

**BEREC Report on the outcome of the  
consultation on the Draft BEREC-RSPG joint  
report on facilitating mobile connectivity in  
'challenge areas'**

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## Executive Summary

This report summarises the responses received to the consultation on the draft BEREC-RSPG joint report on facilitating mobile connectivity in 'challenge areas'. The draft report compiles initiatives to facilitate terrestrial mobile connectivity in what could be described as 'challenge areas', where mobile connectivity is limited or non-existent. It particularly focuses on regulatory and legal measures that have been adopted to resolve that issue (for example RAN-sharing, passive/active sharing etc.).

The draft report describes four categories of challenge areas: indoor, transportation means, non-profitable areas and other areas (protected areas, "grey" areas, low quality of service areas). For each type of challenge areas, the draft report describes the difficulties encountered in the identified challenge areas and describes different technical, regulatory or legal solutions and practices that have been implemented or considered by EU member states.

BEREC and RSPG sought to gather input from stakeholders. The response to the public consultation will serve as inputs for upgrading the draft BEREC-RSPG report. After approval, the BEREC- RSPG report can be used by policy makers as a knowledge base for methods of enhancing mobile connectivity in challenge areas.

In response to this consultation, BEREC and RSPG received 6 contributions. Stakeholders contributed their views on the described solutions, their benefits and their possible limitations.

In general, stakeholders welcomed the opportunity to comment on the draft BEREC-RSPG joint report on facilitating mobile connectivity in 'challenge areas'. The contributors agreed with the proposal to enhance a constructive approach when several stakeholders are involved in network deployment (railways, roads, white areas, national parks...).The main outcomes from the contributors:

- All respondents agree with BEREC and RSPG's proposal that EU members States address indoor issues through dedicated and local solutions.
- Some stakeholders consider that indoor issues should be considered within a global approach, taking into account both fixed and mobile technical solutions. In this respect, the report seems to be too "mobile-centric".
- According to some respondents, there has been not enough emphasis laid on limitations hindering mobile network deployment: backhaul issues (power transmission costs), limitations on electronic magnetic fields (EMF), urban and other planning restrictions.
- Satellite network as alternative to terrestrial backhaul is not taken into account in the report.

- If there is a common understanding on the need of network sharing, contributors underline that, when operators are practicing network sharing, competent authorities have to pay attention that competition is still allowed.

The Introduction section provides further background to the joint BEREC-RSPG report and introduces the purpose of the document and the need of the consultation.

## Introduction

Many countries face difficulties meeting the increasing demand from users and local authorities for a mobile connectivity available in rural areas and in constrained areas such as indoor locations, subways, tunnels, hot spots, etc.

The joint BEREC-RSPG report aims at compiling some initiatives to facilitate terrestrial mobile connectivity in what could be described as ‘challenge areas’, where mobile connectivity is limited or non-existent.

In the report, the following challenge areas have been identified:

- Indoor;
- In transportation means;
- In non-profitable areas, such as white areas;
- In other areas such as protected areas, “grey” areas, low quality of service areas.

This list of “challenge areas” does not intend to be exhaustive. It reflects some difficulties encountered in Europe regarding mobile connectivity and reported by national regulatory authorities (NRAs) and spectrum managers.

For each identified challenge area, the report focuses on technical solutions implemented or considered by EU member states. It also gathers regulatory or any legal measures that have been adopted in this regard. Forward-looking solutions are also studied, in the light of what is taking place in different markets.

The Report can be used by policy makers as a knowledge base for methods of enhancing mobile connectivity in challenge areas.

Finally, at the end of the joint BEREC-RSPG report, examples of limitation or drawbacks to some described solutions are discussed, but the report does not describe the limitations of each solution. Policy-makers and NRAs will need to consider any limitations when proposing these as solutions to connectivity problems.

The purpose of the public consultation is to increase transparency on the on-going work of BEREC and RSPG regarding sharing practices of methods of enhancing mobile connectivity in challenge areas and to provide BEREC and RSPG with valuable feedback from stakeholders. In particular, stakeholders were invited to comment on the described solutions, their benefits and their possible limitations identified in the draft joint BEREC-RSPG report.

