

**BEREC Report on the outcome of the public  
consultation on the draft BEREC Feasibility  
study on development of coverage information  
for 5G deployments**

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## Introduction

This report summarises the responses received to the public consultation on the BEREC’s draft Feasibility study on development of coverage information for 5G deployments (hereinafter- draft Feasibility Study). The public consultation was organised from 10 October until 28 November 2019.

In response to the consultation on the draft Feasibility Study, BEREC received five contributions from the following stakeholders:

1. Cisco,
2. EBU,
3. GSMA/ETNO,
4. TDF,
5. Telefonica.

BEREC is grateful to receive the submissions and has carefully considered them, and sets out its summary of assessments and responses in this report. The non-confidential responses are published on BEREC’s website and should be consulted for the definitive version of respondents’ submissions.

## 1. Aims of BEREC's draft Feasibility Study and structure of this summary report

BEREC conducted an initial feasibility study on development of coverage information for 5G deployments whose aims were to:

1. Describe the expected benefits from NRAs' presentation of coverage information and QoS aspects for use by verticals implementing use cases such as automotive, industrial, environmental monitoring, etc.;
2. Attempt to describe the metrics that are of relevance to the verticals.

The structure of this summary report on the consultation mirrors the chapters in BEREC's draft Feasibility Study BoR(19) 191 as follows:

1. Chapter 1 sets out some general comments and observations received;
2. Chapter 2 sets out comments on the introduction and aims of BEREC's study;
3. Chapter 3 sets out comments on the benefits of NRA provisioned information for verticals;
4. Chapter 4 sets out comments on the BEREC's call for further information.

## 2. General comments

All respondents welcomed the opportunity to provide comments on BEREC's draft Feasibility Study – BoR (19) 191. In addition, there was some support for the overall initiative to have an open dialogue with verticals and business users with connectivity requirements.

**Telefónica** and **GSMA/ETNO** acknowledged that information requirements for 5G are in a very early stage of development since 5G is still being emerged and deployed. Generally, **GSMA/ETNO** note that the telecommunications industry already has an open dialogue with verticals and will continue to work with verticals as 5G deployment evolves.

In the view of **GSMA/ETNO**, the publication and making available of information on coverage with regard to 5G depend on interactions between operators, developers of 5G applications for verticals and end users. Furthermore, **GSMA/ETNO** consider that its members have an incentive and willingness to provide accurate service and coverage information to verticals due to the incentive of winning customers and building positive 5G business cases. Also **GSMA/ETNO** members fall under a variety of detailed transparency obligations for the sake of protecting to consumers.

**GSMA/ETNO** consider that the consultation places significant emphasis on the 'self-build' by verticals to support their own connectivity requirements. **GSMA/ETNO** notes that spectrum should not involve a set-aside by national regulators (i.e. set aside exclusively for verticals in core mobile bands), as this risks spectrum being underused and can undermine fair spectrum awards. Additionally **GSMA/ETNO** note that the identified 'benefits' of self-build as

set out in the consultation (e.g. secured networks, guaranteed QoS) do not depend on the ability to self-build or having access to their own licensed spectrum.

In contrast to the above viewpoint, **EBU** sets out that some uses cases may require dedicated connectivity solutions as opposed to, or in combination with, using public networks. Such dedicated solutions could be either owned by the vertical business user or commissioned from the third party.

**TDF** sets out that the BEREC should consider verticals information needs depending not only on the sector, but also on whether the activity is local or national. **TDF** acknowledged that there is a need for significant collaboration between actors with transparency on all the technical and operational elements contributing to the solution.

**Telefónica** considers that making available information on coverage and QoS is one of many commercial and marketing activities that operators would need to undertake.

**BEREC's response:**

Having considered all the information before it, BEREC is of the view that the information requirements for 5G use cases for verticals are at a very early stage of development, which is in line with the views of Telefonica and GSMA/ETNO.

BEREC notes the point of GSMA/ETNO that its members may already hold incentives to provide accurate service and coverage information in order to compete and win customers and build positive use cases. Nevertheless, one of the general objectives of the European Electronic Communications Code requires competent authorities as well as BEREC, the Commission and Member States to pursue, amongst other objectives, (a) [the objective to...] "promote connectivity and access to, and take-up of, very high capacity networks including fixed, mobile and wireless networks by all citizens and businesses of the Union". This feasibility study was conducted with this objective in mind.

