




Mr. Jordi Bosch i Garcia, Secretary of Telecommunication and Information Society of the Department of Governance and Public Administrations of the Government of Catalonia, with NIF.: 35.112.501-B, with head office in Barcelona (08007), Passeig de Gràcia, 11, escala B, 6è 2ª, submits attached document to the European Commission to contribute to the public consultation on regulated access to Next Generation Networks (NGA).



Jordi Bosch i Garcia  
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Generalitat de Catalunya  
Departament de Governació  
i Administracions Públiques  
**Secretaria de Telecomunicacions  
i Societat de la Informació**

Response of the **Generalitat de Catalunya**  
to the Public Consultation of the  
**European Commission**

on regulated access to Next Generation  
Networks (NGA).



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## 1 Introduction

The document published by the Commission examines the current and forecast situation in the deployment of next generation networks (NGN) in order to produce regulations that afford legal certainty, foster investment and innovation in the sector and are consistent across all member states.

The document is based on current regulations in Markets 4 and 5 and suggests specific extensions for new Fibre to the Home (FTTH) and Fibre to the Node (FTTN) networks. The former refers to running fibre optic cable to each user's network termination point, which is a completely new situation in Catalonia in the residential market. The latter refers to the evolution of xDSL technologies through the reduction of local copper loops by installing intermediate points linked by fibre optic cable to the exchange.

The Comissió del Mercat de les Telecomunicacions (CMT), Spain's National Regulation Authority (NRA), carried out consultations on this issue in 2007, and the Catalan Government made its position clear at that time.

In our view it should not be forgotten that the main goal of regulation was, and must remain, to manage migration from a monopoly market to a competitive market, and the viability of any change will have to be assessed in an environment marked by the following factors:

- a) Unlike other sectors, deregulation of the telecoms sector included both services as well as the infrastructures which enable these services to be supplied.
- b) In terms of services, it would appear that competition goals set for the provision of final services in the access section have been achieved, though this is not so obviously the case with the delivery of wholesale transport services.
- c) The reverse is true in the case of infrastructures. There are alternative networks in the section for transport between large cities and new access networks have only been set up in very restricted areas of the country, essentially the big cities.
- d) Change in demand focuses on data services as a result of the greater demand for IP connectivity and the convergence of services on this protocol, with a significant rise in bandwidth demand in multipoint content exchange services, in contrast to a more traditional make-up of traffic previously centred on voice services and point-to-multipoint data.



- e) Technological change enables techniques and equipment which previously were confined to segments in the distribution and transport network to be built into access networks. It is now possible to roll out FTTH networks at a cost which is lower than that seen as viable by cable operators for their HFC+pairs networks.
- f) The coming together of needs and solutions calls for far-reaching change in the network infrastructures of all operators.

In addition to these factors we would also like to stress something which from our point of view needs to be very much front of mind when revising the regulations: the enormous strategic importance of the decisions which we hope will be taken for the evolution of competitiveness in all economic sectors and in the telecoms sector in particular. In other words, the impact which regulation of the electronic communication sector will have on all other economic sectors must be taken into consideration.

In this respect we agree with the Commission that it is necessary to go beyond the approach taken in the current regulations by taking the steps required to make it possible to modify the European and national regulatory framework based on the following principles:

1. Ensure as a main objective full competition in services, and in cases where this competition is compatible with competition in infrastructures to foster the latter as well. However, it needs to be borne in mind that for this full competition to be possible in a given village, it is essential that the private sector cover the whole of the village. Otherwise we could have black and white area scenarios not only in terms of towns but also within the same village.

Here we agree that competition in infrastructures is the ideal model, but we also need to remember that this model will only take effect in specific areas in the large urban areas. Elsewhere it will be necessary to foster competition in services as the only alternative.

2. Under no circumstances reduce current levels of competition.
3. Foster socio-economically efficient investment in telecommunications infrastructures.
4. Ensure territorial balance and overcome the digital gap.



Achieving these goals will in our view mean adopting new regulations which make provision inter alia for the following considerations:

1. Promoting a market model which makes it possible to fulfil the principles set out above.
2. Recognising and explicitly awarding powers to government, and especially at the regional and local level due to their greater proximity, to undertake the actions required to guarantee competitive access to telecoms services in those areas where the market does not make this possible.
3. Whenever possible steering the architecture of the new networks straight to FTTH and minimising the use of other intermediate technologies.

