3.5 GHz and 26 GHz) are divided into five instalments.

### 1.28 Individual authorisation regime for the 24.25-27.5 GHz frequency band

Member States are encouraged to promote flexible authorisation of the 26 GHz band, with a focus on local licensing and infrastructure sharing.

Authorisation regimes need to take also future use cases into account, be flexible and should enable different network solutions and topologies in order to ensure efficient use of spectrum and the provision of high quality wireless broadband services also for local networks in case there is sufficient demand.

The solutions for local authorisations, including the option of first-come-first-served, depend on the national situation and on the spectrum availability (valid also for other 5G bands, not only 26 GHz).

The frequency band 25.1 - 27.5 GHz was auctioned in June 2020. Nationwide network licences are valid from 1 July 2020 onwards.

The frequency band 24.25-25.1 GHz was excluded from the auction and reserved for the construction of local networks. Granting of usage rights will begin during the spring of 2021. The aim is to ensure that, among others, industrial companies, municipalities and agricultural and forestry entrepreneurs have the opportunity to use

the services provided by the 5G networks in an appropriate way that promotes international competitiveness and innovation.

After the first application round, usage rights for the construction of local mobile networks shall be issued on a "first-come-first-served" basis. If, due to the scarcity of radio frequencies, usage rights can only be granted to some of the applicants who have applied for permits at the same time, they will be granted to those whose activities best contribute to the objectives of the Electronic Communications Services Act. This includes e.g. the promotion of the provision and use of technologically advanced, high-quality, reliable, secure and affordable communication services.

#### 1.29 Combine coverage obligations with financial incentives

Member States are encouraged to consider the combination of financial incentives with coverage obligations. The financial incentive itself, as well as the coverage obligation imposed, can be designed according to the specific needs of the Member State and its market situation.

According to the act (Act on Electronic Communications Services 917/2014), the government may impose conditions on network licenses it issues, among other things on coverage obligations.

For the 5G pioneer -bands, coverage obligations have only been imposed on network licences in the 700 MHz band. The network licences stipulate that the network must be constructed to cover 99 per cent of the population of Finland (excluding the Ahvenanmaa-islands) within three years of the start of the licence period. The coverage obligation shall be implemented in such a way as to ensure reasonable indoor coverage in the coverage area as well. If necessary, the licence holder is obliged to verify the availability of services. The network, in accordance with the licence, must be constructed in such a way that it covers all main roads, secondary roads, regional roads and connecting roads in mainland Finland, as well as the entire railway network owned by the Finnish state or its company. The calculation of the coverage area takes into account the broadband mobile communication networks built by the licence holder for the 2.6 GHz, 1800 MHz and 800 MHz frequency bands.

For the other 5G bands, the network construction will be market based . At the end of 2020 (under ideal conditions), 5G coverage with a download speed of 100 Mbit / s covered 67% of Finnish households. With a download speed of 300 Mbit / s, 5G networks covered 60% of households.

The next time network licences are granted in Finland, it may be considered whether it is appropriate to include financial incentives in potential coverage area obligations.

#### 1.30 Promote the opportunity of infrastructure sharing

Member States are encouraged to consider providing guidelines and to promote the sharing of passive and active infrastructure to facilitate deployment, taking into account the Broadband Cost Reduction Directive and competition law principles.

Sharing of physical infrastructure is required by law (Joint Construction Act, 276/2016). According to the act, a network operator is obliged to allow access to its physical infrastructure by fair and reasonable terms at the written request of another network operator. The obligation to allow access applies equally to the parts of the physical infrastructure useful to the construction of both the fixed network and the mobile network, which are held by the network operator.

The Finnish Transport and Communications Agency Traficom has studied the situation of physical infrastructure sharing in Finland in 2019-2020 and has stated that infrastructure sharing is still limited. Infrastructure sharing between incumbent telecommunications companies is partly the prevailing practice, but shared use is low for other infrastructure networks. To improve the situation, Traficom established a Physical Infrastructure Expert Group in the summer of 2020. The Expert Group currently includes more than 30 organisations and about 100 experts.

