

# BEREC Work Programme 2022

***BEREC aims at fostering the independent, consistent and high-quality regulation of digital markets for the benefit of Europe and its citizens.***

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## I. INTRODUCTION

The Body of European Regulators for Electronic Communications (BEREC) aims to foster and promote the independent, consistent and high-quality regulation of digital markets for the benefit of Europe and its citizens. BEREC was established by Regulation (EU) 2018/1971 of the European Parliament and of the Council of 11 December 2018, amending Regulation (EU) 2015/2120 and repealing Regulation (EC) No 1211 (the 'BEREC Regulation')

The BEREC Work Programme 2022 sets out the priorities that the Board of Regulators has identified for 2022. These areas may be complemented by other emerging topics of interest during the year.

The objectives of the work programme are based on the BEREC Strategy 2021-2025, with a close focus on three priorities: promoting full connectivity, supporting sustainable and open digital markets, empowering end-users. It also draws on the Medium Term Strategy for relations with other agencies. Finally, the Work Programme aims to align with the priorities of the European Commission for the 2020-2024 legislative cycle and the policy objectives highlighted in the Commission's Communication on 'Shaping Europe's digital future' of 19 February 2020, including the 'Recovery Plan for Europe' from 27 May 2020 and the Green Deal.

2021 was a special year in light of the Covid-19 pandemic and the measures that consequently were taken. In these challenging circumstances the BEREC community managed to fully deliver on our commitments in the work programme. In addition, BEREC contributed to the European legislative process to effectively regulate risks associated with large gatekeepers in the digital platforms via the DMA and DSA.

In 2022 BEREC is set to support the further implementation of the EECC in national practices since it is expected that the delay in implementing the EECC in national legislation in numerous member states will be caught up. Thus, all NRAs stand ready to act and BEREC will start to accumulate experiences and developing best practices. BEREC will enable a consistent and harmonised application of the framework among the NRAs, through monitoring and in (internal) workshops.

Promoting full connectivity for consumers and businesses remains a key priority for BEREC in 2022. In line with the European ambition to create a Europe fit for the digital age, BEREC will contribute by facilitating the roll-out of very high capacity networks and to stimulate their contribution to close the digital divide. Mapping the deployment of Very High Capacity Networks (VHCNs) in various national markets is one concrete way in which BEREC will enable governments to stimulate further roll-out without unduly hampering the market dynamics. Through cooperation with other competent authorities and stakeholders, BEREC will also help to ensure that future network technologies meet their connectivity targets in line with European values and societal needs such as (cyber)security, safety and environmental challenges.

In the context of rapid technological change and growing importance of end-to-end connectivity, it is vital that our regulatory practices remain fit for purpose. To this end, BEREC will continue to analyse technological developments and their impact on sustainable competition on telecom markets. In 2022 our workstreams will cover a wide range of developments, ranging from new business models in 5G to the use of satellite, open RAN and from the role of fibre in backhaul to copper switch-off strategies.

Closing the digital divide entails more than just the roll-out of Very High Capacity Networks. It also requires that end users have access that fits their needs. BEREC will empower end users by further enhancing transparency and (work on) equivalence of access for disabled end-users.

Open and sustainable European digital markets are a cornerstone of a Europe fit for the digital age. BEREC aims to underpin this by building a knowledge base to consistently and effectively regulate the digital ecosystem where this is required to maintain open and competitive digital markets. To this end BEREC will contribute to the co-legislators and NRAs through our research reports on the internet ecosystem, AI and best practices in regulatory enforcement vis-à-vis digital market players.

In 2021, BEREC has studied its own contribution to sustainability, in line with the Green Deal ambitions. In 2022, BEREC will take concrete measures to find the proper mix of virtual and physical meetings, building further on lessons learned from COVID-19. We will also start a program to try, find and implement other sustainable resource-efficient solutions in order to minimise our footprint. BEREC will also publish the results of our analysis of the contribution of the telecoms sector to a greener Europe at the beginning of the year.

We will work intensively on several essential tasks that have been entrusted to BEREC by the co-legislators so as to provide the best advice to the European Parliament, the Council and the Commission in the field of electronic communications. This will include the implementation of the new roaming regulation, that is expected to come into force at the beginning of 2022.

BEREC will continue to enhance its own working methodology and engage cooperatively and effectively with stakeholders, in particular by exploring how collaboration can be strengthened with other European institutions so that we are ready to anticipate on future challenges.

Berec will internally reinforce its coordination on innovative networks and emerging technologies, in order to get prepared for future evolutions and in particular to better understand them and identify their possible impact on regulation. This approach will be an integral part of all the projects throughout the working programme.

## II. BACKGROUND

The four objectives of the EECC (Article 3(2)) remain the foundation for the work set out in BEREC's annual work programmes, and the guiding force for the Work Programme 2022. These four objectives are:

- promoting connectivity and access to very high capacity networks,
- promoting competition and efficient investment,
- contributing to the development of the internal market,
- promoting the interests of EU citizens.

The EECC, the BEREC Regulation and the mandatory tasks flowing from these legislative instruments provide the basis for the BEREC Work Programme 2022. The BEREC Strategy<sup>1</sup> 2021-2025 is fundamental for steering BEREC's work in 2022 and the following years. The Work Programme 2022 seeks to address current regulatory challenges, while preparing BEREC for the new challenges that lie ahead resulting from political, economic and technological developments.

This Work Programme 2022 contains items that were launched in 2021 that are to be finalised in 2022, some ad hoc or recurring items, and new workstream proposals that have been identified and prioritised by BEREC members and stakeholders.

According to the BEREC Regulation, when developing its annual work programme, the Board of Regulators of BEREC must seek the views and proposals of the EU institutions and other interested parties. This includes the national regulatory authorities (NRAs) participating in BEREC and BEREC's own Working Groups, and third parties and stakeholders (Article 21(1) of Regulation (EU) 2018/1971). BEREC organises therefore a forum for stakeholders (the 'Stakeholder Forum') to enhance transparency and give stakeholders an opportunity to express their views on BEREC's current and future work, in particular, for preparing the work programmes.

An Outline of the Work Programme 2022 was adopted and published by the Board of Regulators on 27 January 2021. On 26 March, BEREC launched an early call for input as the first stage of the consultation process for this Working Programme.

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<sup>1</sup> See [https://bereg.europa.eu/eng/document/register/subject\\_matter/bereg/annual\\_work\\_programmes/9281-bereg-strategy-2021-2025](https://bereg.europa.eu/eng/document/register/subject_matter/bereg/annual_work_programmes/9281-bereg-strategy-2021-2025)

### III. BEREC WORK IN 2022

The objectives of this Work Programme are aligned with the BEREC Strategy 2021-2025, the three high-level priorities (promoting full connectivity, supporting sustainable and open digital markets, empowering end-users), and the priorities set for institutional and international cooperation. The BEREC Strategy 2021-2025 is based on market developments and relates to the strategic objectives of the EECC. In addition to these three priorities, the facilitation of a successful implementation and consistent application in all areas of the EECC, including spectrum, universal service and consumer protection, are important horizontal principles that form an essential part of the high-level priorities.

In the next sections, there is a detailed description of the main projects to be carried out by BEREC in 2022.

## 1. Strategic priority 1: Promoting full connectivity

Promoting full connectivity will remain a strategic priority in the coming four years for BEREC, in line with the focus on promoting very high capacity networks within the European regulatory framework. This means prioritising work that improves the general conditions for the expansion and take-up of secure, competitive and reliable high-capacity networks (both fixed and wireless) across Europe while ensuring a smooth transition from legacy infrastructures.

### 1.1. Report on a consistent approach to migration and copper switch-off (carry-over)

The requirements concerning the capabilities of electronic communications networks are constantly increasing and the response towards that demand is to bring optical fibre closer and closer to the user. Therefore, the importance of the copper-based access network decreases and NRAs are increasingly confronted with the situation wherein the SMP operator wants to decommission its legacy copper-based access network and close MDFs.

The EECC and the European Commission's Recommendation on Next Generation Access of 2010<sup>2</sup> already foresee rules for the migration from legacy infrastructure and the decommissioning of the copper-based access networks. According to Art. 81 of the EECC, SMP operators must notify the NRA in advance and in a timely manner when they plan to decommission parts of the network. The NRA has to ensure that the decommissioning process includes a transparent timetable and conditions, including an appropriate notice period for transition. The NRA also has to establish the availability of alternative products of at least comparable quality if necessary to safeguard competition and the rights of end-users.

BEREC's Common Positions on best practices in remedies on Markets 3a, 3b and 4 published in 2012 include best practices with regard to the competition objective "Assurance of efficient migration processes from legacy to NGN/NGA network<sup>3</sup>." BEREC already held an internal

<sup>2</sup> See <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32010H0572>

<sup>3</sup> See BoR (12) 126, BoR (12) 127, BoR (12) 128.



workshop on “migration from legacy infrastructures to fibre-based networks” in 2019<sup>4</sup> to enable NRAs to share their experiences with the migration.

Building further upon the experiences shared in this BEREC internal workshop, BEREC will issue a Report aiming to develop a consistent approach to migration and copper switch-off. Based on detailed data collected from the respective NRAs which will include also the stakeholders’ view on migration and their involvement at national level, the aim of the Report is to identify a consistent approach to migration and copper switch-off.

**Deliverable: BEREC Report on a consistent approach to migration and copper switch-off**

Public consultation: Yes

Adoption of draft Report for public consultation at Plenary 4 2021

Adoption of final Report at Plenary 2 2022 for publication

## 1.2. Report on regulatory treatment for fixed and mobile backhaul (carry-over)

Backhaul infrastructure is key for enabling 5G and facilitating the deployment of very high-speed networks in non-densely populated areas. Moreover, the Recommendation on relevant markets<sup>5</sup> addresses the issue of how to take account of backhaul in the process of relevant markets by NRAs.

The objectives of this Report are to present the legal provisions applicable to mobile and fixed backhaul, the regulation and use of different types of backhaul networks and services in Europe, as well as views expressed by operators on their current and future needs for backhaul. The Report will be based on the responses received to two BEREC questionnaires, one for National Regulatory Authorities and another one for operators.

BEREC already addressed backhaul issues in the BEREC Report on the convergence of fixed and mobile networks<sup>6</sup>, published in October 2017, which analysed operators’ needs in terms of backhaul services in the context of fixed-mobile convergence and provided a comprehensive view on the way that regulation for backhaul for mobile services is addressed. This new Report continues and updates this previous work and completes it with an analysis of the regulatory treatment, and operators’ input, concerning fixed backhaul.

The final Report will be published in early 2022 and will take into consideration stakeholders’ input on the draft Report that will be subject to public consultation in Autumn 2021.

**Deliverable: BEREC Report on regulatory treatment for backhaul**

Public consultation: Yes

<sup>4</sup> See summary Report BoR (19) 236 on the migration from legacy infrastructures to fibre-based networks and interact with stakeholders ([link](#)).

<sup>5</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020H2245>

<sup>6</sup> See [https://berec.europa.eu/eng/document/register/subject\\_matter/berec/reports/7311-berec-report-on-the-convergence-of-fixed-and-mobile-networks](https://berec.europa.eu/eng/document/register/subject_matter/berec/reports/7311-berec-report-on-the-convergence-of-fixed-and-mobile-networks)

Adoption of draft Report for public consultation at Plenary 3 2021
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Adoption of final Report at Plenary 1 2022 for publication
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### 1.3. Report on the 5G Value Chain

BEREC has carried out extensive work to determine how 5G will impact the ecosystem, initiating this work in 2018 with BEREC's commissioned study on the implications of 5G deployments on future business models and BEREC's Report on infrastructure sharing. In 2019, BEREC developed a "BEREC Report on the impact of 5G on regulation and the role of regulation in enabling the 5G ecosystem" and in 2020 published the BEREC 5G Radar and the accompanying guide.

