Body of European Regulators
for Electronic Communications

BEREC

Work programme 2017

Europe Direct is a service to help
you find answers to your questions
about the European Union.

Freephone number (*):
00 800 6 7 8 9 10 11

(*) The information given is free, as are
most calls (though some operators, phone boxes
or hotels may charge you).

More information on the European Union
is available on the Internet (http://europa.eu).

Luxembourg: Publications Office
of the European Union, 2016

© European Union, 2016

Reproduction is authorised provided
the source is acknowledged.

Photo Credits

Cover: Getty Images/John Lamb
Page 3: iStockphoto.com/Rawpixel Ltd
8: iStockphoto.com/Shironosov
11: iStockphoto.com/12521104
Back Cover: iStockphoto.com/Neustockimages

Work programme 2017

Body of European Regulators
for Electronic Communications

BEREC

TABLE OF CONTENTS

INTRODUCTION

Body of European Regulators
for Electronic Communications
BEREC

The Body of European Regulators for Electronic Communications (BEREC) was established by Regulation (EC) No 1211/2009 of the European Parliament and of the Council of 25 November 2009. According to Article 5 (4) of this Regulation, the BEREC Board of Regulators shall, after consulting interested parties, adopt the annual Work Programme of BEREC before the end of each year preceding that to which the Work Programme relates. The Board of Regulators shall transmit the annual Work Programme to the European Parliament, the Council and the European Commission as soon as it is adopted.

The BEREC Work Programme 2017, maintains BEREC's commitment to the development of regulatory best practices amongst National Regulatory Authorities (hereinafter NRAs), leading to independent, consistent, high-quality regulation of electronic communications markets, thereby contributing to the further development of the internal market for the ultimate benefit of Europe and Europe's citizens. This is in line with the purpose of achieving maximum consistency with the BEREC Strategy 2015-2017. Furthermore, the Work Programme 2017 mirrors BEREC's commitment to serve as a body for reflection, debate and advice for European Parliament, the Council and the European Commission in the electronic communications field.

In this sense, the Work Programme 2017 seeks to address current regulatory challenges, and to prepare for the new challenges ahead resulting from market, technological and social developments. The BEREC Work Programme 2017 has a clear focus on the upcoming review of the current regulatory framework for electronic communications (hereinafter the Framework Review). The Framework Review process is raising various regulatory issues, which bring about requests for BEREC's input to a broad range of topics covering a wide field of regulatory aspects.

The BEREC Work Programme 2017 was discussed and agreed at the BEREC Board of Regulators meeting in Berlin on 8-9 December. In line with the practice of previous years and in accordance with Article 5 of the BEREC Regulation, the BEREC Work Programme was subject to consultation. The public consultation ran from 7 October to 2 November 2016, in order to increase transparency and to provide BEREC with valuable feedback from all relevant stakeholders.

Wilhelm Eschweiler
BNetzA
Chair 2016

Sébastien Soriano
Arcep
Chair 2017

Work Programme 2017
BACKGROUND

Body of European Regulators
for Electronic Communications

BEREC

In the context of significant changes in technology, market structures, consumption patterns and expectations, Europe's internal market will be required to consider newly emerged challenges, ensuring connectivity as well as safeguarding an open digital environment, and allowing for innovation and experimentation.

The Framework Review is of utmost importance to support these important challenges. In 2017, BEREC will therefore focus an important part of its work on the Digital Single Market (DSM) and on the upcoming Framework Review.

In addition, BEREC will continue to provide insights and advice to the European Parliament, the Council, the Commission and the NRAs to ensure a consistent application of the EU regulatory framework. It will also reflect on prospective topics.

According to the BEREC Strategy 2015-2017, the Work Programme 2017 will continue to develop these actions in the light of the three strategic pillars for BEREC´s activities: (A) promoting competition and investment, (B) promoting the internal market, and (C) empowering and protecting end-users. Since BEREC is constantly seeking to improve its working methods and practices, as well as the quality and timeliness of its output, another key area of the Work Programme is (D) quality and operational efficiency. In 2017, BEREC will define its strategic objectives and priority, for the period 2018-2020. The review of the mid-term strategy will be one of the key areas of BEREC's work in 2017.