The task of the Expert Group is to seek best practices, define common guidelines and operating principles, and review operating models and processes so that infrastructure sharing can take place better than before. The aim of the Expert Group is to define common pricing and cost-sharing principles for the physical infrastructure sharing. The Expert Group also reviews good operating principles and draws up recommendations for the terms and conditions of a infrastructure sharing agreement for the entire life cycle of the shared use of infrastructure. The work of the Group is closely linked to several best practices. The work of the Group is divided into 6 work streams and subgroups (see Figure 1).

Network licenses granted to mobile networks also allow for active infrastructure and frequency sharing up to a certain limit. Most network licenses allow network sharing, but the telecommunications operator's own network must cover at least 35 per cent of the required population coverage. For example, two national telecommunications operators have a common network company, Suomen Yhteisverkko Oy, whose mobile network utilises the frequencies of both telecommunications companies, but the telecommunications companies still offer their own separate services to their customers.

### 1.31 Structure of recurrent spectrum fees to incentivise roll-out

Member States are encouraged to assess whether the recurrent spectrum fee structure could penalise the rollout and densification of the 5G networks and if so to adjust the spectrum fee structure.

Administrative fees charged for frequencies are regulated by a decree of the Ministry of Transport and Communications (Decree of the Ministry of Transport and Communications on Administrative Frequency Fees and other Fees Charged for the Ministry of Transport and Communications' Frequency Management Services 1454/2019). The decree has been issued pursuant to the Act on Criteria for Charges Payable to the State (150/1992).

The fees imposed by the regulation are reviewed annually and aim to be considered equitable and appropriate, taking into account all radio frequency users.

Spectrum fees for mobile communication networks are calculated on the basis of, among other things, the amount of spectrum used and the geographical area of the right of use, but e.g. the number of base stations does not affect the fees. Telecommunications operators may take new base stations into use within the framework of the licences granted to them without having to notify the Finnish Transport and Communications Agency separately each time. However, the agency has the right to obtain this information.

In addition to the annual frequency fees, a market-based frequency fee (the so-called AIP fee, Administrative Incentive Pricing) is charged in accordance with the law (Act on Electronic Communications Services) for certain frequency use rights. The Finnish Transport and Communications Agency collects an annual market-based frequency fee to the state from the holders of network licences that are granted free of charge for telecommunications and television operations, and from 2024 onwards from the Defence Forces. The number of base stations does not affect the fees.

A market-based frequency fee is not charged for auctioned spectrum during the concession period.

### 1.32 Use financial aid as a complement to incentivise investments

Member States are encouraged to use financial aid from EU-level programmes to complement 5G deployments to incentivise substantial investments in the roll-out of 5G networks.

Finnish stakeholders are involved in research, development and innovation (RDI) projects utilising 5G, which receive funding from the EU, such as Horizon2020. The utilisation of EU innovation funding is encouraged.

## **Enhanced coordination at Union level on spectrum assignment for cross-border industrial use**

### RECOMMEND 21

Regarding Section 5, Recommend 21, letter (a) of the Recommendation, Member States have concluded that it is too early to make an assessment on existing vertical use cases that benefit from cross-border coordination of spectrum assignments. A significant number of Member States reported that there have not yet been applications from the industries for vertical use-cases with cross-border dimension. Therefore, Member States agreed not to include a list of such use cases in the Toolbox. The RSPG has expressed the same view in its contribution to phase 2 of the process.

1.33 Use coherent practice for granting rights of use for radio spectrum based on the European Electronic Communications Code

Member States should use a coherent practice for granting rights of use for radio spectrum.

The legal framework for granting rights of use for radio spectrum is given by the European Electronic Communications Code.

Directive (EU) 2018/1972 of the European Parliament and of the Council on the European regulatory framework for electronic communications has been fully implemented into national law by the Act on Electronic Communications Services (1207/2020), which entered into force on 1 January 2021.

The aim is to agree on the use of frequencies with neighbouring countries so that the frequencies can also be used efficiently and expediently in cross-border use.

1.34 Facilitate interoperability through the development and application of standards

When necessary to ensure service continuity across borders, including but not limited to quality of service and network security, Member States should facilitate interoperability through the development and application of standards.

Finland supports the development and application of uniform standards.