The BEREC 5G Radar had identified "New business models and value chains" as one of the thematic areas that BEREC should look into as 5G has the potential to impact existing value chains and ecosystem. This thematic area and the anticipated pace of innovation was the focus of the BEREC workshop on 5G organised in 2021, during which distinguished speakers and researchers from the telecommunications ecosystem provided their insight based on past an ongoing research activities and commercial developments. This workshop sought to gather information on the envisaged impact of the new 5G technologies and 5G use cases on the supply chain and when such transformation can be expected.

New 5G technologies promise multiple opportunities such as network slicing, software virtualisation, disaggregated and interoperable products leading to multi-vendor solutions. Unlike previous generations, 5G was designed with the 5G Verticals in mind as instead of solely connecting people it aims to connect everything and everyone. The new 5G technologies and the 5G use cases will transform the supply and demand side respectively. Thus BEREC shall extend the focus adopted in 2021 for the BEREC workshop on 5G to study the impact of the anticipated changes on the entire 5G value chain i.e. both supply and demand. This shall be done with the intent to analyse further how regulation can continue to support the objectives stipulated in the European Electronic Communications Code (Article 3 (2)). This is in line with BEREC's strategy which seeks to promote full connectivity and empower end-users who with the emergence of 5G, an end-user can be both a 5G vertical and also an operator via for example a private local network for example a smart factory.

By the end of 2021, BEREC shall publish the workshop Report on the envisaged supply-chain diversification and the anticipated pace of innovation. Via the consultation of this Report BEREC is seeking to obtain feedback on the first observations and input for the report on the 5G Value Chain. Following this exercise BEREC will consult with key stakeholders to further explore the expectations on the transformations of the 5G value chain.

<b>Deliverable: Report on supply-chain diversification and the anticipated pace of innovation (carry-over)</b>
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Public consultation: Yes
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Adoption of draft Report for public consultation at Plenary 4 2021
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Adoption of final Report at Plenary 2 2022 for publication
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**Deliverable: Report on the 5G Value Chain**

Public consultation: Yes

Adoption of draft Report for public consultation at Plenary 3 2022

Adoption of final Report at Plenary 1 2023 for publication

**1.4. Report on wholesale mobile access connectivity**

In the context of 5G there is an expectation that new innovative services will take-off, including some delivered by third parties. Initially, many of these services will depend on connectivity over 4G networks, as these will cover larger geographical areas until there are comparable levels of 5G connectivity in place.

One form of connectivity for innovative companies offering new services is in the role of MVNO (mobile virtual network operator). MVNOs may, however, struggle when negotiating access conditions, mainly wholesale prices, with traditional mobile network operators (MNOs). Access obligations / remedies (e.g. cost orientation, price caps) may be implemented in 5G spectrum awards to address this, but some operators will deploy 5G technology using spectrum capacity they hold from previous awards where no such remedies apply.

BEREC's 5G RADAR workstream in 2020 hinted at the above issues under the topic of "New Business Models and Value Chain".<sup>7</sup> For example, BEREC proposed it might consider this topic in the period 2022 – 2023 with a view to identifying issues regarding access to physical mobile networks and services for provisioning mobile services by third parties like MVNOs or future verticals.

As a result, the context for the present workstream is to consider relevant issues associated with wholesale connectivity for MVNOs. BEREC proposes to report on this topic observing that new business models may also depend on the level of competition between MNOs and MVNOs. Factual investigations of the competitive dynamics are therefore important and may also affect choices available to end-users of new businesses in terms of connectivity providers (MNOs, MVNOs, other micro operators e.g. using a network slice).

The Report should gather information about wholesale mobile access obligations and identify any issues/barriers and opportunities for new business models. This might be useful in view of market analyses and discussions on oligopolistic market structures. The work is therefore aligned with BEREC's strategic priority on promoting full connectivity.

**Deliverable: Report on wholesale mobile access connectivity**

Public consultation: Yes

Adoption of draft Report for public consultation at Plenary 2 2022

Adoption of final Report at Plenary 4 2022 for publication

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<sup>7</sup> See also BoR(20) 223.

## 1.5. Workshop on Open RAN

Open RAN means a software-based network solution based on open and modular interfaces within the Radio Access Network (RAN). Open RAN aims to make such interfaces more interoperable. As a result, hardware and software components may be provided by multiple suppliers. Virtualisation and cloudification (of the interfaces and other elements) may enable operators to run software services on generic hardware. Essentially, Open RAN is considered a logical next step in the technological development of communications networks.

BEREC has already taken steps to gather information about the attitude of telecommunications operators active in European markets towards Open RAN. In addition BEREC heard from relevant stakeholders about the potential benefits of Open RAN during a workshop on mobile infrastructure sharing in 2020.<sup>8</sup> For its part, the European Commission undertook a study on 5G supply markets and Open RAN, which has been published in August 2021<sup>9</sup>. The NIS Cooperation Group is working on an in-depth analysis of the security implications of open, disaggregated and interoperable network technology solutions ('Open RAN') under the EU Toolbox. BEREC is providing its support to this work.

In this context, BEREC will hold a workshop to identify unanswered or uncertain issues about Open RAN. The workstream might also focus on related topics such as cybersecurity, resilience and sustainability.

<p><b>Deliverable: External Workshop on Open RAN</b></p> <p>Public consultation: No</p> <p>Adoption of summary Report at Plenary 3 2022 for publication</p>
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## 1.6. Report on satellite connectivity for universal service

The EECC enshrines an “adequate broadband internet access service” in the universal service mechanism. Bringing broadband internet to remote or underserved areas is particularly crucial for ubiquitous access. At the same time, it is a challenging task due to factors such as high costs for the service provision. Broadband internet via satellite communication (Satcom) can be a promising solution, especially against the background of new systems in the low and medium earth orbit as well as geostationary orbit (new high throughput networks).

The European Commission recognises the potential of Satcom and has taken first steps towards a European space-based connectivity initiative. The EC's goal is, amongst other things, to “put an end to dead zones, giving access to high speed broadband to everyone”.<sup>10</sup>

<sup>8</sup> See also BoR (20) 240.

<sup>9</sup> <https://digital-strategy.ec.europa.eu/en/library/commission-publishes-study-future-5g-supply-ecosystem-europe>

<sup>10</sup> [Speech by Commissioner Thierry Breton at the 13th European Space Conference | European Commission \(europa.eu\)](#)

In this context and given the central role of NRAs in the implementation of universal service obligations, BEREC proposes to consider the potential of Satcom solutions for ubiquitous broadband connectivity in an objective and technology neutral way.

In particular, it proposes a workstream that aims to understand what are the regulatory steps needed if Member States plan to use Satcom for universal service and how these plans may fit into current as well as projected Satcom capacities (geostationary as well as non-geostationary). Understanding the issues at hand may help to develop a coordinated approach and the Report would enable BEREC to establish an early link with the Commission's initiative. The proposed work therefore aligns with the strategic priority on promoting full connectivity.

**Deliverable: Report on satellite connectivity for universal service**

Public consultation: Yes

Adoption of draft Report for public consultation at Plenary 2 2022

Adoption of final Report at Plenary 4 2022 for publication

### **1.7. Workshop to share experience on the implementation of Article 22 EEECC**

In 2020, BEREC published the BEREC Guidelines on Geographical surveys of network deployments, which detail the core provisions of Article 22 of the EEECC. The Guidelines specify the spatial resolutions to be used for data collection of network deployments of fixed and mobile broadband networks. The Guidelines also describe the information that the NRAs/OCAs must obtain in order to characterize the reach and performance of broadband networks, including the characterization as a VHCN.

Article 22 requires for these surveys to be undertaken before December 2023, after the transposition of the EEECC into national legislation and the update (or creation) of broadband mapping methodologies at national level, which is an important development.

The implementation of the Guidelines will imply a substantive effort of the relevant authorities and operators. Because of this, BEREC wants to foster an experience sharing forum, where authorities can learn from each other. At the same time, BEREC can gather the stage of development of the different national surveys to anticipate some of the relevant issues to be considered in the future years. This will serve as a basis for a future implementation report where it will examine how different MS have transposed and enabled the Article 22 provisions.<sup>11</sup>

To that end and considering the already expressed interest by some NRAs, BEREC will hold a workshop with all interested NRAs and OCAs for knowledge and experience sharing with regards to the implementation of the Article 22 provisions.

**Deliverable: Workshop to share experience on the implementation of Article 22 EEECC**

<sup>11</sup> See paragraph 15 in BoR (20) 42).

Public consultation: No
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Presentation on the outcome of the workshop at Plenary 4 2022
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### **1.8. BEREC Report on competition amongst multiple operators of NGA-networks in the same geographical region**

When defining relevant markets in accordance with Article 64(3) of Directive 2018/1972/EC, national regulatory authorities should identify geographic areas where the conditions of competition are similar or sufficiently homogeneous, and which can be distinguished from neighboring areas in which the prevailing conditions of competition are appreciably different. NRAs have to pay attention to whether the potential Significant Market Power (SMP) operator acts uniformly across its network area (territory) or whether it faces appreciably different conditions of competition to a degree that its activities are constrained in some areas but not in others.

In addition regional operators of VHCN/NGA-networks play an increasingly important role on the broadband market in many countries. The networks of different operators may for example partly overlap in some areas or could be very close to each other and could easily be expanded. Also network operators may use different business strategies – to differentiate (or not) prices across their networks dependent on the presence of other operators.

The project will investigate how competition between multiple VHCN/NGA regional operators, depending on the degree of network overlap, different business strategies and other relevant factors for competition, is handled in the context of SMP-analysis of the market for wholesale local access provided at a fixed location. This project will be a follow up to BEREC's Report on the application of the Common Position on geographic aspects of market analysis<sup>12</sup>, but will focus on the outcome of competition, namely retail prices and product diversification as a result of the presence of competing networks.

<b>Deliverable: BEREC Report on competition amongst multiple operators of NGA-networks in the same geographical region</b>
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Public consultation: Yes
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Adoption of draft Report for public consultation at Plenary 4 2022
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Adoption of final Report at Plenary 2 2023 for publication
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<sup>12</sup> See BoR (18) 213.

## 1.9. Business services

### 1.9.1. BEREC Report on the regulatory treatment of business services

Business services consisting of, or based on, electronic communication services are a key input to ensure that the EU companies and public administrations can benefit from the digital economy. It allows for better provision of new innovative services for citizens and increases productivity and competition in a globalised world.

In the last years business services have evolved and are expected to evolve even more to include new high-speed services supported by deployment of VHCNs and 5G, and are increasingly being combined with IT services as cloud computing or the merging of ECS services with IT services via edge computing.

NRAs are regulating wholesale business services under M2/2020 as well as other markets, including a series of wholesale products used by alternative operators to compete with incumbents in the market for large companies, SMEs and all type of public administrations. The report will focus on key issues regarding the competitive dynamics at the retail level (where an external study on the evolution of business services will be used as a key input).

Moreover, BEREC will analyse the regulatory treatment of these wholesale products, providing a snapshot of the markets in which these services and products are regulated, their geographical scope and the remedies applied. BEREC will also include case studies of good practices used by NRAs to encourage effective and sustainable competition, as well as investment and innovation in the business market.

BEREC members and stakeholders will benefit from the results of this report by getting a complete view on how these services are regulated, on the challenges faced by NRAs and on good practices for ensuring competitive and innovative business markets.

