



Europe

GSMA Europe Response to the BEREC and RSPG Joint Report on:

Facilitating mobile connectivity in “challenge areas”

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About the GSMA

The GSMA represents the interests of mobile operators worldwide, uniting nearly 800 operators with more than 250 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and Internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces industry-leading events such as Mobile World Congress, Mobile World Congress Shanghai, Mobile World Congress Americas and the Mobile 360 Series conferences.

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Introduction

The GSMA welcomes the joint report by BEREC and the RSPG on facilitating mobile connectivity in challenge areas and the opportunity to provide input through this consultation. The GSMA also welcomes the toolbox approach gathered by BEREC and RSPG as it offers a useful set of options to be considered on a case-by-case basis at national level to resolve specific issues.

1. General comments

Today half of the World's population is within the reach of a 4G network and 84% are covered in 3G. In 2017, we saw the number of unique mobile subscribers reach 5 billions, with 3.5 billions of them using mobile networks to access the internet, and the sustained infrastructure investments of mobile operators to upgrade and expand their networks in a key element to achieving these numbers.

Consumers, businesses and key services depend on mobile and fixed line phone services, e-mail and the internet. Efficient management of both the spectrum and broadband infrastructure supporting the effective delivery of these services underpins growth in the European communications market. In particular, mobile communications support the delivery of high speed data to customers on the move, but also customers at home, either directly through a mobile connection or through the use of mobile spectrum as a potential replacement for the last mile of fixed broadband connections.

Mobile coverage is primarily a factor of competition among mobile operators. In a traditionally competitive market, such as mobile services, it is the operators themselves who are most interested in solving the problems of lack of coverage. However, in order to make the investments that guarantee the greatest coverage, the operators responsible for the deployment of networks need time, low regulatory barriers to deployment and a reasonable expectation of positive return on the investments.

The joint report notes that mobile operators face difficulties meeting the increasing demand from businesses and consumers for mobile connectivity in rural and constrained areas such as indoor locations and on rail and road routes. MNOs are working tirelessly to overcome these challenges, and continue to invest in innovative coverage solutions, but challenges still arise from, among other things: inadequate regulations governing access to sites, restrictive planning constraints, intrinsic spectrum properties, prohibitive transmission costs, negotiations with landlords, and restrictive EMF limits. Those issues are in addition to the economic reality that in some areas, it is purely uneconomical to provide coverage.

GSMA believes that there are Public Initiatives, short of granting subsidies or imposing licence obligations, that can reduce barriers to deployment. In that respect, the joint report identifies a set of best practices targeted at enhancing the efficiency of Public intervention in different fields that in one way or another have an impact on deployment costs. We believe that is already a valuable exercise. Obviously, no matter how much the barriers to deployment are reduced, there will always remain areas where the cost of providing coverage is higher than the benefit for the operator. In those cases, state subsidies would be one option to consider, either directly or indirectly through licence obligations. What is important, in our opinion, is that Public initiatives or Regulations aimed at improving coverage do not negatively impact neither the incentives of operators to compete through better coverage, nor the incentives of local Authorities, Landlords and other involved parties to cooperate with operators in order to ensure that end users are able to connect to telecommunications networks even under the most challenging circumstances.

2. Extending coverage to hard-to-reach areas

The joint report overlooks or places insufficient weight on some key barriers to improving/extending coverage in challenging areas. For example, power and transmission costs (i.e. backhaul costs) associated with extending coverage to remote hard to reach areas can often be prohibitively expensive making rollout uneconomic. Antiquated regulations governing access to sites and planning permissions, also make building, repairing or upgrading sites extremely costly and time consuming, delaying rollout of mobile services. Finally, restrictive EMF limits negatively impact on network coverage and site sharing.

An entire industry has grown up around extracting maximum rent for cell sites from MNOs, and that works to secure a very high rent and profit for site providers. Landowner representatives are very aware of the dependence of mobile operators on specific locations, the limitations imposed by planning law, and the very significant investment made in building existing sites. Over time, that industry has managed to establish exceptional rents (relative to other utilities, or other land uses) and very high profitability – and contract terms designed to protect that state of affairs.¹ Recent reforms to the code that govern MNOs' access rights are expected to limit these practices in the longer term but in the short term they will remain a barrier to extending and improving coverage.

Establishing operator's rights to access land at an underlying rent comparable to any other comparable utility, would allow greater investment in mobile infrastructure. There is an extensive body of research that highlights the national benefit from investment in mobile infrastructure, and this benefit would significantly outweigh any loss in surplus profits by the cell site provider industry. For example, in a report published by Deloitte it was estimated that if property costs of mobile networks in the UK were reduced to similar levels to that of other infrastructure providers then over time this could lead to an increase in coverage to around 99% of the country, with significant economic benefits for these in rural communities with limited or no coverage at present.

Further appropriate reform to the regulations that govern access to land would enable increased network competition by making it easier to build out and densify networks as well and facilitate further passive infrastructure sharing (site sharing) both of which will speed up the delivery of coverage improvements. Currently site providers generally prohibit or restrict operators from accessing land or sharing with other infrastructure providers, and demand a very significant further rent for permission, several multiples of the rents faced by water and energy providers – despite there being negligible additional cost to the site provider. Rights to upgrading existing sites without being charged excessive rents will be particularly important in providing rural mobile coverage, because the economic case for the vast majority of rural sites is likely to be marginal or negative.