The implementation of the Work Programme 2017, as in previous years, will be undertaken by Expert Working Groups (hereinafter EWGs), comprised of experts from the NRAs who participate in BEREC as members or observers. Each EWG addresses a number of topics, analyses the relevant issues and prepares, inter alia, reports for discussion and adoption by the Board of Regulators (BoR). Workstreams and deliverables are presented in Section 3, under the three Strategic Priorities and to achieve the quality of BEREC's output and operational efficiency. As a cross-cutting issue, the Work Programme will give particular attention to end-users' interests, including those of specific issues relating to business customers, in the relevant work streams.

In addition to the specific workstreams set out in the Work Programme 2017, BEREC anticipates continuous involvement in Article 7/7a Phase II cases, which will be dealt with by delivering relevant Opinions, with the highest priority and within strict statutory deadlines. BEREC will also address any ad hoc requests for advice from the EU institutions (European Commission, Council and European Parliament) and will strive to complete these requests appropriately and on time.

The support of the BEREC Office is of key importance to the success of the BEREC Work Programme 2017. Under the guidance of the Administrative Manager, the BEREC Office provides professional and administrative support services to BEREC and its EWGs. The BEREC Office is committed to handling the increasing volume of work in an efficient, proactive and timely manner.

Finally, BEREC will continue to follow the approach whereby NRAs work together to elaborate Common Positions (CPs), guidelines and best practices. BEREC believes that this well-established "bottom-up" approach, drawing on and informed by NRAs' on-the-ground experience of the implementation and impact of regulation at the national level, is what makes its outputs particularly relevant and valuable.

BEREC WORK IN 2017 – STRATEGIC PRIORITIES

Work Programme 2017

Body of European Regulators
for Electronic Communications
BEREC

A.   Promoting Competition and Investment

1.   Market analysis

1.1   The impact of content markets (incl. premium audiovisual) and devices on fixed and mobile Electronic Communication Services (ECS) markets

Traditional operators evolve in a complex and changing environment. On the one hand, there are more and more interactions of actors providing traditional telecommunication services with adjacent markets; on the other hand, operators may refocus on their original role of connectivity providers. The purpose of the report planned by BEREC on the influence of digital content markets and devices is to consider the position of operators in the digital environment: how electronic communications interacts with other sectors and whether the relevant rules apply to all.

The first sector to be considered is the content sector. Content (including audiovisual) services and ECS can be complementary goods and some market players are applying convergence strategies, typically based on bundling practices and exclusivity offers, having a direct impact on network operators and ECS providers. In many countries, audiovisual content distribution is evolving from traditional digital terrestrial/satellite broadcasting and linear cable pay TV to IP-based content distribution over fixed and mobile IP networks under traditional as well as video on demand models. Some traditional telecommunication operators providing ECS are acquiring or have already acquired rights for premium content and are bundling access to this content with their fixed and mobile broadband access and telephony offers. This content can be used as a tool for leveraging their market position. Simultaneously, pure OTT players are also competing with existing content providers by offering premium content online. The second sector to be analysed is the device industry. Devices are one of the key components of the digital value chain, and manufacturers have the ability, and may have the incentive, to facilitate or restrict access to certain digital contents and services. While telecom operators are subject to net neutrality rules under regulation 2015/2120, no specific obligation applies to device manufacturers in terms of openness. In order to preserve and promote the end-users' capacity to have access and to contribute to the various content and applications on the Internet, attention should also be paid to the device sector.

The objective of this report is to: 1) Provide a snapshot on the current situation in Europe regarding (i) the distribution of premium content by different actors, (ii) the application of bundling practices, and (iii) the exclusivity agreements applied for content; 2) Identify areas of concern regarding the impact of these bundling practices and exclusivity agreements on ECS markets; 3) Provide an analysis on device openness; and 4) Summarise approaches taken by NRAs and competition authorities to address potential competition concerns in this area.

This fact-finding exercise will focus on highlighting the situation in Europe as well as the experiences and concerns of NRAs. The final output will be based on a questionnaire to be sent to NRAs, as well as a review of relevant reports on this field. The deliverable from this workstream will be a public report to be published after Plenary 4, 2017.

Deliverable
BEREC Report on the impact of content markets and devices on fixed and mobile ECS markets
Public consultation in P3/2017
Adoption in P1/2018

1.2   Convergence of fixed and mobile networks

The convergence between fixed and mobile networks is rapidly evolving and has many forms, both at commercial (e.g. fixed/mobile bundles) and technological levels (e.g. Voice over Wifi) as well as in networks and infrastructure (e.g. shared core and backhaul networks). This rapidly changing area requires a good understanding of the current situation in Member States regarding operators' strategies and uses in the convergent context, of how NRAs have responded to these trends and of any regulatory implications under the current framework. The analysis will help NRAs formulate appropriate regulations if necessary in order to better accompany this development

This report will analyse the trends that may give rise to new regulatory challenges, focusing in particular on the network and infrastructure level. It will include a state of play of convergence, exploring how the same networks can be used for fixed and mobile services. It will include a focus on backhaul connectivity (demand from operators, possible offers (if any), description and understanding how they are provided) and analyse how this interacts with existing regulation measures.