<p><b>Deliverable: BEREC Report on the regulatory treatment of business services</b></p> <p>Public consultation: Yes</p> <p>Adoption of draft Report for public consultation at Plenary 1 2023</p> <p>Adoption of final Report at Plenary 3 2023 for publication</p> <p>Other deliverable: Workshops with stakeholders' associations: Q3 2022</p>
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### 1.9.2. External study on evolution of business services

BEREC will commission a study on the evolution of business services. The key objective of this study is to have an EU view on how these services are evolving and are expected to evolve in the next years, including speeds, QoS and technologies and new emerging services combining IT services. This study will thus provide a comprehensive view of the actors in the market, the types of offers and the demand for these services.



This report will be commissioned to an external company specialised in this type of analysis. They would be expected to carry out an in-depth study on these services in Europe, together with a series of interviews with key stakeholders, aimed to get their insights on key issues to be considered when regulating these business services.

The results of the study will provide BEREC members with an overview and an analysis of the evolution of the business services and will feed the work to be done by BEREC on the regulation of wholesale products for business services (see 1.9.1).

BEREC will launch a tender and contract the study in Q1 2022, with the aim to publish the study in Q3 2022.

<p><b>Deliverable: External study</b></p> <p>Public consultation: No</p> <p>Adoption and publication of the study at Plenary 3 2022</p>
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## 2. Strategic priority 2: Thriving sustainable and open digital markets

BEREC will prioritise work relating to the functioning of digital markets, namely focusing on exploring conditions and addressing issues regarding digital service providers and end-users in the digital market.

BEREC recognises that the digital economy brings both new opportunities and challenges, e.g. the use of big data and algorithms has great potential but it could increase the risk of some companies becoming dominant in a particular market. The proposal for the Digital Markets Act (DMA) as published by the European Commission (EC) in December 2020 and the legislative negotiations at the EU Parliament and the Council will be a core priority of the European Commission in 2022. BEREC will continue to keep contributing to the refinement and improvement of the DMA proposal. Furthermore BEREC will be following the developments regarding the Artificial Intelligence Act and the Digital Services Act.

The open internet is considered an important building block in the current EU telecom rules. With specific obligations on telecom operators, it guarantees an open internet for the benefit of end-users. This enables innovation without permission by internet users and access to the content and services of their choice. With the current roll-out of 5G services, BEREC will have an important role in contributing to the continued, predictable and consistent application of open internet regulation.

### 2.1. Report on the Internet ecosystem (carry-over, before named: Report on the Internet Value Chain)

Thus far, BEREC has mainly focused its work on the part of the internet ecosystem directly related to electronic communication networks, internet access services and end-user



equipment. These components are essential for end-users to use the applications provided via the internet.

However, ECSs and ECNs are just a part of a vast and complex ecosystem that allows end-users and the whole society to benefit from the extraordinary potential of a large variety of services provided via the internet.

Just like other ecosystems, all the elements in the internet are interrelated and affect each other. Therefore, internet experience for users is affected by many other elements, such as terminals, operating systems, applications, app stores, or content that condition in many ways user experience when accessing the internet.

The aim of this Report is to provide a comprehensive view of the internet ecosystem beyond the network layers and the ECSs supporting internet access. More specifically, BEREC will identify the type of actors representing a relevant gateway to information and services (e.g. potential gatekeepers), the bottlenecks and barriers to entry on specific elements, as well as the interactions between different elements within the internet ecosystem and how they economically and technically affect each other, as well as other users and actors. BEREC will take a general, holistic approach in this exercise.

BEREC has already done relevant work in different parts of the internet ecosystem. Regarding the network layer, BEREC has worked on implementing the open internet regulation in a coherent manner. In support of this the Open Internet Guidelines were updated. Over the years, BEREC has also examined traffic management practices and Quality of Service (QoS), including how QoS should be measured and how to analyse the results. This includes how the end-user equipment might affect the internet access service in practice, building further upon previous exchanges (two workshops in Q 3/4 2020 on IPv6 and traffic identification (both relevant for the internet ecosystem)). In 2017, BEREC published a Report on IP interconnection practices<sup>13</sup>.

BEREC has also analysed the levels of the internet ecosystem beyond the network layer in different reports, such as the “BEREC Report on the impact of premium content on ECS markets and the effect of devices on the open use of the Internet”<sup>14</sup> (addressing issues raised by e.g. app stores), and) and the “BEREC Report on the data economy”<sup>15</sup>, highlighting relevant aspects of ECSs as a key infrastructure supporting the data economy, as well as the impact of data economy on ECS competition.

More recently, BEREC has analysed competition dynamics and proposed a model concerning the regulatory intervention towards digital gatekeepers in the “BEREC Report on the *ex ante* regulation of digital gatekeepers”<sup>16</sup> and the “BEREC Response to the Public Consultations on

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<sup>13</sup> See [https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/reports/7299-berec-report-on-ip-interconnection-practices-in-the-context-of-net-neutrality](https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/7299-berec-report-on-ip-interconnection-practices-in-the-context-of-net-neutrality)

<sup>14</sup> See [https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/reports/8013-berec-report-on-the-impact-of-premium-content-on-ecs-markets-and-the-effect-of-devices-on-the-open-use-of-the-internet](https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/8013-berec-report-on-the-impact-of-premium-content-on-ecs-markets-and-the-effect-of-devices-on-the-open-use-of-the-internet)

<sup>15</sup> See [https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/reports/8599-berec-report-on-the-data-economy](https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/8599-berec-report-on-the-data-economy)

<sup>16</sup> BoR (21) 34, “Draft BEREC Report on the *ex ante* regulation of digital gatekeepers”, see: [https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/reports/9880-draft-berec-report-on-the-ex-ante-regulation-of-digital-gatekeepers](https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/9880-draft-berec-report-on-the-ex-ante-regulation-of-digital-gatekeepers)

the Digital Services Act Package and the New Competition Tool”<sup>17</sup>. In the same line, BEREC also published two papers detailing its proposals to improve the regulatory intervention towards digital gatekeepers concerning the tailoring of remedies<sup>18</sup>, as well as the institutional design of the intervention.<sup>19</sup>

The work to be done will be supported by these earlier Reports and will feed into current and future BEREC work on digital environments, including the implementation of the Digital Markets Act.

Considering the complexity of the internet ecosystem and the variety of actors involved in providing internet services, BEREC plans to interact with various stakeholders, by organising workshops and in-depth meetings with relevant actors. The work will be carried out between 2021 and 2022. In 2021, BEREC organised workshops with relevant stakeholders (including those operating in other parts of the ecosystem above the ECSs), other institutions (as the OECD), think-tanks (e.g. CERRE) and academia.

As part of the preparatory work, BEREC organised a Heads Workshop at the end of 2021 where key actors will be invited to participate. Based on this preparatory work, BEREC will open a draft version of the Report to public consultation in Q2 2022, with the aim of publishing the final Report in Q4 2022.

#### **Deliverable: Report on internet ecosystems**

Public consultation: Yes

Adoption of draft Report for public consultation at Plenary 2 2022

Adoption of final Report at Plenary 4 2022 for publication

## **2.2. BEREC Report(s) for an effective enforcement of the regulatory intervention on digital gatekeepers**

In December 2020, the European Commission (EC) published a proposal for a Digital Markets Act (DMA), introducing a series of rules for platforms acting as gatekeepers in the digital sector. The DMA proposal is currently being discussed by the EU Parliament and the Council of the EU and likely to be adopted in mid-/end 2022.

Building on previous work on digital platforms and the digital economy, BEREC has been actively contributing to the EU debate on how to shape the regulatory intervention on digital

<sup>17</sup> BoR (20) 138, “BEREC Response to the Public Consultations on the Digital Services Act Package and the New Competition Tool”, see [https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/others/9411-berec-response-to-the-public-consultation-on-the-digital-services-act-package-and-the-new-competition-tool](https://berec.europa.eu/eng/document_register/subject_matter/berec/others/9411-berec-response-to-the-public-consultation-on-the-digital-services-act-package-and-the-new-competition-tool)

<sup>18</sup> “BEREC proposal on remedies-tailoring and structured participation processes for stakeholders in the context of the Digital Markets Act” BoR (21) 94. June, 2021. See: [https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/others/9964-berec-proposal-on-remedies-tailoring-and-structured-participation-processes-for-stakeholders-in-the-context-of-the-digital-markets-act](https://berec.europa.eu/eng/document_register/subject_matter/berec/others/9964-berec-proposal-on-remedies-tailoring-and-structured-participation-processes-for-stakeholders-in-the-context-of-the-digital-markets-act)

<sup>19</sup> “BEREC proposal on the set-up of an Advisory Board in the context of the Digital Markets Act” BoR (21) 93. June, 2021. See: [https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/others/9963-berec-proposal-on-the-set-up-of-an-advisory-board-in-the-context-of-the-digital-markets-act](https://berec.europa.eu/eng/document_register/subject_matter/berec/others/9963-berec-proposal-on-the-set-up-of-an-advisory-board-in-the-context-of-the-digital-markets-act)

gatekeepers. Some of the key features in the *ex ante* model that BEREC proposed in its Response to the Public Consultations on the Digital Services Act Package and the New Competition Tool<sup>20</sup> were integrated by the EC in its proposal. In March 2021, BEREC adopted an Opinion on the DMA<sup>21</sup> and published a Draft Report on the *ex ante* regulation of digital gatekeepers for public consultation,<sup>22</sup> highlighting the main proposals for making this EU regulatory intervention swift, effective and future-proof. The final Report, taking account of the stakeholders' input, will be adopted in October 2021.

To make sure that its proposals were fit for purpose, in April and May 2021 BEREC organised two public workshops with different types of relevant stakeholders to gather their views and test, and enrich its proposals on market entry and end-users' empowerment in the context of the DMA. In June, BEREC also published two proposals focusing on remedies-tailoring and structured participation processes for stakeholders,<sup>23</sup> and on the set-up of an Advisory Board,<sup>24</sup> as well as the "BEREC Report on the interplay between the EECC and the EC's proposal for a Digital Markets Act concerning number-independent interpersonal communication services".

All this work aims at contributing to informing and supporting the European institutions, building on NRAs' expertise in *ex ante* regulation, as well as by analysing and taking account of the views of relevant stakeholders.

Given the current timing (i.e. the EU legislative procedure before the adoption of the Act), it is key for BEREC to keep contributing to the refinement and improvement of the DMA proposal, especially concerning its enforcement. The discussions within the European institutions and the stakeholders will highlight more precisely on which topics BEREC contribution will be more valuable.

Depending on how the discussion on the DMA will evolve in the next months, this could include e.g.: i) an analysis of the type of information and data which would be relevant to collect from digital actors (gatekeepers, business and end-users, etc.) in order to understand their business models, as well as monitoring markets and/or compliance with the remedies, ii) the appropriate definition of regulatory measures building on our experience in the ECS sectors, iii) how to organise the support to the EU regulator by national independent authorities and the advisory board proposed by BEREC for the efficient enforcement of the DMA regulation.