We believe that more can be done to enable site sharing and network infrastructure competition including reforms that automatically:

- allow for upgrades of equipment that change modestly the visual impact of the site (e.g., adding additional antennas from the new MNO sharing the site, which will slightly increase what's visible on the site but doesn't materially change the visual impact of the site);
- allow operators to rollout new mobile services over existing or new spectrum (unless there is a genuine interference risk – e.g. potentially at airports) at no extra cost. Given the type of spectrum used has no bearing on the alternative use of the land or any other concerns of the

¹ In the UK there are two typical scenarios for MNOs obtaining sites for their mobile masts. One is when the operator manages the site directly and the second is when the mobile operator works indirectly through an intermediary (e.g., where an MNO has a relationship with a third party infrastructure provider who either owns the mast or acts as agent for the mast owner and who has a relationship with the land owner). Both relationships are governed by a code.

land owner or indirect site provider, the type of spectrum used should not be a contractual consideration and;

- that allow for timely access to sites if they break down, and a rapid legal process for resolving disputes when a site provider blocks access to sites to attempt to extort ransom fees in breach of the terms of a contract;
- harmonize the application of the EMF limits to the international ICNIRP and EU Recommendation

With these reforms, the financial incentive to build out and share infrastructure will increase significantly which would drive greater investment in networks. This is particularly important for 5G rollout, which is expected to improve connectivity, where most sites will need to be accessed and upgraded.

3. Rail and Road

Mobile service coverage on transport routes is a key customer pain point for consumers and mobile operators are keen to find a solution. We expect the demands on train coverage and capacity to become a growing challenge over time.

Providing good mobile coverage on trains is inherently difficult because of the underlying nature of trains and wireless technology. Reaching through tunnels, cuttings and very rural locations brings accessibility and investment challenges irrespective of technology or frequencies in use. In places where there is good mobile coverage, due to Faraday cage nature of train compartments, the signal is often unable to penetrate inside the coaches without an on-board equipment such as a repeater.

A future proofed mobile solution requires significant trackside infrastructure investment. MNOs also require access to trackside land and infrastructure on appropriate term. In the case of some European countries, reaching agreement over infrastructure sharing and gaining access to land is made particularly challenging because of the complex nature of the value chain, with several stakeholders involved including MNOs, train operators, and network track operators among others. Greater access to track side assets and Government incentives could help encourage and accelerate its growth.

It is also necessary to acknowledge that the provision of cellular coverage in vehicles and trains is a joint effort that requires coordination with multiple parties. Other stakeholders, beyond mobile operators and end users, benefit from good connectivity and should be engaged in the search for solutions. Above all, owners and managers of rail and road infrastructures, for whom cellular connectivity is a tool to increase the quality of experience of the users and increases the value of their assets, should be involved from the outset.

Current coexistence issues with GSM-R systems hinders the provision of coverage to rail tracks and train station. GSM-R systems use frequencies in the adjacent band to the MFCN 900MHz band. It is necessary to modify the receivers or add filters to ensure that GSM-R radios can operate without issues when close by to MFCN networks. In the meantime, Member states, have implemented a temporary coordination process. This process creates some difficulties in deploying or modifying MFCN base station up to, on average around 700m away from the tracks. It is therefore affecting the ability to provide mobile coverage on trains.

In a few years' time, GSM-R manufacturer will phase out GSM-R networks. CEPT is considering spectrum options to replace GSM-R by an LTE or 5G based systems (CEPT – FM56). CEPT members will need to ensure that this new rail communication system does not affect MFCN networks. The new

rail system must be able to coexist with MFCN networks if using adjacent spectrum. Coordination between the two systems shall not be necessary. This will ensure that mobile operators can provide coverage to rail tracks and those deployment, modifications or evolution of MFCN networks are not impacted by this new rail radio system.

To support the above, at a minimum all new trains should have an obligation to provide an on-board solution that helps to overcome the unique coverage constraints on trains. Operators should be involved to test before the trains are brought in to service. This could offer seamless customer experience and coverage to more rail routes.

4. Indoor coverage

During the last few years, communications operators are making a significant investment effort to upgrade fixed infrastructures, even in rural areas. The availability of good indoor connectivity through a fixed network reduces the costs associated with lack of indoor cellular coverage, and the rationale for public subsidies or obligations in licenses.

A fundamental issue for the industry to deliver basic indoor coverage effectively and efficiently is the emission limits for base stations. A number of EU countries impose much stricter limits than those recommended by the EU and ICNIRP, hampering the ability of operators to provide indoor coverage and roll out efficient networks. This is a critical issue for providing current 4G services and it should be remedied to facilitate, within the margins of health safety, a swift deployment of 5G services.

It is worth noting that even with the universal application of the EU and ICNIRP guidelines, indoor coverage remains a difficult issue. As the report outlines, especially in modern buildings that are more energy efficient. However, the high forecast level of fixed broadband investment and penetration means that there will be an increasing range of simple and viable indoor solutions. Some of these include, VOIP over WiFi and femto-cells among others. Therefore there is no need to specify a particular technology solution or a specific obligation on national macro cellular operators to tackle indoor coverage.