To this end, BEREC and RSPG launched a consultation on their draft joint BEREC-RSPG report on 31 October, running until 28 November, in which they sought input from stakeholders, particularly, on the described solutions, their benefits and their possible limitations. In response to the consultation, BEREC and RSPG received 6 contributions:

1. ECTA, the European Competitive Telecommunications Association;
2. ESOA (EMEA Satellite Operators Association);
3. ETNO (The European Telecommunications Networks Operators’ Association);

4. Fastweb (fixed broadband alternative operator and MVNO in Italy);
5. GSMA (GSM Association) and European Telecommunications Network Operators' Association (ETNO), and
6. Telefónica.

BEREC and RSPG also received some comments via the BEREC online public consultation platform <https://consultations.berec.europa.eu/en/berec> from SES (a satellite operator) and the user "Anwat". Stakeholders' observations, comments and recommendations have been included accordingly by each contributor. The non-confidential responses will also be published on BEREC's website.

# Stakeholders' observations, comments and recommendations

## 1. ECTA

**ECTA** suggested the draft report should be completed or amended considering:

1. Purpose and orientation of the report;
2. Scope of enquiry;
3. Analytical approach;
4. Presentational aspects.

**ECTA** would urge BEREC and the RSPG to either remove reference to assessment of the initiatives presented or to clarify what type of assessment the draft report is intended to pursue and how this is to be achieved.

**ECTA** suggests that the functional objective of improving mobile coverage be explicitly placed in the context of the objectives of the regulatory framework. In particular, it should become clear how the improvement of mobile connectivity relates to the promotion of competition and user choice, and how promotion of these two dimensions is interrelated with the achievement of an Internal Market for mobile electronic communications services.

In **ECTA's** view the draft report focuses on possible means to facilitate mobile connectivity in challenge areas. `Challenge areas' are enumerated in a list at the outset of the draft report (at p. 2). It remains unclear how these areas have been identified, and notably whether BEREC and the RSPG consider this list as exhaustive, or whether a selection has been undertaken, and if so, what considerations this selection would have been based on. This means that the scope of enquiry has been delimited, but the grounds for doing so remain insufficiently clear.

**ECTA** observes here that the notion of `challenge area' lacks analysis in terms of its competitive aspects. Particularly important in this respect is the lack of clarification regarding the relationship between challenge areas and white areas.

The issue of non-exhaustive analysis of the limitations characterising different initiatives is briefly dealt with in the closing paragraph of this subsection. **ECTA** considers:

- 1) the draft report appears limited in the country sample from which initiatives have been chosen for inclusion in the report;
- 2) the text leaves open the question whether legal and regulatory measures are examined only with regard to the specific technical solutions adopted (and to what extent), or cover also more general flanking measures;
- 3) by focusing on initiatives already implemented, the draft report excludes reference to recent and evolving technical solutions that have not yet seen deployment or are about to be introduced in the market;
- 4) the principle of technology neutrality and a pro-competitive orientation for the envisaged knowledge base requires no unnecessary limitation in the portrayal of

possible solutions, but also, more generally, in the portrayal of mobile connectivity *per se*;

- 5) the report does not include reference to the role of mobile backhaul availability, which should however be included in order to ensure that this critical aspect;
- 6) ECTA regrets the limitations to the solutions included in the draft report are not systematically dealt with.

**ECTA** notes that the draft report that includes specifically identifiable logos of individual companies and their brands. **ECTA** considers that these graphical elements should be removed from the final version of the report.

**ECTA** recommends that systematic comparative assessment should be left to future enquiry, while introducing basic indications for all solutions identified in comparative form in an annex to the final report to reinforce its knowledge base character and facilitate use thereof, notably by policy-makers.

## 2. ESOA, SES and the user “Anwat”

**ESOA** underlines the performance of satellite network as a good alternative to terrestrial network and “is surprised that no reference whatsoever is made on how satellite contributes to connectivity and how 5G will also rely on satellite communications”.

**ESOA** maintains that the principle of technology neutrality as a means of enabling competition between platforms must be fully embraced to ensure that future communication solutions are cost effective, affordable, available to all, flexible and fit for purpose.

**ESOA** encourages policy makers and regulators to ensure that the most cost efficient approach to connectivity in rural areas and white (underserved or unserved) areas is realised to support ubiquitous internet access.

**ESOA** points that aero and maritime, which are not mentioned in the report, are also “challenge area,” and satellite broadband provides connectivity solutions that optimise passengers’ quality of experience. This is also underlined by the Satellite Operator **SES**.