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<sup>20</sup> "BEREC Opinion on the European Commission's proposal for a Digital Markets Act" BoR (21) 35. March, 2021. See: [https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/opinions/9879-berec-opinion-on-the-european-commissions-proposal-for-a-digital-markets-act](https://berec.europa.eu/eng/document_register/subject_matter/berec/opinions/9879-berec-opinion-on-the-european-commissions-proposal-for-a-digital-markets-act)

<sup>21</sup> "BEREC Opinion on the European Commission's proposal for a Digital Markets Act" BoR (21) 35. March, 2021. See: [https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/opinions/9879-berec-opinion-on-the-european-commissions-proposal-for-a-digital-markets-act](https://berec.europa.eu/eng/document_register/subject_matter/berec/opinions/9879-berec-opinion-on-the-european-commissions-proposal-for-a-digital-markets-act)

<sup>22</sup> "Draft BEREC Report on the *ex ante* regulation of digital gatekeepers" BoR (21) 34. March, 2021. See: [https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/reports/9880-draft-berec-report-on-the-ex-ante-regulation-of-digital-gatekeepers](https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/9880-draft-berec-report-on-the-ex-ante-regulation-of-digital-gatekeepers)

<sup>23</sup> "BEREC proposal on remedies-tailoring and structured participation processes for stakeholders in the context of the Digital Markets Act" BoR (21) 94. June, 2021. See: [https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/others/9964-berec-proposal-on-remedies-tailoring-and-structured-participation-processes-for-stakeholders-in-the-context-of-the-digital-markets-act](https://berec.europa.eu/eng/document_register/subject_matter/berec/others/9964-berec-proposal-on-remedies-tailoring-and-structured-participation-processes-for-stakeholders-in-the-context-of-the-digital-markets-act)

<sup>24</sup> "BEREC proposal on the set-up of an Advisory Board in the context of the Digital Markets Act" BoR (21) 93. June, 2021. See: [https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/others/9963-berec-proposal-on-the-set-up-of-an-advisory-board-in-the-context-of-the-digital-markets-act](https://berec.europa.eu/eng/document_register/subject_matter/berec/others/9963-berec-proposal-on-the-set-up-of-an-advisory-board-in-the-context-of-the-digital-markets-act)

**Deliverable: BEREC Report(s) / Opinion(s) for an effective enforcement of the regulatory intervention on digital gatekeepers**

Adoption of deliverable: as required

### **2.3. Report on challenges and benefits of Artificial Intelligence (AI) solutions in the telecommunications sector (including use cases)**

The promise that Artificial Intelligence (AI) can assist our society must be substantiated with a clear understanding of both the benefits and risks associated with use cases relying on AI. As can be seen by the EC's draft Artificial Intelligence Act, there is a European agreement on following a human-centered approach. This insight will help anticipate the effects of AI on the Digital Single Market and the regulation of electronic communications. BEREC's Report on AI intends to inform the current EU procedure to adopt the Artificial Intelligence Act. It is expected that AI with the support of 5G and IOT, together referred to as Intelligent Connectivity, will enable new use cases in a number of Vertical Sectors such as energy supply, transportation, industrial automation and healthcare. In practice, there are already use cases of AI for network automation, network optimization, preventive maintenance and also to provide virtual assistance for customer support.

BEREC seeks to determine how AI can impact electronic communications networks and services by first looking into different use cases in the telecoms sector. The study will also seek to determine the different types of data that can be collected from public networks which can then be used for AI applications. This can vary from data that can be collected by Network Operators but also by other Service Providers such as those that manage and operate a massive IoT network. The information collected will then be analysed to determine the opportunities and challenges which BEREC must take into consideration in its future work to ensure that it continues to fulfil its strategic priorities, in particular to support sustainable and open digital markets and empowering end users.

This study will thus provide preliminary foresight into how AI and big data can impact the digital economy and potential monopolies, dominance and bottlenecks. Moreover, it will also enable BEREC to look into the various aspects of AI that must be taken into consideration to continue to empower end-users by building trust in networks and digital services, transparency and informed choices by consumers.

**Deliverable: Report on challenges and benefits of Artificial Intelligence (AI) solutions in the telecommunications sector (including use cases)**

Public consultation: Yes

Adoption of draft Report for public consultation at Plenary 4 2022

Adoption of final Report at Plenary 2 2023 for publication

## 2.4. Open internet

### 2.4.1. Collaboration on the Net Neutrality Measurement tools and evolution of the regulatory assessment methodology (carry-over)

In 2017, BEREC published the BEREC Net Neutrality Regulatory Assessment Methodology<sup>25</sup> (BoR (17) 178), and the Net Neutrality measurement tool specification (BoR (17) 179) which lay the groundwork for BEREC to work towards a harmonised measurement framework. This goal remains important and work has continued.

This work item is linked to strategic priorities 2 (Supporting sustainable and open digital markets) and 3 (Empowering end-users), as reliable internet access quality measurement systems serve both purposes.

With this workstream BEREC intends to:

- 1) Continue the ongoing work with NRAs related to their national measurement tool deployments to:
  - a. Provide a forum for NRAs to share information and exchange experiences and best practices related to national tool deployment. This workstream will also consider best practices on collaboration to maximise the benefits of existing NRA cooperation on measuring tool development and deployment.
  - b. Support the migration by interested NRAs towards a harmonised measurement tool by working together to improve the measurements and by sharing code or components between NRAs.
- 2) Continue to work towards a common, harmonised measurement framework including an update to the 2017 BEREC Net Neutrality Regulatory Assessment Methodology (BoR (17) 178) and based on learnings from national and European measurement tool development and benchmarking. This work is expected to include a revision of the internet access service QoS measurement methodology, by considering topics such as how to calibrate the tool; how to measure higher bit rates on 5G and fibre networks more accurately, etc.
  - a. In line with the 2018 BEREC Opinion on the Net Neutrality Guidelines, and with the revised 2020 BEREC Open Internet Guidelines, the workstream will seek to further develop the measurement methodology regarding measurement of the general quality of internet access services.
  - b. The Net Neutrality Regulatory Assessment Methodology update may also include a review of best practices for the certified monitoring mechanism, as defined in the Open Internet Regulation, and how to best utilise the measurement tools in terms of the NRAs' supervisory roles.

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<sup>25</sup> See

[https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/regulatory\\_best\\_practices/methodologies/7295-berec-net-neutrality-regulatory-assessment-methodology](https://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/methodologies/7295-berec-net-neutrality-regulatory-assessment-methodology)

**Deliverable: Update to the BEREC Net Neutrality Regulatory Assessment Methodology**

Public consultation: Yes

Adoption of draft Report for public consultation at Plenary 4 2021

Adoption of final Report at Plenary 2 2022 for publication

**2.4.2. Implementation of Regulation (EU) 2015/2120 and the BEREC Guidelines on the implementation of the Open Internet (OI) Regulation**

The Open Internet Regulation 2015/2120 prescribes, among others, that NRAs shall ‘closely monitor and ensure compliance’ with the Regulation, and that NRAs shall ‘publish reports on an annual basis regarding their monitoring and findings’.

Since 2017, BEREC has annually<sup>26</sup> published a Report on the implementation of the OI Regulation. Part of this work stream includes a discussion of cases and questions in the OI WG to ensure a predictable and consistent application of the Open Internet Regulation.

In the 2022 work stream, BEREC will monitor the implementation of the open internet provisions among NRAs for the period 1 May 2021 – 30 April 2022. BEREC will collect the annual national Open Internet Reports and the answers to an internal questionnaire to prepare the annual European-level Open Internet Report.

To support the NRAs’ obligation to ‘closely monitor and ensure compliance’ with the Regulation, a forum will be held to (informally) discuss questions relating to the consistent application of the OI Regulation. The sharing of experience and exchange on important decisions in national cases is essential to foster a consistent application of the Regulation throughout Europe in light of evolving markets and technologies. In addition to the discussing the national cases, the forum covers also the sharing of information on relevant market deployments like the IPv6 deployment in BEREC members and participants without voting rights.

When appropriate, the work stream may also conduct questionnaires, surveys, workshops, etc. to collect information on topics of particular relevance to the Open Internet and to monitor emerging trends as the market continues to develop. This work stream should build on the experiences from earlier years. A public workshop could be organized, in case of significant developments that make a stakeholder dialogue relevant e.g. a judgment of the European Court of Justice.

**Deliverable: BEREC Report on the implementation of the Open Internet Regulation**

Public consultation: No

Adoption of final Report at Plenary 3 2022 for publication

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<sup>26</sup> See

[https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/reports/8840-report-on-the-implementation-of-regulation-eu-20152120-and-berec-net-neutrality-guidelines](https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/8840-report-on-the-implementation-of-regulation-eu-20152120-and-berec-net-neutrality-guidelines)



### 2.4.3. Update to the BEREC Guidelines on the Implementation of the Open Internet Regulation

On 2 September 2021 the Court of Justice of the EU issued three judgements regarding violation of the European Union net neutrality rules in cases where zero-rating offers were involved. The CJEU judgements state that the practices by two German mobile operators (Telekom Deutschland and Vodafone) are incompatible with the Open Internet Regulation.

To contribute to the consistent application of the Open Internet Regulation and promote an effective internal market in the electronic communications sector, Article 5(3) of the Open Internet Regulation explicitly obliges BEREC to issue guidelines for implementing the obligations of National Regulatory Authorities (NRAs) under the Regulation.

BEREC will review and update the Open Internet Guidelines in light of the Court's decision to reflect the interpretation of the CJEU ruling and the update is limited in scope to that topic.

<p><b>Deliverable: Update to the BEREC Guidelines on the Implementation of the Open Internet Regulation</b></p>
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<p>Public consultation: Yes</p>
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<p>Adoption of draft Guidelines for public consultation at Plenary 1 2022</p>
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<p>Adoption of final Guidelines at Plenary 2 2022 for publication</p>
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## 3. Strategic priority 3: Empowering end-users

Engaging end-users in the fast-evolving digital ecosystem is becoming more complex. While digital innovation and competition among digital service providers has improved users' empowerment, there is still an important role for regulators to play in ensuring consumer transparency and digital skills.

The promotion of full connectivity will trigger the demand for high-quality services on the part of consumers, provided by very high capacity networks whose development is a key priority in creating positive interactions.

BEREC will continue its work in promoting choice and empowerment for end-users, to enable and result in better-informed choices by consumers.

### 3.1. Workshop on the application of rights of end-users in the EECC

With Article 123, the EECC introduces a specific review procedure on end-user rights, tasking BEREC with publishing an opinion on the market and technological developments regarding the different types of electronic communications services, which will serve the EC to publish a Report on the application of Title III of Part III ("End-user rights") and submit a legislative proposal to amend that Title where it considers this to be necessary to ensure that the objectives set out in Article 3 ("General objectives") continue to be met.

The effectiveness of end users' provisions may be affected by changes in the use of different ECS and their ability to ensure effective access to emergency services and by consumers use of communication services which is evolving over time, with the prevalence of number independent services as a substitute for traditional ECS.

In this light, a joint workshop BEREC-BEUC could be held to further investigate the ability of end-users of all electronic communications services to make free and informed choices and to easily switch their provider of electronic communications services and it shall analyse any market distortions or end-user harm arising in case of lack of those abilities. BEUC's perspective can contribute to the discussion on how market and technological development may affect the application of end users' rules.

This workshop could also include discussions on the results of the BEREC monitoring in 2021 and highlight specific issues for in-depth analysis which can constitute the basis for future opinions.

**Deliverable: Workshop on the application of rights of end-users in the EECC**

Workshop: Q4 2022

Public consultation: No

Adoption of a summary Report at Plenary 1 2023 for publication.

### **3.2. Report on best practices for ensuring equivalence of access and choice for disabled end-users**

This proposed project builds on the work done by BEREC in 2015 and 2017 resulting in the BEREC Report on best practices on equivalent access and choice for disabled end-users<sup>27</sup> that collated information from NRAs for the purposes of compiling an inventory of measures and initiatives that NRAs have in place to ensure equivalence of access and choice for end-users with disabilities.

Whilst the review of article 123 of the EECC will provide oversight into adequacy of Article 111 of the EECC, this benchmarking Report will identify the solutions in place throughout member states to meet the needs of users with disabilities. The Report will also provide information on the way Member States are implementing the measures referred in Article 85.4 of the EECC on the availability and affordability of specific equipment and specific services that enhance equivalent access, including total conversation services and relay services.