Deliverable
BEREC Report on the convergence of fixed and mobile networks
Adoption in P3/2017

1.3   Input on implementation of symmetric obligations: description of existing practices and consideration of future challenges

Symmetric obligations are seen in some cases as an effective regulatory tool to ensure access to network facilities and civil infrastructures, ensure end-to-end connectivity, facilitate the deployment of long-term very high capacity networks and promote competition. In the context of the Framework Review, it is worthwhile to study this regulatory tool and its complementarity with other types of regulatory interventions.

In 2017, BEREC will explore and share best practices based on the experiences of NRAs which have implemented symmetric regulation under Article 5 of the Access Directive and Article 12 of the Framework Directive, with a view to addressing any potential proposals emerging from the Framework Review.

A survey, addressed in particular to those NRAs which have already implemented symmetric regulation will be carried out in order to identify any lessons learned so far. The precise content and timing of deliverables will be determined by the European Commission's proposals in the Framework Review process. BEREC will aim, however, to complete the process of gathering and exchanging information at the beginning of 2017.

Deliverable
Survey to NRAs on the implementation of symmetric obligations. Presentation of the results in P1/2017

1.4 A comprehensive assessment of the need to review the Common Positions relating to Markets 3a, 3b and 4

Between 2014 and 2016, BEREC carried out a monitoring exercise to assess how NRAs have implemented the revised Common Positions (CP) relating to Markets 3a, 3b and 4. Through this ongoing monitoring exercise, BEREC aims to gain a detailed understanding of which regulatory approaches work best for different national circumstances, with a view to refining best practices. BEREC also wishes to gain insight into its own harmonisation efforts. During 2017, BEREC will carry out an assessment to consider whether there may be a need to update these CPs in the light of:

- Market and technology trends and developments (e.g. vectoring and cable-access)
- Lessons learnt from those best practices that have worked well, based on the CP monitoring exercises carried out over the last three years;
- The application of the 2013 Commission Recommendation on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment;
- NRAs' experiences as to how they take account of cable operators in market definition and SMP assessment and their experience in considering or imposing remedies on these operators;
- A review of remedies imposed by NRAs in respect of business wholesale products, including approaches in setting any obligations which foster operational quality of service.

The output of this workstream will be a report that sets out the areas where BEREC considers there may be scope for updating CPs and a recommended approach for taking this work forward.

Deliverable
BEREC Report on the need to review the Common Positions on Markets 3a, 3b and 4.
Adoption in P4/2017

1.5 New forms of sharing passive optical networks based on wavelength multiplexing

New forms of sharing passive optical networks (PON) have become possible, in particular with the adoption of the new PON standard (NG-PON2, G.989.2), which was approved by the ITU on December 2014. NG-PON2 enables several network operators to use the same PON and to operate their own wavelength on top of it. Therefore, NG-PON2 may be an option for network operators which are considering co-investment in the same fibre infrastructure, on a commercial or regulated basis. NG-PON2 could allow, for instance, to unbundle the fibre infrastructure of the SMP operator on the basis of wavelengths, i.e. wavelength unbundling could be considered as an additional tool in an NRA's toolbox in the future as it might be used to impose a new form of network access on the SMP operator. Finally, such forms of sharing could also be relevant in the context of state-aid funded networks which have to give access to other operators.

This project has the following two objectives. Firstly, to report about the current state of deployment of NG-PON2 technology, including the questions of (i) whether and to what extent the new PON standard has already been employed and (ii) whether access to such infrastructures has already been provided in case of co-investment, access to State aid funded network infrastructure or imposed as a remedy on market 3a. The reasons why or why not such a form of access has been used will also be investigated.

Secondly, this report discusses questions which may arise in the context of such forms of network sharing, including key elements that could help determine how the costs could be allocated between the operators. In this regard, it may be relevant to consider whether and how the number of end users connected to a NG-PON2 per network operator can be reliably identified. Another question may be how wavelength unbundling compares to other wholesale access products (for example, Layer 2 wholesale access products).