The user “**Anwat**” writes that satellite links may offer connectivity solutions for coverage of areas which are not profitable by terrestrial means.

## 3. ETNO

According to **ETNO**, the current obstacles for improving mobile connectivity in challenge areas include inter alia:

- 1) Overly strict Electromagnetic Field (EMF) emission norms that are not based on scientific evidence;
- 2) Non-proportionate environmental regulation;
- 3) Difficult access to key (public) infrastructure (tunnel, along the railways, streets, roads and traffic lights) at reasonable conditions;



- 4) Technical interferences issues (e.g. with GSM-R);
- 5) Deploying dedicated indoor solutions in public buildings.

**ETNO** thinks that in most cases, no other measures are taken to facilitate the network roll-out for example appropriate revisions of existing local or national legislation concerning the above mentioned obstacles (tax, EMF emission limits, local planning, environmental regulation, etc.).

In cases where coverage obligations are imposed on mobile operators, this may cause inefficiencies and waste of resources if these obligations do not adequately reflect real market needs.

To enable indoor solutions, **ETNO** considers that new public buildings such as government services, large commercial shopping malls or large residential private areas should be prepared to deploy dedicated indoor solutions including DAS, Wi-Fi, repeaters and small cells/micro stations.

In **ETNO's** view the key (public) infrastructure (tunnel, along the railways, streets, roads and traffic lights) should be encouraged to provide an improved access, at favourable conditions, to operators that want to deploy mobile infrastructure to reinforce the coverage. With regards to protected areas, such as national parks, they should also benefit from environmental funds.

**ETNO** is concerned that any definition of "good coverage" should not be linked with thresholds and indicators per technology or band. Any coverage obligations or coverage related indicators should be technology and frequency band neutral i.e. all the mobile bands and technologies should be considered to meet the coverage obligations.

**ETNO** considers that it should be made clear that the European Digital Agenda broadband objective to ensure that by 2020 all Europeans should have access to Internet speeds of above 30 Mbps and at least 50% or more of European households subscribe to internet access above 100 Mbps, should be met through a mix of technologies and not only mobile.

## 4. Fastweb

**Fastweb** strongly agrees with the report insofar it states that indoor coverage can be addressed by deploying dedicated indoor solutions, and in first instance integrating broadband WIFI coverage offered from fixed broadband networks.

**Fastweb** judges that more transparent and accessible information of indoor coverage should be promoted, so as to inform final users of possible issues on QoS, but at the same time enabling them to pursue the most effective solution to tackle specific (local) lack of service, taking also into account that such a measure results in an excellent way to enhance competition between operators and among different technological solutions, and more freedom of choice for the final users among different solutions.

**Fastweb** adds that transparency enhancing measures should be extended to the wholesale context in which MVNOs should be allowed to explicitly inform their customers about the causes of lack of coverage or of poor QoS.

In **Fastweb's** view the issue of coverage in challenge areas brings to the light that boundaries between different types of networks in terms of services are blurring rapidly, and that all new technological solutions especially 5G, are moving towards convergent models

**Fastweb** wants that transparency enhancing measures should be extended to the wholesale context in which MVNOs should be allowed to explicitly inform their customers about the causes of lack of coverage or of poor QoS.

**Fastweb** believes that assignment and refarming of spectrum aimed at encouraging the quick rollout of 5G networks, should allow a maximum level of inclusiveness and allow the possibility for non-traditional MNO to enter the market benefiting from measures such as 5G spectrum reserves for new entrants, auctioning of small and affordable spectrum blocks and, in particular, explicit network sharing obligations and use-it-or-lose-it clauses included in licenses

## 5. GSMA

Although Public initiatives can promote network deployment in challenged areas, **GSMA** alerts the BEREC on a risk of “counter performance”: “Public initiatives or Regulations aimed at improving coverage” should 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”.

**GSMA** (like ETNO) thinks that the report doesn't insist enough on “some key barriers”: 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.

**GSMA** considers that 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.

As regards rail and roads, **GSMA** agrees on the fact that all stakeholders (“owners and managers of infrastructures included) “should be involved from the outset”.

**GSMA** points out that current coexistence issues with GSM-R systems hinders the provision of coverage to rail tracks and train station.