## **2 The Catalan Government's position on broadband networks**

Enhancing competitiveness necessarily entails, inter alia, extensive use of ICTs in business, government and in the personal sphere. Everyone has been in agreement about this for some time. We need to take advantage of the opportunities brought to us by new technologies for the future of our society because we believe that joining the information society is one of the most important challenges currently facing advanced societies, and Europe must not stand to one side but in fact needs to lead the process.

The deregulation of telecommunications promoted by European institutions left the deployment of networks in the hands of the private sector. After some years following this model, in practice it has been shown that public intervention is necessary. This is nothing new in infrastructures. Governments have always intervened in one way or another (and continue to do so) in the development of road, rail, airport and logistics infrastructures. Telecommunications infrastructures are no different, and indeed what they have in common with the rest above all else is that they are a question of public interest: they are strategic for the economic and social development of an area and serve to structure a territory. However, this also needs to be done by fostering and stimulating and maximising private investment. This is the fundamental balance that needs to be achieved while keeping in mind the final goal, which remains being able to use more advanced electronic communication services in order to enhance the welfare of people and the competitiveness of our companies within a framework of territorial cohesion and competition.



The deregulation model for infrastructures, unlike the one for services which has been relatively successful, needs a far-reaching rethink as it has not achieved its goals which are essentially competition and universal access.

We are convinced that the availability of infrastructures pulls demand for services, as happens in other fields such as roads, ports and airports. Thus a firm commitment needs to be made to deploying infrastructures with an eye to the future in terms of both size and reach.

If we really want to build an advanced and modern society, in which access to the information society can transform the country by enhancing the competitiveness of our companies, the efficiency of our governments and the welfare of our people, the cost of access to broadband and the quality of services need to be on the same level as the leading countries in the world.

Hence the Catalan Government advocates a fast deployment of high capacity networks throughout Europe.

### **3 Fibre optic to the home as the definitive solution**

We share the Commission's view that fibre optic to the home is undoubtedly the ideal solution when it comes to putting in place high valued added services and innovation.

Although obviously the deployment of the new FTTH networks requires major investment, it should also be borne in mind that these new access networks come with lower maintenance costs and a much more powerful service delivery capability as is indicated in the reference document.

At any event, we are aware of the challenge that this entails and so we believe there is a need to map out and agree with the various players involved how we can achieve the goal of FTTH that is as widespread as possible. The engagement of all players will be essential along with clear goals, associated metrics and using the leading countries as the benchmark.

We will also need indicators to help us monitor the impact on our society of the deployment of new generation access networks in order to enhance the models that are implemented.



## 4 Regulatory and legal framework

We fully agree with the Commission that the ideal scenario for efficient deployment and which also guarantees and facilitates private investment in new generation networks will need a regulatory and legal framework which ensures a stable environment.

Regulation must ensure achievement of the goal of access to information society services for all and thus foster territorial and social cohesion.

Hence we believe a review of current legislation is needed to give real guarantees that there are no entry barriers to electronic communications in our society together with regulation of the new situation that is sufficiently wide-ranging and effective to achieve the following:

- Prevent the appearance of agents with a dominant market position, bearing in mind that at present the majority of markets are in this situation and that a priori it is very difficult to predict what impact an initial scenario will have, with SMP situations in new generation access networks.
- View electronic communication infrastructures as a public service instead of as a general interest service (reinforcing the right of occupancy of the public domain) given their strategic importance for driving the knowledge society and consequently for enhancing the welfare of its citizens, the competitiveness of its companies and the efficiency of its government.

In reality what is being sought is to put electronic communication infrastructures on a level footing with other infrastructures also seen as being strategic, such as those for electricity, water, roads, etc., and therefore ensuring the responsibility of governments in the deployment on the ground, something which is directly linked with the obligations of universal service which are discussed below. There is a need to ensure that the new generation networks based on fibre optic infrastructures also reach those population centres which offer little or no return on investment, to ensure that people living in them have access to the new services of the information society.

The goal is to avoid what has been happening so far, with infrastructures not being deployed in areas with low population densities due to a lack of private investment. Even in the case of networks such as the one for mobile phones, which has high service penetration and massive use by the public, there are areas and population centres which are asking for the service and the private sector is not making the necessary investment due to the absence of economic return.



- Define geographical markets below the state level and even below the regional level when it comes to applying regulations and legislation efficiently and precisely. At any event, we believe that the conditions exist whereby some autonomous communities could be a geographical market from the word go. In France town and country planning by areas is driving the deployment of the infrastructures for the new access networks. In fact, we think that the definition of white, grey and black areas should be the basis for the definition of these geographical markets as it is clear that the regulatory or investment activity to be carried out in each area will be substantially different.
- At a more local level, it is necessary to change town planning regulations in order to foster and facilitate the deployment of infrastructures.