1.35 Make use of harmonised technical conditions developed by the European Conference of Postal and Telecommunications Administrations (CEPT)/ Electronic Communications Committee (ECC), if common dedicated frequency ranges are deemed necessary

If a dedicated frequency range is deemed to be necessary, the best way to ensure usage of such a common dedicated frequency range is to use harmonised technical conditions developed by CEPT/ECC. This would furthermore foster connectivity in cross-border use cases amongst EU and non-EU countries, since the latter are members of CEPT/ECC.

As a member of the CEPT / ECC, Finland participates and has a vertical influence in the preparation and decision-making processes related to frequency needs.

The majority of vertical users need national mobile networks or frequency bands specifically allocated to local networks.



- 1.36 When identifying the appropriate authorisation regime Member States should pay particular attention to any specificities resulting from a cross-border dimension

Noting the national responsibility to set authorisation regimes, as well as the conditions attached, it is recommended that Member States, when identifying the appropriate authorisation regime, pay particular attention to any specificities resulting from a cross-border dimension.

The needs of cross-border use could be taken into account in e.g. frequency coordination agreements with neighbouring countries.

Directive (EU) 2018/1972 of the European Parliament and of the Council on the European regulatory framework for electronic communications has been fully implemented into national law by the Act on Electronic Communications Services (1207/2020), which entered into force on 1 January 2021. According to the act, the government may co-operate with a member of the European Union and the European Commission's Radio Spectrum Policy Group when preparing to grant network licences.

## **Aspects related to electromagnetic fields and public health**

- 1.37 Promote continuous scientific research on electromagnetic field (EMF) emissions carried out by credible and independent institutions

The availability and dissemination of up-to date evidence-based scientific information on EMF and its impact on health are required for mitigating social resistance to the deployment of 5G networks. Member States and the European Commission should therefore promote scientific research in the field of EMF, the continuous monitoring of new scientific findings in this regard and the assessment of their relevance by credible and independent institutions.

The Radiation and Nuclear Safety Authority (STUK) monitors the development of research related to the potential health effects of electromagnetic fields (EMF). It also collaborates with Finnish universities carrying out research into EMF health effects.

STUK also participates in the WHO's international EMF project, which shares information on EMF exposures and health effects (<https://www.who.int/peh-emf/project/en/>).

- 1.38 Coordinated and targeted communication for informing and educating on 5G implementation

Member States should use targeted communication including activities using various forms of information sharing ranging from websites and social media to traditional media like TV, radio, leaflets and billboards. The aim is to provide evidence-based information to specific groups and to educate the wider public about 5G thus strengthening public confidence in institutions, which in turn may increase acceptance for the

new 5G technology. Successful communication often involves authorities from several fields of expertise and responsibility as well as other stakeholders cooperating in order to translate scientific and technical information into every-day language and to address cross-sectoral issues.

The Radiation and Nuclear Safety Authority (STUK) has published a website on the radiation safety of 5G, which is updated whenever relevant new information is available. (<https://www.stuk.fi/web/en/topics/mobile-telephones-and-base-stations/base-stations/5g-network-and-radiation-safety>).

The situation in Finland regarding citizens' concerns about the safety of 5G is currently quite calm.

STUK answers citizens' questions about EMF safety. Upon request, it provides information to decision-makers and statements to municipal authorities and provides interviews to the media.

STUK guides mobile network operators on how to install base station antennas so that the exposure limits are not exceeded.

#### 1.39 Inform the public on the compliance of Radio Base Stations installations with applicable EMF safe limits

EMF levels are measured and monitored in line with the practices considered adequate by the respective Member State. Member States are encouraged to publish results attained during these measurements as well as information on the respective measurement and monitoring regimes with the view to further assure the public with regards to health.

The Radiation and Nuclear Safety Authority (STUK) monitors the exposure of citizens to the electromagnetic fields (EMF) of base stations by carrying out measurements. Measurements focus on, among other things, new technologies or certain types of antenna installations. 5G base stations will be measured when a suitable measurement system is available.

The main results of base station measurements are published on STUK's website. STUK also carries out analytical calculations to assess the EMF exposure of citizens.