In relation to the point from GSMA/ETNO on spectrum awards involving verticals, BEREC points out that each award is considered on its own merit in the circumstances of the particular market. The point is not relevant to this study, and has been considered and indeed rejected by competent authorities in some awards in particular markets held to date.

BEREC has also considered the point from GSMA/ETNO that the reported benefits of 'self-build' do not depend on the ability of self-build or having access to own spectrum, and would note that some stakeholders, for example EBU, have the opposite view and in particular that, for security and other reasons, verticals may prefer the self-build option. In any case, BEREC is not expressing a preference between the self-build and outsource options. In addition, spectrum managers are obliged to award rights having regard to the efficient use of spectrum, amongst others. Therefore, it will be for the market to determine whether to self-build or outsource in order to achieve their connectivity needs.

In relation to TDF's point about the difference in requirements between national and local use cases and about the need for significant collaboration between parties, BEREC finds the points reasonable. At this time, however, it seems too early to have a view on the implications of national versus local connectivity requirements and so BEREC intends to continue following closely relevant 5G deployments in the markets.

In the main, BEREC agrees with the respondents that making available information on coverage and QoS is one of the activities that operators may undertake themselves but that there may be a coordinated role for BEREC in the future. For its part, BEREC continues to meeting the objectives in the Code including promoting connectivity.

### 3. Comments on the scope and approach

**GSMA/ETNO** note that network operators and verticals work together on the basis of commercial agreements and therefore there is no need to create a regulated form of information provision on 5G networks. In **GSMA/ETNO's view**, this form will potentially introduce a bias in the relations between these actors.

In regard of publication of network coverage and QoS information **GSMA/ETNO** indicated a number of feasibility challenges like:

1. Significant effort requirements on generating reports concerning network QoS for enterprise requirements;
2. Uncertainty on the metrics (what and how to be measured);
3. High risk of obsolete information (due to constant change and evolution);
4. Disclosure of sensitive network information (also pointed out by **Telefónica**).

**Telefónica** considers that public information of very capillary 5G coverage maps at this early stage of 5G deployment could reveal sensitive information about the commercial offering of MNOs, cell site locations and even customer identities, in cases where 5G is being deployed in high-band spectrum for specific enterprise customers.

**CISCO** sets out a few key considerations that should be taken into account when seeking to understand verticals' connectivity needs, namely:

1. Separating indoor versus outdoor use cases when considering coverage; and
2. Ensuring availability of locally licensed spectrum.

In **CISCO's** view outdoor is a very different category with regard to appropriate license area, typically handled by telecom operators under licence conditions. Contrary, the indoor case often requires that base stations or small cells are physically positioned indoors in order to provide adequate coverage and/or capacity, especially for commercial buildings with high penetration losses. **CISCO** considers that local spectrum licenses with appropriately low power flux density rules at the site will ensure better RF isolation.

#### **BEREC's response:**

BEREC has considered GSMA/ETNO's view on the risk that a regulated form of information provision could introduce a bias between relevant actors in the sector and finds no reason to believe that such a risk is associated with the feasibility study. There is no evidence that maps currently providing coverage information to end users would lead to anti-competitive or

biased outcomes in markets. In addition, many Member States have national broadband plan maps and these maps do not generate a bias in the markets. BEREC is cognisant of the potential resource requirements to provide coverage information and would note that the purpose of the feasibility study was to commence an initial enquiry to gauge the level of benefits and obtain views on metrics. The overall conclusion is that it is too early to set out definitive views on the merits of continuing identifying relevant metrics at this time.

BEREC is grateful for the insight on the feasibility challenges provided by GSMA/ETNO and finds them to be reasonable. For example, BEREC's own NRA survey highlighted some similar challenges. As a result BEREC considers that careful consideration of all the barriers as well as drivers may need to be conducted in the future in order to better understand the benefits of such a project.

BEREC notes Telefonica's point about the risk that maps might reveal commercially sensitive information and notes that one conclusion of the study is that it is too early to identify metrics (so it is not clear what metrics might be commercially sensitive or not, at this stage).

BEREC welcomes CISCO's views on the local access to spectrum and on indoor versus outdoor coverage. If BEREC were to take definite steps to progress the project presently, more work would be required to understand how these aspects might relate to the feasibility study. One point to note with these aspects is whether there would be a suitable common approach for BEREC members when addressing relevant coverage information.