It should be compulsory for any public works project, whether carried out by the private or public sector, to include rolling out telecommunications infrastructures (both piping and if necessary radio communication towers). Telecommunications infrastructures need to be recognised as a basic urban development service and town planning should take on board telecommunications network requirements.

In Catalonia, the Catalan Government has put in place a series of Measures to Extend Telecommunications Infrastructures (MEITel). As a result, any public works project run by the Catalan Government is to include the construction of telecommunications infrastructures and the reservation of space for the installation of equipment based on technical instructions agreed between the Ministry responsible for telecommunications, those who carry out the public works and agents in the sector.

- Make it compulsory for operators to share with each other extant and newly created infrastructures, not only in the case of telecommunications but also in all other fields, and set up mechanisms which facilitate access to other resources such as sewerage systems, electricity and gas grids, etc.
- In Spain there are specific regulations for common telecommunications infrastructures (CTI) in buildings (referred to as in-building wiring in the reference document). Here, as we have noted on other occasions, we believe that it would be advisable to modify these regulations to include fibre optic in home wiring and to take advantage of the current general review of the technological and regulatory context to look at how the digital home model can be fitted into the framework of CTI. We also fully agree with the Commission that there is a need to ensure that in-building installations are shared by the various operators without duplication in installations. There is also a need to



examine measures to be taken with buildings that date from before the rollout of CTI regulations.

- Regulate wholesale prices as noted by the Commission to achieve competitive retail prices which put us at the forefront of the most advanced countries.
- Set up and guarantee mechanisms for public intervention where the market will not act by itself, either due to a lack of profitability or delays in the schedule for deployment of the new networks, in order to achieve the goals of territorial cohesion in access to electronic communications services. Here the paper produced by Spain's National Regulation Authority (NRA) on "The role and activities of government in the telecommunications sector" should be evaluated and borne in mind.
- We believe there is a clear need for a body that can drive cooperation between all state, regional and local public agents in order to set up and guarantee the mechanisms that make it possible to facilitate and accelerate the deployment of the infrastructures for these new networks in order to achieve FTTH goals as soon as possible.

## 5 Universal service

Even though everyone agrees that FTTH technologies are the main goal to be aimed for, these infrastructures it will not be massively available in the immediate future. In the meantime, there are still a number of minimum services that must be guaranteed to everyone.

In Spain the current definition of universal service has become somewhat outdated in its two key aspects which are access to fixed telephony and access to the internet at a functional speed, which in practice has been 56 kbps. As a result a new definition of universal service will be required, such as providing access to state-of-the-art electronic communication services for all.

Broadband, as a means of access to a wide array of services and with a dimension that will need to be reviewed with the entry of new generation access networks in terms of new services and the benefits they will bring to the public, becomes a key factor in the new conceptualisation of universal service.

In addition, in an environment of converging and ubiquitous networks, universal service has to be geared towards access to networks and specific services, and these networks will have to be neutral, transparent and non-discriminatory and



guarantee the supply of services by operators under conditions of territorial balance and digital inclusion.

- Fixed telephony: requirements need to be reviewed in order to include IP telephony as a possible solution.
- Internet access: all citizens need to have access to e-government, e-education and e-health under equal conditions in terms of price and quality. Thus broadband needs to be included as a universal service but with a more dynamic vision which includes an annual review of minimum access speeds. This review would have to be carried out based on the infrastructures and technologies available at any given time.
- Mobile telephony: we believe that mobile telephony should be included in universal service requirements at least in population centres. At present it would only be possible with second generation mobile telephony which has an emergency and security component (112) as recognised by European regulations and which could be an excellent complement to the current limitations of VoIP.

## 6 Trunk networks

It should be said that any regulations for access networks would be inadequate without equally sound regulations for the trunk networks (Market 6).

In the case of trunk networks the problem lies not only in the possibility of alternative operators gaining access to them, given that one of the cost structure factors for operators is the cost of the trunk link, which can be made using:

- Own infrastructure (only applicable in metropolitan or high density areas)
- Third party infrastructure, normally services companies (electricity, rail, etc)
- Leased circuits

The current position is not ideal for having competitive broadband, especially in small or medium-sized towns, since:

- The competitive supply of circuits is highly concentrated on just some trunk sections, basically between the large capital cities.
- There is a high, non-territorial cost which in general penalises the remaining towns and especially the further away they are from the large cities.