In order to ensure that the Report takes a strategic view of best practices, in addition to seeking information from NRAs BEREC may also:

- undertake a literature review;
- seek input from key stakeholders regarding any measures provided independently from those prescribed by the NRAs under other relevant consumer legislation e.g. European Accessibility Act;

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<sup>27</sup> See BoR (18) 30.



- within BEREC work with other EWGs to ensure a broad view is reflected in the Report.

**Deliverable: Report on best practices for ensuring equivalence of access and choice for disabled end-users**

Public consultation: Yes

Adoption of draft Report for public consultation at Plenary 2 2022

Adoption of final Report at Plenary 4 2022 for publication

### 3.3. Workshop on the the digital divide

While the digital divide is certainly not a new problem, and policy makers and development agencies have long worked to close it (or to reduce it), the Covid-19 pandemic has illustrated that the digital divide continues to be a key factor of social exclusion, widening pre-existing inequalities. For this reason, bridging digital gaps has become one of the top political priorities to achieve a fair economic recovery for all.

In 2021, BEREC examined<sup>28</sup> the effect of the pandemic on the telecommunications sector and drew lessons in order to increase the preparedness for future similar events and develop the long-term readiness of networks for crisis scenarios. Furthermore, BEREC issued an external study<sup>29</sup> that proposes several recommendations which could help NRAs in designing the right conditions to improve digital inclusion for all citizens, including the most vulnerable citizens in the digital ecosystem who lack sufficient access to broadband networks and digital services, become full participants in the digital age.

In order to contribute further to the discussion on the digital divide, BEREC will hold an internal workshop at Heads level and exchange views regarding the implementation of the recommendation and best practices on closing the digital divide.

The discussion at the workshop will focus on the social aspects of the digital divide (lack of skills, lack of affordability) and not only on the “classic” coverage/connectivity aspects.

The workshop shall take into account the disparity of competences of the NRAs on these issues and BEREC will therefore also collaborate with relevant stakeholders where relevant.

**Deliverable: Head’s Workshop on digital divide**

Public consultation: No

Adoption of summary Report at Plenary 3 2022 for publication

<sup>28</sup> Add reference to the BEREC Report (after publication foreseen in December).

<sup>29</sup> Add reference after publication.

### 3.4. Report on Comparison Tools and Accreditation

The aim of this project is to offer insights on the comparison tools which enable consumers to compare and evaluate IAS and publicly available NB-ICS as set out in Article 103 of the EECC. The project may also look whether comparison tools allow for comparison of bundles of AIS or publicly available number-based interpersonal communications services with other electronic communication services.

The Report will also capture details of the certification processes within each Member State that is, upon request, available to providers of a comparison tool that meet the requirements set out in Article 103 of the EECC.

While a number of Member States have already put in place comparison tools and/or certification processes, BEREC has never collated information on this issue since the requirement that end-users have access free of charge to at least one independent comparison tool which enables them to compare and evaluate different offers in a new requirement set out in EECC. Therefore this exercise has not been undertaken previously by BEREC.

<b>Deliverable: Report on Comparison Tools and Accreditation</b>
Public consultation: Yes
Adoption of draft Report for public consultation at Plenary 3 2022
Adoption of final Report at Plenary 1 2023 for publication

### 3.5. BEREC Report on Member States' best practices to support the defining of adequate broadband internet access service (IAS)

Article 84 (1) of the EECC provides that Member States shall ensure that all consumers in their territories have access at an affordable price, in light of specific national conditions, to an adequate broadband internet access service and to voice communications services, which are available at the quality specified in their territories, including the underlying connection, at a fixed location.

Article 84 (3) of the EECC further provides that each Member State shall, in light of national conditions and the minimum bandwidth enjoyed by the majority of consumers within the territory of that Member State, and taking into account the BEREC Report on best practices, define the broadband internet access service for the purposes of paragraph 1 with a view to ensuring the bandwidth necessary for social and economic participation in society. The adequate broadband internet access service shall be capable of delivering the bandwidth necessary for supporting at least the minimum set of services set out in Annex V.

In 2020 BEREC published the first Report on Member States' Best Practices to support the defining of Adequate Broadband.<sup>30</sup> The review of the best practice Report shall seek to gather and analyse relevant information including:

- The continued suitability of the evaluation criteria consulted on in the 'BEREC Report on Member States' best practices to support the defining of adequate broadband internet access service'.<sup>31</sup>
- Relevant experiences to support Member States in defining Adequate Broadband.

The work will commence in Q4 2022 to ensure there is sufficient time to gather up to date information.

**Deliverable: BEREC Report on Member States' best practices to support the defining of adequate broadband internet access service (IAS)**

Public consultation: Yes

Adoption of draft Report for public consultation at Plenary 3 2023

Adoption of final Report at Plenary 1 2024 for publication

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<sup>30</sup> See BoR (20) 99.

<sup>31</sup> See BoR (19) 260.

## 4. Cooperation with EU institutions and institutional groups

### 4.1. Implementation of BEREC's Medium Term Strategy for relations with other institutions and international cooperation

BEREC wants to continue to explore ways to have closer collaboration and dialogue with other European institutions, by joining forces on certain topics in which synergies can be obtained with other European regulatory cooperation platforms and bodies operating both in adjacent and different economic sectors, as well as regulatory networks with similar activities in the field of electronic communications outside the EU.

The involvement of multiple institutions – early on in the process – will be increasingly valuable and necessary, especially in the context of regulatory issues with a horizontal impact. In addition, while monitoring the sector, it remains crucial to oversee the big picture, which implies expanding our knowledge to other terrains.

In 2021, BEREC has adopted a medium-term strategy for relations in which BEREC provides an overview of BEREC's priorities regarding institutional cooperation, with a focus on connectivity/5G and platform regulation. The strategy also strives for a futureproof, qualitative and overarching way of investigating upcoming issues and challenges.

Similarly BEREC has developed a medium-term strategy for international cooperation, taking into account the multi-annual Working Programme and related to its international activities, in which it evaluates its current international commitments and which spells out what type of cooperation and engagement could be envisaged with each of its international partners, in a transparent manner.

The increasing convergence of issues faced in the field of electronic communications between the EU and the rest of the world shows the global nature of these services and means that policies, legislation and regulation must be seen from a more global perspective. BEREC benefits from the cooperation with NRAs and with other international regulatory networks, policymakers and institutions involved in communications matters based beyond the EU.

In 2022 BEREC will implement these strategies. A team will be set up to support the chair and incoming chair in maintaining an active relation with external bodies and develop a calendar of international events to proactively plan and assign the necessary resources for the year 2022 and by the end of the year, an indicative calendar of events for the following year.

<p><b>Deliverable: Calendar of International Events for the year 2022</b></p> <p>Public consultation: No</p> <p>Adoption of Calendar of International Events for the year 2022 at Plenary 1 2022 for publication</p> <p><b>Deliverable: Indicative Calendar of International Events for the year 2023</b></p> <p>Public consultation: No</p>
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Adoption of Indicative Calendar of International Events for the year 2023 at Plenary 4 2022 for publication

## 5. BEREC's other tasks

### 5.1. BEREC ad hoc work

#### 5.1.1. Ad hoc input to the EU/NRAs

In addition to input to the European Commission, as required under the EECC (for example the Opinion on the review of the Access Recommendations), as well as Opinions on other draft Recommendations in line with its duties according to the 2018 BEREC Regulation (input to the European Commission regarding the evaluation and potential review of the EU State Aid Guidelines), BEREC provides ad hoc input, on request, to the EU institutions (the European Commission, European Parliament and Council of the European Union) and the NRAs, particularly during the implementation of the EECC and other potential legislative initiatives.

#### 5.1.2. Update of criterion four of the BEREC Guidelines on very high capacity networks

The European Electronic Communications Code (EECC, Art. 3.2a) has amongst others the general objective to “promote connectivity and access to, and take-up of, very high capacity networks”. The EECC (Art. 82) provides that “BEREC shall, after consulting stakeholders and in close cooperation with the Commission, issue guidelines on the criteria a network has to fulfil in order to be considered a very high capacity network, in particular in terms of down- and uplink bandwidth, resilience, error-related parameters, and latency and its variation.” BEREC approved the BEREC Guidelines on very high capacity networks at Plenary 3 2020 (BoR (20) 165).

The BEREC Guidelines on very high capacity networks<sup>32</sup> define four criteria and any network that meets at least one of these criteria is considered to be a very high capacity network. Criterion 4 provides that any network providing a wireless connection which is capable of delivering, under usual peak-time conditions, services to end-users with a certain quality of service (performance thresholds 2) is considered to be a very high capacity network. Criterion 4 is based on data collected from mobile network operators on LTE Advanced (4G).

The BEREC Guidelines on very high capacity networks (para. 25) state „since it was not yet possible to take 5G fully into account for the release of these Guidelines, as it has not yet reached mature deployment and significant penetration, BEREC intends to update criterion 4 (performance thresholds for wireless networks) as soon as possible and not later than 2023.” The objective of this project is to update criterion 4 based on data collected from mobile network operators on 5G.

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<sup>32</sup> See BoR (20) 165, para 18.

**Deliverable: Update of criterion four of the BEREC Guidelines on very high capacity networks**

Public consultation: Yes

Adoption of draft Guidelines for public consultation at Plenary 1 2023

Adoption of the final Guidelines at Plenary 3 2023 for publication

**5.1.3. BEREC Input to the European Commission regarding the evaluation and potential review of the EU State Aid Guidelines (carry-over)**

In June 2020, the European Commission launched an evaluation of the EU State Aid Guidelines and in July 2021 it published a staff working document on this evaluation.

In view of the very rapid technological developments in the electronic communications sector, and challenges that these entail, it has become evident that it is expedient to undertake an evaluation. The evaluation assesses in particular the extent to which the State aid rules for Broadband are still fit for purpose, in view of their objectives and of the developments in the market, in order to support the new political objectives of the European Commission, including A Europe fit for the digital age and the European Green Deal.

The findings will serve as a basis for drawing policy conclusions on how well State Aid rules for the deployment of broadband networks have been performing and whether there is a need to make any changes.

BEREC's input will be based on previous work in particular on the BEREC Report (BoR (17) 246) Analysis of individual NRAs' role around access conditions to State aid funded infrastructure, published in 2017, which examines how access conditions based on the EU State Aid Guidelines have been implemented in different Member States focusing on the role of the NRAs.

BEREC has already responded to the European Commission's targeted public consultation on the evaluation of the EU State Aid Guidelines at the end of 2020.<sup>33</sup> BEREC's further input will again focus on the issues requested by the European Commission that are of particular relevance for BEREC and the NRAs (e.g. access conditions). The deliverables will be adopted depending on the process finally chosen and followed by the European Commission.

**Deliverable: BEREC Input to the European Commission regarding the evaluation and potential review of the EU State Aid Guidelines**

Public consultation: No

Adoption of final deliverable: As required

<sup>33</sup> See BoR (20) 226.

#### 5.1.4. BEREC Opinion on the review of the Access Recommendations (carry-over)

In July 2020, the European Commission started a consultation on the review of the Commission's Access Recommendations, namely the NGA Recommendation of 2010 and the Recommendation on non-discrimination obligations and costing methodologies of 2013. The review of the two 'Access Recommendations' includes updating them to the EECC provisions as well as with the 2020 Recommendation on relevant markets susceptible to ex ante regulation.<sup>34</sup>

In 2020, BEREC gave a response to the targeted consultation of the European Commission on both the draft NGA Recommendation and the draft NDCM Recommendation. Furthermore, BEREC gave guidance on the Economic Replicability Test (ERT) and reporting on the application of the recommendations on the costing methodologies for access to legacy infrastructures with its yearly Regulatory Accounting in Practice Reports (see above).