#### **4. Comments on the views on the benefits of NRA provisioned information for verticals**

**GSMA/ETNO** commented that MNOs and business customers across a variety of verticals already include QoS parameters and other related performance requirements as part of their contractual arrangements. **GSMA/ETNO** consider if the coverage information of 5G were to be provided, it would be necessary to differentiate between frequencies as user equipment will not cover all areas.

**Telefónica** noted that the publication and making available of information on coverage have to be driven mainly by the collaboration between operators, developers of 5G applications for verticals and end users.

**TDF** suggests providing much more qualitative information to verticals industries:

1. Details about available frequencies could be a selection criterion for verticals;
2. Information on available throughput over a geographical area;
3. Information on the network architecture (to understand the security and resilience mechanisms in place to meet critical needs and elements can concern the level of network redundancy, latency, etc.).

**EBU** sets out that information on coverage and QoS of 5G networks that may be provided by NRAs could assist EBU Members in their connectivity decisions and negotiations with connectivity providers.

#### **BEREC's response**

BEREC acknowledges GSMA/ETNOs point that QoS metrics may form part of the contract between parties, and that this may make it more difficult to identify what metrics (if any) could be made available in open and transparent format. In general, improving the collective understanding of the metrics of different vertical use cases would be something which could benefit all stakeholders.

BEREC has considered TDFs point about providing more qualitative information to verticals and generally would support the publication of available spectrum information, including unused spectrum and/or roadmaps about when industry could expect access to licensed spectrum bands.

BEREC supports EBU's views on the benefit that information about the availability of various connectivity solutions could have for EBU Members. This benefit is highlighted in the summary of the feasibility study.

## **5. Comments on BEREC's call for further information**

In Chapter 3 of the draft Feasibility Study, BEREC was asking whether it is necessary that in order to make qualified decisions regarding the electronic communications networks and services suited best for their current and future business, verticals need information on coverage of 5G.

**GSMA/ETNO** note that the Directive (EU) 2018/1972<sup>1</sup> determines the type of surveys BEREC should conduct in order to collect necessary information (without having business secrets) on broadband networks (including very high capacity networks). Verticals potentially can use this information in order to build their business perspective. In **GSMA/ETNO's view**, this is sufficient and relevant authorities should leave bilateral discussions to the stakeholders and must not take the risk of introducing bias in these negotiations.

Under vertical of audiovisual media, **EBU** provided information on several use cases (three use cases are pertinent to content production and two to content distribution):

1. News gathering;
2. Live coverage of a large event;
3. Studio-based production;
4. Audio-visual distribution to large audiences on personal devices and vehicles (cars, trains);

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<sup>1</sup> Directive (EU) 2018/1972 of the European Parliament and of the Council of 11th December 2018 establishing the European Electronic Communications Code

5. Audio-only distribution to large audiences on personal devices and vehicles (cars, trains).

**EBU** admitted that indicated use cases are all relevant for the **EBU** Members and other audio-visual content and service providers, and yet, they are vastly different from each other in terms of service requirements as well as the required level of detail and accuracy of information. **EBU** noted that some use cases might require dedicated connectivity solutions, as opposed to or in combination with using public networks. Such dedicated solutions could be either owned by the vertical business user, i.e. audiovisual media service provider, or commissioned from the third party. In either case dedicated connectivity solutions would require access to the radio spectrum.

In **Telefónica's** view, BEREC should be cautious when aiming at extending harmonisation to the EU level, and avoid duplicated requests or unnecessary modifications to existing processes (information gathering and reporting processes).

**BEREC Response:**

BEREC observes GSMA/ETNO's views on the types of surveys BEREC is obliged to undertake pursuant to the Code, and refers to the overall aims of the project and the summary of the feasibility study (BoR (20) 33). Overall, BEREC welcomes the early engagement with stakeholders and the views they have provided in this project by responding to BEREC's surveys and call for inputs, which have helped to shape BEREC's conclusions.

BEREC is grateful for EBU's views on the five use cases it provided. The draft metrics set out by EBU demonstrate how varied the potential metrics are for some familiar and well defined use cases, which confirms BEREC's overall view that it would not be possible to gather applicable/definitive metrics for use cases at this time.

In conclusion, BEREC would refer interested parties to the summary, conclusions and recommendations document set out alongside this report in document BoR (20) 33.