Turning to FTTH, this technology calls for fibre optic trunk networks to all population centres, which is far from being the case on the ground today. This means that public intervention is required in those areas in which the market has made no deployment. Nonetheless, palliative solutions using radio communication may have to be considered in the transition to FTTH.

The lack of financially viable alternatives whereby operators would extend their trunk networks to all towns is one of the reasons behind the Catalan Government's decision to implement MEITel, as mentioned in point 4 of this document. We believe that regulation has to involve making sure that any public works project, regardless of who is behind it, must include the construction of telecommunications infrastructures.

At any event, we note that the review of the Reference Unbundling Offer (RUO) put forward by the Commission has to be supplemented by a far-reaching review of the Reference Interconnection Offer (RIO).

## **7 Access networks**

At present there is a digital gap between towns which have an access supply from more than one operator in fixed networks and towns which only have one operator or, indeed, none. The deployment of new generation fibre optic networks under the current model would entail an even greater digital gap both between towns (which have or do not have deployment) and inside the towns themselves (between districts with greater and lesser densities).

The growing "always on" concepts in mobility technologies and services also implicitly bring with them the need for more radio communications infrastructure in urban and rural environments.

The position of the Catalan Government is to maximise private investment in access networks to foster efficiency in financial terms and in use.

Further to the discussion above in section 4 about the definition of markets based on areas, we believe that proposals to foster the availability of access infrastructures need to be geared towards specific segments, differentiating between the following as a function of the position of the access networks:

- A) access networks with more than one operator
- B) towns where there is only the incumbent operator
- C) towns where there are no operators



With respect to case A, we believe that the Commission's proposals are perfectly suitable and that the obligation to share infrastructures would be sufficient to guarantee network competition.

As for case B, we feel that if the market has not got there yet then it is unlikely to do so in the future especially when investment in access is much higher. As a result we suggest:

- Separation between the infrastructure and services of the dominant operator in current networks in line with the neutral networks model.
- The intervention of government in the deployment of new access infrastructures where this proves to be necessary and in particular in the deployment of trunk infrastructures which means that it becomes viable for operators to extend their services to the areas which so far they have not been able to reach (Public investment or combinations of Public and Private Partnership).

Type C areas are an even more extreme case. In places where no operator has any telecommunications infrastructures, there is no chance of there being any in the future without a change in paradigm. In these cases, government intervention will have to be total for access and trunk infrastructures.

In all of these cases the following will be required:

- Making it mandatory to deploy reserve pipes in any works carried out by services or telecoms companies. Services companies which deploy telecommunications infrastructures should be subject to the supervision and regulation of NRAs.
- Getting local councils to deploy and/or facilitate infrastructures to be used by services operators.
- Government intervention where the market has been unsuccessful or to speed up the deployment of FTTH, in line with the principle of universal service. It will be necessary to map out public policy mechanisms to incentivise deployment in rural areas where this would not be profitable by incentivising, facilitating or directly investing in network deployments. Obviously in cases in which the government does intervene, the scale and way of doing so will be determined by investment capacity and the strategic priority or commitment afforded to the electronic communications services which can be provided by the new networks.



- If necessary, being able to unbundle the subscriber at the point nearest to their home so that all users can choose the service provided by any operator regardless of the type of access and for any access scenario, whether that be in terms of the final goal (FTTH) or temporary scenarios (VDSL, FTTN+VDSL, FTTB+VDSL). In other words, the infrastructure should never be the entry barrier to service access.
- Putting in place wholesale services that are available to operators who do not deploy fibre optic access networks, modulated so that they are not disincentivised when it comes to stepping up the scale of their investment, given that service differentiation is only successful when infrastructure investment is closest to the end-user.
- Incentivise fibre to the home from the start, even though in some cases that will mean going through FTTN/B, and adopting xDSL solutions only in justified cases, or at any event giving greater incentives to the first option than to the others. Nonetheless, and bearing in mind the limitations and problems of current infrastructures and the diversity of towns around the country, it will be necessary to set short, medium and long-term goals for connectivity to all homes.
- Being clear on the point that WIMAX or 3G HSPA networks, even though they many be seen as temporary access solutions in the case of small towns or areas with poor infrastructure, are not a replacement for fibre optic access but rather supplement it. In other words, it will be necessary to deal with current or future mobility access technologies apart and at any event bear in mind that all of them would have to have back-haul availability based on fibre optic.
- Making it possible to plan and deploy technologies which are supplementary yet key to digital inclusion, such as WIMAX and 3G HSPA, at a more local level. In other words, we suggest assigning the radio spectrum to geographical areas below the state level to enable more effective action that is fully adapted to real needs on the ground.
- Enabling the appearance of infrastructure managers, like the radio communications model or the French model, which can add private and public infrastructure and have the capacity to invest in the deployment of fibre optic access infrastructures.