Deliverable
BEREC Report on new forms of sharing passive optical networks based on wavelength multiplexing
Adoption in P3/2017

2.   Favouring investment and connectivity

2.1   Implementation of the Broadband Cost Reduction directive

The broadband cost reduction directive (BCRD) ([1]) aims to facilitate and incentivise the roll-out of high-speed electronic communications networks by promoting the joint use of existing physical infrastructure and by enabling a more efficient deployment of new physical infrastructure so that such networks can be rolled out at lower cost. Member States shall adopt and publish the laws, regulations and administrative provisions necessary to comply with the BCRD by 1 January 2016 and they shall apply those measures from 1 July 2016.

The BCRD in particular contains rules with regard to access to existing physical infrastructure, coordination of civil works and access to in-building physical infrastructure. In case the involved parties are not able to reach an agreement or access is refused, either party is entitled to refer the issue to the competent national dispute settlement body. The BCRD also foresees measures to increase the transparency concerning physical infrastructure and planned civil works and defines which information should be available at a single information point. Finally, the BCRD requires that information regarding permit-granting procedures is also available at the single information point.

NRAs may be involved in the implementation of the BCRD, for example in the role of the national dispute settlement body and/or the single information point. BEREC held an expert workshop in October 2016 in order to exchange information and experience so far on the state of play of the implementation and related challenges, and, as far as possible, contribute to the development of best practices. This project will go one step further and will examine the implementation of the BCRD in more detail. In particular, the tasks assigned to NRAs, the decisions taken by NRAs where they are designated as the national dispute settlement body, as well as the information provided at the single information point will be investigated.

This should allow, inter alia, identification and sharing of issues encountered, and development of best practices, in determining whether a reasonable access request has been made to civil infrastructure of network operators, and under what conditions such access requests should be granted in case of initial refusal.

Deliverable
BEREC Report on the implementation of the broadband cost reduction directive
Adoption in P4/2017

2.2   Analysis of individual NRAs' current work around access conditions to State Aid funded infrastructure

The "EU Guidelines for the application of the State Aid rules in relation to the rapid deployment of broadband networks" set out general conditions for State Aid pro-

---

[1] Directive 2014/61/EU of the European Parliament and the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks

jects for the rapid deployment of broadband networks. Open access to the funded broadband infrastructure is generally considered as a prerequisite for State Aid to be consistent with competition law. In this regard, the guidelines outline conditions on access, prices and dispute resolution between access seekers and the subsidised infrastructure operator.

They foresee a role for NRAs in designing a pro-competitive State Aid measure in support of broadband roll-out. For instance, NRAs should issue national guidelines to local authorities taking into account the Electronic Communications Regulatory Framework and relevant recommendations issued by the European Commission to define the conditions for access to infrastructures/networks made with State intervention. NRA guidelines are intended to increase transparency for the operators and ease the administrative burden of local authorities and the consulted NRAs.

BEREC started to work on Open Access in the State Aid context as early as 2011 (BoR (11) 05). It contributed to the revision process of the State Aid Guidelines (BEREC Response to the European Commission Questionnaire on the Revision of the State Aid Guidelines (BoR (11) 42) and BEREC Opinion on the draft revision of the EU Guidelines for the application of the State Aid rules in relation to the rapid deployment of broadband networks (BoR (12) 91), which were adopted in the beginning of 2013.

The EU State Aid Guidelines have now been applied for some years and a number of national umbrella schemes have been endorsed by the European Commission on their basis foreseeing a role for the NRA.

BEREC will write a report examining how access conditions based on the State Aid Guidelines have been implemented in different MS and what was the role of the NRA, in cooperation with other competent bodies. It will also give an overview of Guidelines issued by NRAs and the extent to which access obligations imposed on a subsidised network are aligned with access obligation laid down under sectoral regulation.

Deliverable
BEREC Report on the analysis of individual NRAs' current work around access conditions to State aid funded infrastructure
Adoption in P4/2017

2.3 Facilitating mobile connectivity in 'challenge areas'

The consistent growth in the use of mobile services is reflected in the demand for extended coverage, including in areas which represent a particular challenge for operators and public authorities including regulators:

- faster network rollout and extended coverage is expected by users and local authorities in areas where the operators have less incentive to invest, such as rural areas;
- integrated, seamless coverage is expected in constrained areas (transportation, subways, indoor, etc.).

The objective of this workstream is to make a comprehensive and comparative assessment of initiatives to facilitate mobile connectivity in 'challenge areas', where operators can be reluctant to roll out. Together with RSPG [2], BEREC will compile these findings in a report.