For 2021, the European Commission has announced its intention to ask BEREC for an Opinion on a draft text of an access recommendation. The draft Access Recommendation is expected to be provided by the Commission in the second half of 2021.

<p><b>Deliverable: BEREC Opinion on the review of the Access recommendations</b></p> <p>Public consultation: No</p> <p>Adoption of final BEREC Opinion at Plenary 1 2022 for publication</p>
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#### 5.1.5. Peer review process

BEREC and the RSPG agreed on working arrangements<sup>35</sup> on 13 June 2019. These set out the cooperation methods for the purpose of BEREC's participation in the Peer Review Forum in accordance with the requirements of Article 35 of the EECC. The cooperation methods are as follows:

- to use the Peer Review Forum as an instrument of peer learning;
- to promote the benefits of the Peer Review Forum, as it convenes national NRAs and other Competent Authorities with expertise on comparative or competitive selection procedures in the electronic communications' regulatory framework;
- to cooperate on the implementation of the Peer Review Forum;
- to appoint 'liaison officers' in both BEREC and the RSPG to strengthen the relationship between the two bodies and to facilitate the implementation of this arrangement. The Wireless Network Evolution Co-chairs are BEREC's 'liaison officers'.

BEREC's participation in the Peer Review Forum contributes to the objective of promoting full connectivity by enabling relevant exchanges with the RSPG on the market-shaping aspects

<sup>34</sup> Rec. (EU) 2020/2245.

<sup>35</sup> [https://bereg.europa.eu/eng/document\\_register/subject\\_matter/bereg/others/8602-working-arrangement-between-bereg-and-rspg](https://bereg.europa.eu/eng/document_register/subject_matter/bereg/others/8602-working-arrangement-between-bereg-and-rspg)

of spectrum assignment. This activity is therefore aligned with the first Strategic Priority set out in BEREC's Strategy 2021-2025.

The Peer Review Forum is convened by the RSPG only when required.<sup>36</sup>

#### **5.1.6. Ad hoc work relating to network security and cybersecurity**

Taking into consideration the Commission Recommendation on the Cybersecurity of 5G networks, BEREC has been mandated to assist the NIS Cooperation Group and ENISA in their work towards producing a toolbox for 5G Cybersecurity. After consulting with the NIS Cooperation Group, ENISA and the Commission, BEREC set up a Working Group (WG) on 5G Cybersecurity.

In order to assist the NIS Cooperation Group in supporting the implementation of the 5G Toolbox by Member States, BEREC is asked by the dedicated NIS Work Stream to support the evaluation of SM05 and SM06 of the 5G Toolbox implementation, which relate to the diversification of 5G suppliers and the resilience of networks.

BEREC supports the view that EU-level actions should continue to be taken to support and complement the Toolbox objectives and to fully integrate them into relevant Union and Commission policies, notably following up on the actions announced by the Commission in its Communication on the Toolbox of 29 January 2020.

As stated in the "EU's Cybersecurity Strategy for the Digital Decade", published on 16 December 2020, the Commission identified that there is a need for intensifying exchange of information on cybersecurity of 5G networks, including gathering possible best practices about the 'Supply chain security and resilience, notably following up on the survey conducted by BEREC about SM05-SM06'.

In the context of the further activities that will take place at EU level and in Member States concerning the 5G Toolbox implementation, BEREC is planning further cooperation with the NIS Cooperation Group Work Stream on 5G to elaborate further on the open issues identified on SM05 and SM06 implementation. Such further input could focus on one or several of the following aspects, and could take the form of an internal Report/survey if necessary or of other types of activities, such as for instance facilitating engagement with industry stakeholders through joint workshops with the NIS Work Stream.

Activities could include :

- Follow the legislation process on NIS – 2 Directive and CER Directive;
- Establish a greater understanding of the potential gains and limitations of Open RAN, virtualisation functions, MEC<sup>37</sup>, cloud providers

<sup>36</sup> See the Rules of Procedures for the Radio Spectrum Policy Group (RSPG) <https://rspg-spectrum.eu>

<sup>37</sup> Mobile edge computing



- Indicators related to multivendor strategies and national resilience(SM 05 and SM 06). Support ENISA in the development EU's cybersecurity certification scheme for 5G networks<sup>38</sup>

The method(s) for conducting this work (e.g. report, workshop, webinar) will be selected based on its final agreed scope and content and it will aim at ensuring efficiency in the working process. Considering the nature of the topic not all the work may qualify for publication. In that case a public version of the report or a public executive summary will be provided.

**Deliverable: BEREC Internal Report on multivendor strategies and national resilience**

Public consultation: No

Adoption of final Report at Plenary 4 2022

Other deliverable: BEREC ad-hoc Reports

Adoption of final Report as requested

## 5.2. Other tasks under EU legislation

BEREC carries out a large number of mandatory tasks under EU legislation. These tasks are stemming from the European Electronic Communications Code, the Roaming Regulation and tasks dealing with intra-EEA communications. They are described below:

### 5.2.1. BEREC Opinion on Article 123

BEREC is tasked with publishing an opinion every three years or more frequently if at least two Member States make a reasoned request. If such requests are done an opinion will be drafted in 2022.

**Deliverable: BEREC Opinion on Article 123**

Public consultation: No

Adoption of BEREC Opinion: as requested

### 5.2.2. Delegated act(s) concerning emergency communications

Pursuant to Article 109, paragraph 8 EECC, BEREC shall be consulted by the Commission before this latter adopts delegated acts supplementing paragraphs 2, 5 and 6 of the mentioned Article. The first of such Commission's delegated acts, aimed at ensuring effective access to emergency services through emergency communications to the single European emergency number "112", shall be adopted by 21 December 2022.

<sup>38</sup> <https://ec.europa.eu/digital-single-market/en/news/cybersecurity-5g-networks-commission-requests-eu-cybersecurity-agency-develop-certification>  
[https://www.enisa.europa.eu/news/enisa-news/securing\\_eu\\_vision\\_on\\_5g\\_cybersecurity\\_certification](https://www.enisa.europa.eu/news/enisa-news/securing_eu_vision_on_5g_cybersecurity_certification)

Subject to the Commission's choices as to the timing and contents of the relevant act(s), upon the Commission's request, BEREC shall provide an Opinion on the draft delegated act(s) put forward by the Commission.

**Deliverable: BEREC Opinion to the European Commission pursuant to art. 109.8 EEC**

Public consultation: No

Adoption of BEREC Opinion: as requested

### 5.2.3. International roaming benchmark data Report

According to the current Roaming Regulation, BEREC will report on technical matters within its competence, in particular on (among others) the evolution of pricing and consumer patterns both for domestic and roaming services, the evolution of actual wholesale roaming rates for unbalanced traffic, the relationship between retail prices, and wholesale charges and wholesale costs for roaming services.

BEREC, and formerly ERG, has been drafting these kinds of reports since the entry into force of the Roaming Regulation. The data to be collected by BEREC shall be notified to the European Commission at least twice per year. On the basis of the collected data, BEREC shall also report regularly on the evolution of pricing and consumption patterns in the Member States, both for domestic and roaming services, and on the evolution of actual wholesale roaming rates for balanced and unbalanced traffic. BEREC shall assess how closely those elements relate to each other

The proposed revision of the regulation foresees the production of one BEREC Report including the information that is currently reported in the context of the two BEREC benchmark Reports and the BEREC transparency and comparability Report as well as additional data to be collected. BEREC considers that during 2022 a benchmark report should be published in March according to the provisions of the current regulation.

Data collection for the 28th Report will be launched already at the end of September 2021. The data will be submitted by NRAs to the BEREC Office by mid-November. After analysing the data, a Report will be drafted and shared within BEREC in January 2022, subject to adoption and publication in Plenary 1 2022. The next data collection including all the requirements of the new roaming provisions will be launched at the end of September 2022 with a view to adopt the first comprehensive yearly Report in P1 2023.

The BEREC Benchmark Report will include an Annex reporting on the evolution of roaming prices and volumes for the Western Balkan region.

**Deliverable: 28<sup>th</sup> BEREC international Roaming Benchmark Data Report**

Public consultation: No

Adoption of final Report at Plenary 1 2022 for publication

#### **5.2.4. Inputs to any legislative proposals of the European Commission on roaming**

In 2020, the European Commission has published its proposal on the review of the roaming regulation. The European Council and Parliament have started discussing the proposed provisions and later this year the legislative negotiations are expected to commence with a view to adopting the new regulation during the first half of 2022.

BEREC will continue to actively participate in this process and provide its inputs and Opinions. The deliverables will be adapted according to the process and timing chosen by the legislators. BEREC provided its Opinion and inputs to the European Commission in 2019 and 2020 as well as published its Opinion on the proposal of the Commission Opinion in 2021. These will be a good basis for the ongoing discussions with the legislators.

#### **5.2.5. Intra-EU communications Benchmark Report**

According to Article 5a(6) of the TSM Regulation as amended by Regulation (EU) 2018/1971, NRAs shall monitor the price developments of regulated intra-EU communications services. For this purpose, BEREC provides a template to contribute to harmonised data collection in the EU/EEA. NRAs are therefore collecting data from both fixed and mobile operators on a yearly basis and submit the data to BEREC.

In 2022, BEREC is planning to publish the 3rd Benchmark Report (including data from 2021) on the findings of the data collection. The data collection for this Report will be launched in March with a deadline for NRAs to forward the data to the BEREC office in mid-May. After analysing the data, a Report will be drafted and shared with the full WG in July/August 2022, subject to adoption and publication in Plenary 3 2022. Using the collected data, BEREC will also publish an annex to the Report, with the updated BEREC benchmarking for the derogation assessments.

<p><b>Deliverable: 3<sup>rd</sup> Intra-EU communications Benchmark Report</b></p> <p>Public consultation: No</p> <p>Adoption of final Report at Plenary 3 2022 for publication</p>
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#### **5.2.6. Update of BEREC retail Guidelines on the Roaming Regulation**

The BEREC retail Guidelines on the Roaming Regulation<sup>39</sup> need to be revised taking into account the new transparency and QoS provisions which are still under discussion within European Commission, the European Parliament and the Council.

In July 2022, the recast of the roaming regulation is expected to get into force. In order to have a harmonised implementation of the new provisions and given the expected number of questions concerning the implementation of the new retail measures, BEREC needs to update its retail roaming guidelines. BEREC considers that a consultation should take place as soon

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<sup>39</sup> See BoR (17) 56.

as the new provisions are finalised with a view to publish the final guidelines as soon as possible.

**Deliverable: BEREC retail Guidelines on the Roaming Regulation**

Public consultation: Yes

Adoption of draft Guidelines for public consultation at Plenary 2 2022

Adoption of the final Guidelines at Plenary 4 2022 for publication

### 5.2.7. Update of BEREC wholesale Guidelines on the Roaming Regulation

The BEREC wholesale Guidelines on the Roaming Regulation<sup>40</sup> need to be revised taking into account the new provisions which are still under discussion within European Commission / European Parliament / the Council.

In 2022, the new roaming regulation is expected to enter into force. In order to have a harmonised implementation of the new provisions and given the expected number of questions concerning the implementation of the new wholesale measures, BEREC needs to update its wholesale roaming guidelines. The draft regulation foresees that within 6 months after the adoption of this Regulation, and in order to contribute to the consistent application of this Article, BEREC shall, after consulting stakeholders and in close cooperation with the Commission, update the guidelines for wholesale roaming access laid down in accordance with Article 3(8) of Regulation (EU) No 531/2012.

**Deliverable: BEREC wholesale Guidelines on the Roaming Regulation**

Public consultation: Yes

Adoption of draft Guidelines for public consultation at Plenary 2 2022

Adoption of the final Guidelines at Plenary 4 2022 for publication

### 5.2.8. VAS database

According to article 17 of the Commission's legislative proposal for a new Roaming Regulation, by 31 December 2023, BEREC shall establish and maintain a single public Union-wide database of value added services numbering ranges used in each Member State to be made accessible for national regulatory authorities and operators.