## **Replacement and maintenance of the current copper network**

We agree with the Commission that, in the case of xDSL technologies, there is a need to schedule coexistence – as short as possible – between the two types of networks (copper and fibre) and to agree progressive migration with all players. This will ensure continuity in the services provided by alternative operators, meet the dominant operator's need for network efficiency and simplicity, and finally achieve the goal of having fibre optic networks reaching homes.

However, we believe that temporary measures need to be kept to a minimum and we should avoid as far as is possible the intermediate solution of installing street cabinets (vDSL). This is because the town planning difficulties they entail and the final goal of FTTH will involve higher outlay and above all greater workload and a postponement of the final goal. Nonetheless, in cases in which the PSM operator does decide to deploy vDSL solutions, we think that the current RUO should be retained and that consequently the alternative operators should be able to offer the service without having to deploy equipment in addition to the street cabinets.

We think that a plan for migration from current copper networks to fibre optic ones should be agreed with all players, led by government and with specific schedules and obligations, just as is being done at present with the introduction of DTT and the resultant analogue blackout.

## **8 Deployment models and the role of government**

In our view there is no single model for implementing access and trunk networks and a number of them will coexist depending on territorial diversity and the market (thus reaffirming the vision of more focalised geographical markets). Yet in the case of both trunk and access networks it will be necessary to:

- Ensure that the trunk networks enable and incentivise the deployment of service operators throughout the territory with no distance or population conditions with respect to the large metropolitan areas.
- Commit to an integrated management model for infrastructures which can bring together public and private initiatives under conditions that make for efficiency in investment and in use and territorial equity.
- Ensure the organic growth of infrastructures with the involvement of all the players concerned and the ability to enhance them.



- Ensure the intervention of government in partnership with the private sector, seeking the best private-public model so that action can be taken where competition has failed without distorting the market.
- Achieve maximum cooperation between different governments by setting up permanent cooperation and decision bodies between them. This will lead to both the alignment of goals and actions between governments and easier dialogue and uniform criteria vis-à-vis operators.

To sum up, in order to combat the current digital gap and forestall the one which in the future will occur with the major change entailed by FTTH, with an improbable competitive deployment of access infrastructures on a large geographical scale, we believe that the most appropriate solution would be the existence of neutral networks with public and private participation if only where at present there is no competition in infrastructures.

## 9 Conclusions

We concur with the Commission about the goals of providing legal certainty and fostering investment and innovation.

We also agree that the current obligations with respect to markets 4 and 5 of the PSM operator should not be done away with due to the evolution towards FTTx networks. In addition we believe that this evolution should be accompanied by a review of market 6.

We agree with the goal of fostering competition in networks between operators, even though we think that this will only be effective in very specific metropolitan areas which have high population densities. However, we also feel that in the bulk of the territory it will be necessary to foster and incentivise competition in services, with government intervention if required.

We also agree with the methodology put forward by the Commission for access to pipes and passive components of the PSM operator's network by alternative operators. Nonetheless, we also feel that only functional separation between the wholesale and commercial arms of the PSM operator will give the outcomes hoped for in this area.

We fully concur with the need to avoid duplication of in-building infrastructures. In Spain this has meant revising the regulations for common telecoms infrastructures.



We think that as is noted in the reference document, FTTN technologies (vDSL in the vast majority of cases) should not be more than a temporary stage which, also in the majority of cases, will only be provided by the PSM operator. The sole advantage of this temporary stage would therefore be the availability of infrastructures to a point near to the subscriber, while the alternative operators will have difficulty in installing equipment in street cabinets for financial or purely town planning reasons. In this respect not only do we believe that there is a need to maintain the PSM obligations in Market 4, but also that they should be expanded so that the PSM operator has to allow alternative operators to offer remote vDSL services and thus get round the need to flood cities with large size cabinets.

Here we also agree with the Commission that FTTN solutions will be meaningful as long as they are only an intermediate step along the route to FTTH. By contrast, should regulations place too much emphasis on fostering FTTN, we run the risk that lengthening the lifetime of copper will constrain achievement of the final goal, as happened when the first ADSLs were introduced.