**GSMA** points out that a fundamental issue for the industry to deliver basic indoor coverage effectively and efficiently is the emission limits for base stations. **GSMA** states that a number

of EU countries impose much stricter limits than those recommended by the EU and ICNIRP.

**GSMA** considers that there is no need to specify a particular technology solution or a specific obligation on national macro cellular operators to tackle indoor coverage.

## 6. Telefónica

According to **Telefónica**, NRAs should avoid any measure that could damage or discourage competition and there is a clear need to leave an adequate capacity for decision and interpretation to the local NRAs considering the different coverage situation amongst the different countries in Europe.

**Telefónica** considers that regulators should refrain from imposing indoor coverage obligations where there are commitments to deploy fibre, especially where there is already a public subsidy for the deployment of the fixed infrastructure.

Rather than impose obligations on indoor coverage, NRAs and other competent authorities should consider existing connectivity and promote synergies between mobile and fixed networks. If they want to foster indoor coverage, authorities should ensure an alignment between local authorities' requirements (urban restrictions for example) and operators' national obligations (operators have to densify their networks in urban areas to bring indoor coverage).

Furthermore, **Telefónica** underlines repeaters have a negative impact on neighbouring users as they introduce interferences and constrain the network design. End user initiatives are welcome but should always be coordinated with the MNO.

**Telefónica** thinks that non-profitable areas, by definition, require a public subsidy. Deployment should be facilitated by competent authorities at a regional and local level; network sharing should be promoted in these areas.

**Telefónica** agrees with the statement pointed out in the report regarding bringing mobile connectivity on railway and roads: coordination is needed between all stakeholders (administration, operators, owners and managers of infrastructures...). Besides, the operator insists on the fact that before placing spectrum licence obligations on rail and road network coverage, policymakers should ensure that utility access to roadside or line side assets is also secured.

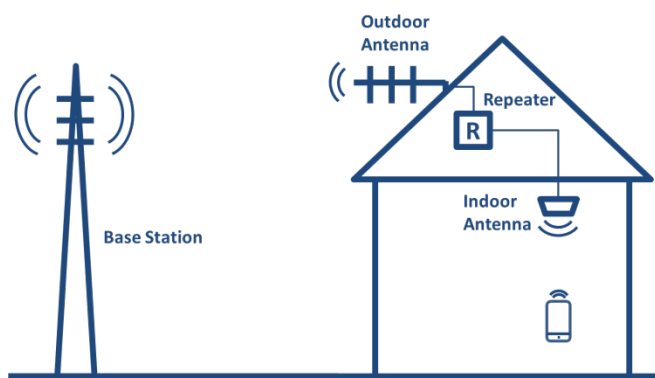
## Upgrades of the draft BEREC - RSPG report following the consultation

BEREC and RSPG thank the contributors to the public consultation and modified the draft report by paying a close attention to their remarks.

In the introduction of the draft report, the followings elements have been changed:

- Following ECTA remark, the paragraph “..., but the technical and policy solutions to coverage challenges are fast-evolving and their implementation raises issues within both BEREC and RSPG competencies.” has been changed into “The technical and policy solutions to coverage challenges have continued to evolve and their implementation raises issues within both BEREC and RSPG competencies.”
- Following ECTA’s comment, the paragraph “This joint BEREC-RSPG report aims at compiling a comprehensive and comparative assessment of initiatives” has been changed into “This joint BEREC-RSPG report aims at compiling some initiatives”.
- The word “terrestrial” has been added in order to explain the limit of the scope following comments from the satellite sector.
- Following comments from ECTA, non-profitable areas has been detailed with “such as white areas” and a paragraph has been added in order to explain the process of selection of the challenge areas: “This list of “challenge areas” does not intend to be exhaustive. It reflects some difficulties encountered in Europe regarding mobile connectivity and reported by national regulatory authorities (NRAs) to BEREC.”

In section 1.3.2, in response to ECTA’s comment, a new figure 4 illustrating the repeaters has been included in order to avoid the use of operator’s logos.



In section 3.1, following comments from the satellite sector, a reference to possible satellite backhaul has been added to acknowledge the role of satellite without changing the scope of the report.

In the conclusion, in response to comments from the satellite sector, the focus of the report on terrestrial communication is clarified.

No further changes were deemed necessary in response to the comments received.