To this end, BEREC shall assess the features of its existing list of VAS/premium rate numbers in the EU - which was set up earlier this year to help address issues relating to IR-related fraud – and evaluate the need to extend it in order to cover all VAS numbers, or to build a new one.

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<sup>40</sup> See BoR (17) 114.

**Deliverable: VAS database**

Public consultation: No

Adoption of the Database. Planning dependent on legislative procedure.

**5.2.9. Emergency communications database**

According to Article 16 of the Commission's proposed new Roaming Regulation, roaming providers shall ensure that their roaming customers are kept adequately informed on the means of access to emergency services in the visited Member State, covering both access via free of charge calls to the single European emergency number "112" and via alternative means of access that might be mandated in the visited Member State.

In order to ensure the implementation of this provision, BEREC shall create and publish a database of means for accessing emergency services in the visited Member State, including the call.

**Deliverable: Emergency database**

Public consultation: No

Adoption of the final Database / List of means of access to emergency services. Planning dependent on legislative procedure.

**5.3. Monitoring quality, efficiency and sustainability****5.3.1. Implementation of the EECC and the BEREC Regulation**

The new Code and the BEREC Regulation entered into force at the end of 2018. Most Member States are still completing national transposition processes though.

BEREC shall therefore continue providing a forum to exchange views on the national implementation of the new acquis, so to ensure a common understanding of the new rules on all the areas covered by the Code and throughout the EU.

In line with BEREC's responsibility for monitoring the functioning of the EECC, one additional element would be to monitor the impact and effectiveness of the newly inserted provisions, with a view to collecting enough quantitative and qualitative data for future EECC reviews (as required under Articles 122-123).

BEREC will continue providing to NRAs the chance to continuously exchange views on the national transposition solutions of the Code. BEREC will also remain available to provide any input upon request by the EU Institutions and the NRAs concerning the common BEREC understanding of the provisions in the Code and the relevant national transposition choices.

BEREC will furthermore organise a public workshop to focus on key matters covered by the Code and exchange views with all interested stakeholders on regulation of these issues under the Code, novelties compared to the previous regime and selected national transposition choices.

**Deliverable: Ad hoc input to the EU Institutions and NRAs on the implementation of the EECC and the BEREC Regulation**

Adoption of final deliverable: As required

Other deliverable: workshop on the current state of play regarding the implementation of the EECC and how it is developing in the Member States

Adoption of the summary Report of the workshop at Plenary 4 2022

### **5.3.2. Developing BEREC’s basic knowledge about the different aspects of sustainability in the digital sector (carry-over)**

As stated in the BEREC Strategy ‘BEREC will engage in working on sustainability considering the ICT-related parts of the upcoming Green Deal and the Agenda 2030 targets to identify the sustainable development goals that could be relevant for BEREC. In addition, it will assess how to contribute to more sustainability by adding an environmental focus to its workstreams and the running of BEREC as an organisation, taking into account the objectives of the European Commission to be proposed in the Green Deal. BEREC could contribute to the assessment of the above-mentioned impact as well as developing an understanding of how to reduce the carbon footprint, a topic which is gaining importance in the digital sector. End-users could also be empowered by raising awareness of the environmental impact of electronic networks’.<sup>41</sup>

BEREC considers the wider remit of BEREC’s/NRAs’ work within the digital sector, in particular regarding electronic communications networks. In this regard, the BEREC 2021 – 2025 strategy states that BEREC could develop “an understanding of how to reduce the carbon footprint, a topic which is gaining importance in the digital sector”. This is particularly relevant given the emphasis that the European Commission has recently introduced new proposals to promote sustainability within the digital sector, in the context of the Green Deal - the “Fit for 55” package – and of the digital strategy of the Commission.

The project will provide BEREC with a preliminary knowledge base that could usefully be shared amongst NRAs, thus enabling BEREC to position itself as a trusted third party for the EU institutions in upcoming discussions on this subject.

**Deliverable: BEREC Report assessing BEREC’s contribution to limiting the impact of electronic communications networks on the environment**

Public consultation: Yes

Adoption of draft Report for public consultation at Plenary 1 2022

<sup>41</sup> BEREC Strategy 2021-2025, BoR (20) 108, p. 7.

Adoption of final Report at Plenary 2 2022

**5.3.3. Indicators to measure environmental impact of ECNs**

BEREC will consider the indicators that might help evaluate the environmental sustainability of electronic communications networks and initiatives from electronic communication operators.

BEREC should be ready to take part in the process of identification and definition of indicators and setting a basic framework for a, if possible, common, and harmonised EU assessment methodology for the environmental sustainability of ECNs/ECSs. Related issue is the role which NRAs could play in relation to these indicators, i.e. which indicators could influence their responsibilities or regulatory practice.

In 2022, BEREC will focus on activities of the EC, be ready to contribute with BEREC opinions or other means of consulting procedures. Based on the 2021 work (bilateral meetings and external study in particular), the *ad hoc* working group will take account of relevant players' findings and ongoing studies regarding ECNs sustainability when working on the subject. Furthermore, the group will launch a call-for-inputs from external stakeholders (operators, service providers, end-user associations, environmental organizations, etc.) to help identify, which indicators they deem feasible and useful for the purpose of setting an assessment methodology, firstly in the form of a technical workshop. Another focus should be given to the issues of circular economy, especially in relation to life cycle of devices and equipment which some NRAs have already begun to study. The results of stakeholders' inputs and the group analysis of these issues will be presented in a preliminary report that could then be use for future BEREC's work and opinions.

**Deliverable: Workshop and a report**

Public consultation: Yes

Workshop and call-for-input in Q3/Q4 2022

Adoption of the draft Report at Plenary 1 2023 for public consultation

Adoption of final Report at Plenary 2 2023 for publication

**5.3.4. Study on NRAs' institutional features and relevant BEREC evaluations**

BEREC will commission a study from an external consultant in order to deliver an independent and factual survey into national transposition solutions of the EECC, with a view to snapping a descriptive overview of current national institutional settings stemming from the latest sectoral review.

The study shall also cover a review of the literature addressing Regulators' independence indicators in different market sectors, as well as the case law so far concerning art. 5 EECC violations.



BEREC will examine, taking stock of the evidence provided by the study, the national transposition solutions will draw relevant conclusions in terms of BEREC capacity to carry out its institutional tasks throughout the remit designed in the EECC and BEREC Regulation.

**Deliverable: BEREC Study on NRAs' institutional features and relevant BEREC evaluations**

Public consultation: No

Adoption of final Report at Plenary 3 or 4 2022 for publication

### 5.3.5. Article 32/33 Phase II process

BEREC will evaluate the applicability of the BEREC's Guidelines for the elaboration of opinions in Phase II cases to assess whether an update is necessary.

Since 2014 BEREC has undertaken an annual analysis of Articles 32/33 EECC Phase II cases (former Article 7/7a), aimed at gaining a better understanding of both the procedural and substantive aspects of these cases and at informing the prospective review of the BEREC Common Positions. In 2015, a comprehensive database of Phase II cases was developed, including the main elements of the cases, in particular the reasoning put forward by the European Commission, the analyses in the BEREC opinions, and the final outcomes of the cases. In the context of the EECC, in 2022 BEREC will conduct an evaluation of the applicability of BEREC's Guidelines for the elaboration of opinions in Phase II cases and will consider whether an update is necessary.

On 31 March 2021 the Commission has adopted Recommendation (EU) 2021/554 on the form, content, time limits and level of detail to be given in notifications under the procedures set in Article 32 of Directive (EU) 2018/1972 of the European Parliament and of the Council establishing the European Electronic Communications Code (hereinafter: Procedural Recommendation). This may result in a corresponding alignment of the BEREC Internal Guidelines in 2022.

BEREC will continue to add new Phase II cases to this database, as and when they arise. The objective is to make the database accessible to BEREC members, in particular experts of Phase II cases, both for referencing a particular case and for analysing key themes among cases over time.

The Project Team will focus on changes introduced in Article 32/33 of the EECC and on the new Procedural Recommendation and their implications for the 'Internal Guidelines for the elaboration of BEREC Opinions in Article 7 and 7a Phase II cases'.<sup>42</sup>

As a result of this analysis an internal Report would be delivered with possible revision of the BEREC Guidelines in 2022.

**Deliverable: Internal Report Q2 2022**

<sup>42</sup> See BoR (16) 225.



Public consultation: No

Adoption of final Internal Report at Plenary 2 2022

Other deliverable if applicable: Internal guidelines

### **5.3.6. Internal workshop on relevance of maintaining BEREC Common Positions on best practice remedies (WLA, WBA, WLL)**

BEREC issued Common Positions (CPs) on best practice remedies for WLA, WBA and WLL markets in 2012. BEREC monitored the implementation of the CPs<sup>43</sup> and published in 2018 a Report on the assessment for a need to review the 3 broadband CPs of 2012.<sup>44</sup> Since 2012 significant changes came and influenced both the legal and market environment (the EECC, new relevant markets recommendation, new access recommendation (in 2013), several BEREC Guidelines etc.). These new circumstances require to reconsider and assess the relevance of maintaining BEREC Common Positions on best practice remedies (WLA, WBA, WLL) in their current shape and scope. The work will take the 2018 review Report as a starting point.

The project team will focus on changes introduced in the regulatory framework since 2012 as well as ongoing works on the revision of Access Recommendations.

As a result of this initial analysis an internal workshop will be run and a summary Report will be delivered with conclusions on the relevance of maintaining BEREC Common Positions on best practice remedies (WLA, WBA, WLL). The workshop will also include sharing of experience with the current application of the EECC.

**Deliverable: Internal workshop on relevance of maintaining BEREC Common Positions on best practice remedies (WLA, WBA, WLL)**

Public consultation: No

Adoption of internal Summary Report at Plenary 4 2022

Other Deliverable: Internal Workshop, to be held at XXX

### **5.3.7. Report on Regulatory Accounting in Practice**

The Regulatory Accounting in Practice Report 2022 will provide an up-to-date factual overview of the regulatory accounting frameworks used in Europe and an assessment of the level of consistency achieved by NRAs. The Report is prepared annually and updates the previous versions published since 2005. In 2021, emphasis will continue to be placed on consistency in regulatory accounting with respect to key access products (e.g. fibre) and will seek to maintain the detail and the in-depth analysis of the methods covered to identify commonalities and reasons for differences. Given the applicability of the Commission's WACC Notice of 2019 (see next WP item) it will be checked in how far the Report will continue to collect data on the

<sup>43</sup> See BoR (14) 171, BoR (15) 199, BoR (16) 219).

<sup>44</sup> See BoR (18) 24.

methodology and input parameters used to calculate the rate of return on capital employed, and look into the impact of both on the result.

The 2022 RA Report will take into account that the EECC added new (e.g. Art. 61.3 and Art. 76) and modified existing remedies and be updated accordingly, but aiming for consistency over time. The 2022 RA Report will also take into account the new list of relevant markets susceptible to ex ante regulation acc. to Commission Recommendation (EU) 2020/2245.

The 2022 Report will develop a deeper analysis that concentrates on the following key wholesale markets: Wholesale Local Access (Market 3a/2014, now Market 1/2020), Wholesale High Quality Access (Market 4/2014, now Market 2/2020) and Wholesale Central Access (Market 3b/2014, no longer in the list of relevant markets susceptible to ex ante regulation). For those markets, it will contain a comparison of the most popular combinations of cost base and cost allocation methodologies.

As previously the 2022 Report will contain a chapter explaining the motivations of NRAs for choosing a particular form of the price control remedy (e.g. cost-orientation, ERT, others etc.) for different wholesale access products (in particular FTTP and FTTC network elements). The 2022 Report aims to analyse the choices in more depth.

BEREC will evaluate how the 2022 Report will provide evidence for WACC calculation practices among NRAs given the applicability of the WACC Notice. Depending on the result of the check, the collection and analysis of data regarding the current calculation of the cost of capital (WACC) will be updated. It will include data regarding if and how NRAs account for the higher risk of investing in very high capacity networks (for example through the application of a risk premium which is added to the calculated WACC).

<p><b>Deliverable: Regulatory Accounting in practice Report 2022</b></p> <p>Public consultation: No</p> <p>Adoption of final Report at Plenary 4 2022 for publication</p>
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### **5.3.8. Weighted Average Cost of Capital (WACC) parameters' calculation according to the European Commission Notice**

Following the European Commission's Notice on the WACC,<sup>45</sup> BEREC is tasked with the calculation of various parameters of the WACC formula, according to the methodology laid down in the EU WACC Notice.

In 2022 (and the subsequent years), additionally BEREC will continue to calculate the WACC parameters as started in 2020 according to the methodology laid down in the WACC Notice of 2019. These WACC parameters will be calculated at the beginning of each year and published in a separate report to allow NRAs to base their national WACC decisions on this up-to-date information. BEREC will also select the companies eligible for the peer group.

<p><b>Deliverable: BEREC Report on WACC parameters 2022</b></p>
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<sup>45</sup> See <https://ec.europa.eu/digital-single-market/en/news/commission-publishes-notice-calculation-cost-capital-legacy-infrastructure>

Public consultation: No  
Adoption at Plenary 2 2022 for publication

### **5.3.9. Report on the monitoring of the termination rates for mobile and fixed voice calls**

This Report will reflect on the requirements of Article 75 of the EECC 3rd paragraph, which states that NRAs shall annually report to the EC and to BEREC with regard to the application of the Article's provisions, more specifically on the implementation of the Delegated Regulation (EU) 2021/654 setting a single maximum Union-wide voice termination rate and a single maximum Union-wide fixed voice termination rate.

The Report will build on the prior experience of BEREC in preparing BEREC's opinion on the Draft Delegated Act<sup>46</sup> and in collecting a series of important data concerning termination services (both quantitative and qualitative) and informing of the underlying evolutions through the publication of the biannual Reports on the Termination Rates at the European level. As an embedded part of this endeavour, BEREC will also reflect on the future of the Termination Rates Reports.

At the same time, whilst at the time being, there is no explicit requirement for issuing a public Report on the reporting obligations, BEREC would like to reflect on the opportunity of having some information and/or conclusions published at a later stage in the form of a Report, in order to enhance transparency and convey of important information to the public and stakeholders. This possibility and the format and timing of this publication will also be discussed within BEREC.

**Deliverable: Report on the monitoring of the termination rates for mobile and fixed voice calls**

Public consultation: No  
Adoption of final Report at Plenary 2 for publication

### **5.3.10. Report on the business and revenue models of NI-ICS and update on NRAs data collection practices on NI-ICS**

This workstream will build on the work done by BEREC on OTT services, in particular on the 2021 BEREC Report on harmonised definitions for indicators regarding OTT services, relevant to the electronic communications. This Report will aim at completing previous BEREC work, for example by reviewing the business models of NI-ICS providers in order to better understand the possibilities of defining certain indicators and will also recap the experiences of NRAs who collect NI-ICS data.

The Report is also related to other BEREC workstreams, in particular all the reports and ongoing work which touch on the levels of the internet ecosystem, on the competitive

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<sup>46</sup> See BoR (20) 190.

interaction between the traditional electronic communication services and the NI-ICS, particularly where they develop a general understanding on business models.

**Deliverable: Report on the business and revenue models of NI-ICS and update on NRAs data collection practices on NI-ICS**

Public consultation: No

Adoption of final Report: Plenary 4 2022

Other deliverable: Workshop – Q2 2022

## 6. Stakeholder engagement

BEREC remains committed to continuously improving its interaction with all stakeholders to ensure that its output stays relevant. BEREC aims to ensure that its work processes remain transparent and that it reaches the relevant audience. Stakeholders will be involved both at an early stage and later when the work is more mature. The BEREC Work Programme 2022 includes the following activities for achieving these objectives.

In a context of rising concerns about technology in general, BEREC will reinforce its dialogue with civil society so as to ensure that legitimate apprehensions are dealt with accordingly. BEREC aims to maintain a high level of public trust from citizens and position itself as a trusted third party in stakeholder dialogues and in its engagement with the EU institutions. This is of particular importance for work related digital platforms and to sustainability.

### 6.1. Stakeholder Forum

The focus of the Stakeholder Forum in April 2022 will be the BEREC Work Programme for the following year (2023), and it will provide a platform for stakeholders and BEREC to engage in a dialogue about BEREC's future work. The feedback received at the Stakeholder Forum provides valuable input for BEREC's future activities and priorities that we will take into reflection in our further work.

### 6.2. BEREC Annual Reports

According to the BEREC Regulation, BEREC must provide its annual activity Report to the European Parliament, the Council of the European, the European Commission and the European Economic and Social Committee by 15 June of the year after the year reported on in the annual activity Report. BEREC must report annually on technical matters within its competence, in particular on market developments in the electronic communications sector.

BEREC will continue to publish its Annual Report on its activities and an Annual Report on developments in the sector as part of a single document. The Annual Report on BEREC activities focuses on the outcome of the work of its Working Groups and ad hoc teams based on the Work Programme, whereas the Annual Report on developments in the electronic communications sector summarises BEREC's view of the past year and provides an outlook on future developments and challenges in the sector.

### 6.3. BEREC Communications Plan 2022

In 2016, BEREC developed its first external Communications Strategy, which was afterwards complemented by annual communications plans. In the previous communications plan, BEREC decided to go further than the regular awareness-raising, by opting for a multiplier approach in which the BEREC key target audiences are informed of the potential of connectivity as one of the goals of the EECC, and in turn they are invited to share this information with their stakeholders. With the implementation of the EECC, BEREC will in 2022 continue to focus on the connectivity objective, aimed at the development of very high capacity networks allowing participation in the digital economy and society for all.

BEREC has already started a targeted communications campaign on the connectivity objective, that goes beyond regular awareness-raising. BEREC continues to develop multiple information items (such as a brochure, background information, publications on the website, a presentation kit, etc.) to be shared with key target audiences for their multiplication of this information and usage in their own communications activities.

Several communications projects will support and promote specific workstreams in the Work Programme related to this topic. The projects are usually linked to regular BEREC events, such as public debriefings and the Stakeholder Forum. They include several specific communications activities such as the organisation of events, press releases, information for the website, production of audio-visual and digital content, running social media campaigns, and keeping up media relations.

The overall framework of BEREC communications is presented in the multiannual BEREC External Communications Strategy. Every annual communications plan sets out the exact activities that BEREC is performing to deliver on these objectives. In addition to the objectives set out in the Communications Plan, BEREC will, continue to communicate around the day-to-day activities of BEREC's work, especially regarding the most relevant topics for BEREC and its members, such as BEREC's work on digital platforms, sustainability, and 5G related issues.

BEREC's Communications Plan 2022 will be finalised for internal use in December 2021 and will set out the communications activities that BEREC is committed to undertake in 2022.

### 6.4. Developing the BEREC Work Programme 2023

Having regard to BEREC's requirement to adopt the outline of the subsequent year's annual work programme by 31 January each year, and the BEREC decision to plan its work programmes on a multi-annual rather than an annual basis, there is a requirement to adhere to the guidelines 'Process for developing BEREC Work Programmes'.

In accordance with these guidelines, BEREC will develop its Work Programme for 2023 in 2022 and will start working on an outline of the WP for the following year.

<p><b>Deliverable: Work Programme 2023</b></p>
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<p>Public consultation: Yes</p>
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Adoption of draft Work Programme 2023 for public consultation at Plenary 3 2022

Adoption of final Work Programme 2023 at Plenary 4 2022 for publication

Other deliverable: Outline of the draft Work Programme 2023

To be submitted to the European Commission, the European Parliament and the Council of the European Union by 31 January 2022.

## IV. POTENTIAL BEREC WORK FOR 2023 AND BEYOND

Given the number of workstreams for BEREC, several important proposals could not be initiated. In order not to lose track of these potential workstreams, this section includes items which BEREC may include in the BEREC Work Programme 2023 and beyond, in relation to future work programmes. The list of items mentioned below is therefore informative and is not a final list. The input provided by the stakeholders on these items during the public consultation in 2021 for the Work Programme 2022 will be considered when adopting a final list. Furthermore, BEREC may consider other new workstreams for 2022.

### 7. Potential work

#### 7.1. Update of the report on third party payment charges

In 2021 BEREC published a report giving an overview of the status of third party payment charges in Member States. As in most countries the legal transposition of the EECC processes were not yet completed at the time. An update of the report could be drafted to include all Member States and thereby create a benchmark for comparisons after proper implementation of the EECC.

#### 7.2. Report on key elements of the functioning of the EECC

In line with BEREC's responsibility for monitoring the functioning of the EECC, one additional element would be to monitor the impact and effectiveness of the newly inserted provisions, with a view to collecting enough quantitative and qualitative data for future EECC reviews (as required under Articles 122-123).

#### 7.3. Experience sharing on Implementation of Guidelines

The BEREC Guidelines stemming from the EECC need to be taken into utmost account by NRAs and Competent Authorities. There could be a specific workstream for dealing with experience sharing on the implementation of Guidelines.

#### 7.4. BEREC Review of the Guidelines detailing Quality of Service Parameters

The BEREC Guidelines detailing Quality of Service Parameters committed to undertaking a review of the Guidelines commencing two years from the adoption and publication of BoR (20) 53 in March 2020. The Guidelines also stated that subsequent reviews will be determined by BEREC and will be agreed and set out in future BEREC work programmes. BEREC could start the process in 2023, three years after the adoption of the initial guidelines.



### **7.5. Internal workshop to assess the need for updating BEREC Guidelines on the minimum criteria for a reference offer (EECC related)**

In December 2019 BEREC issued the Guidelines on the minimum criteria for a reference offer. BEREC planned to conduct a workshop after application of the Guidelines to assess if there is a practical need and demand for reviewing and updating the Guidelines. A year after implementation of the Code into national laws it is a relevant time to perform this planned assessment and decide on a validity and up-to-date of the Guidelines.

### **7.6. Stock-taking on national experiences of the implementation of the EECC**

The national implementation process of the EECC was due to be finalised by the end of 2020. By 2022, NRAs would have early experiences of applying the new regulatory framework and could give assessments on how the new electronic communication framework contributes to achieving the objectives of the EECC.

The internal workshop where NRAs share their experiences, could lead to further work with the need for more detailed national assessments of the EECC, and of the application of the BEREC Guidelines. The outcome of this workshop can also be used for further work feeding into a more general monitoring of the key elements of the functioning of the EECC.

### **7.7. Report on best practices for termination of contracts and switching provider**

This proposed project builds on the work done by BEREC in 2018 resulting in the most recent report being published BoR (19) 27 that collated information from NRAs on the approaches to switching across different communications services.

Article 106 EECC provides that NRAs may establish the details and the timing of the switching and porting processes. It also sets out obligations where there is an instance of porting failure. The proposed project could focus on the national implementation of the measures provided by article 106 at both wholesale and retail level and could feed into subsequent Article 123 opinions in respect to the End User Provisions. In addition, the project would cover switching processes for bundles and share insights at national level in respect to complexity of switching for multiple services.