This joint report will include a short overview by country of attributed frequencies, related coverage obligations, technology coverage, number of poles rolled out, etc. It will discuss, amongst other topics, digital planning obligations or public/private initiatives, white spot area coverage, rural area coverage, constrained areas, indoor, and transportation etc. The report will particularly focus on solutions implemented or considered (RAN-sharing, passive/active sharing etc.) with respect to mobile network sharing, and related competition matters. Forward-looking solutions will also be studied, in the light of what is taking place in different markets.

....
[2]   Radio spectrum policy group.

Deliverable
RSPG/ BEREC Joint report on facilitating mobile connectivity in 'challenge areas' (to be preceded by a phase of dialogue with stakeholders)
Publication for consultation in P3/2017, final adoption in P4/2017

2.4   IP interconnection practices in the context of net neutrality

BEREC's 2012 report, 'An assessment of IP interconnection in the context of net neutrality', described how the Internet ecosystem has managed to adapt IP interconnection arrangements to reflect (inter alia) changes in technology, in the (relative) market power of players, in demand patterns and in business models. This has happened without the need for regulatory intervention.

The paper focused on the wholesale level of interconnection between ISPs and other intermediaries in the Internet value chain and analysed how deviation from net neutrality may or may not be reflected at the interconnection level governing transmission across the Internet. A disruption of interconnection could lead to a situation where end-users cannot reach all destinations of the Internet, or where the quality of service from the end-user's perspective is not satisfactory.

BEREC will examine recent technical and commercial evolution and update the 2012 report in the light of new developments such as the 2015 Open Internet Order in the US, various relevant reports on the issue, the data collection experience of NRAs, and the TSM regulation.

Deliverable
BEREC Report on IP interconnection practices in the context of net-neutrality
Publication for consultation P2/2017, Final adoption P3/2017

2.5   Monitoring of mobile network coverage

Mobile network coverage is of the utmost importance and monitoring it is therefore key for NRAs, many of which have developed various interesting methodologies. This work will be an opportunity for NRAs to share their best practices and experiences of monitoring mobile network coverage.

The experts will first establish a comparable overview of relevant national figures, regarding mobile coverage, by country (coverage statistics, by technology, population and territory, number of polls rolled out, etc.). The experts will also tackle how coverage statistics are calculated by each NRA. There may also be a review of coverage maps and coverage checking tools, focusing on how NRAs deal with these issues.

NRAs will share their methodologies and implementations thereof, if relevant, to ensure reliability of these coverage figures and maps (field tests, technical modelling, etc). Questions regarding publication (report, frequency of publication, website, etc) and public monitoring should also be considered. To complete this work, BEREC will collect inputs from RSPG.

Finally, based on the above, the experts will establish a Common Position on how these matters could be dealt with, in a common and consolidated approach, and assess whether more advanced monitoring should be implemented at EU level.

Deliverable
BEREC Common Position on monitoring of mobile network coverage
Public consultation in P3/2017
Adoption in P4/2017

3. Supporting innovation (IoT/Spectrum sharing)

3.1 Follow up of ongoing work on IoT and its impact on the EC Regulatory Framework

In early 2016, BEREC issued a report on « Enabling the Internet of Things » which discussed IoT technologies and their impact on regulation.

As a follow up to the aforementioned report, a workshop will be held to discuss the regulatory implications and the solutions that might be required to ensure large-scale and sustainable IoT rollouts that bring significant benefits to citizens and consumers across several industry sectors. The workshop will aim to contribute to identify the potential barriers to the IoT evolution and issues related to the diversity of use. While purely telecom-related topics must be tackled, such as scarce resources, roaming, coverage or interoperability, the workshop will also consider issues with a broader scope, pertaining to innovation and investment, consumer trust (security, resilience, confidentiality), data privacy and data ownership and portability. The workshop will take particular account of the ever-increasing role of software platforms in many facets of IoT, as well as the diversity of use.

The report identified areas that are crucial for the development of IoT (such as privacy, cybersecurity and standardisation) which, in many instances, are the responsibility of national and/or international authorities other than NRAs. As prescribed by the 2016 work plan, BEREC has entered into a dialogue with those entities. In 2017, BEREC will further enhance the cooperation with such entities, in order to create awareness and foster an innovation-friendly as well as consumer-friendly environment in the specific fields where these entities are operating.

The workshop will be followed by the publication of its proceedings. Subsequently, BEREC will provide inputs and comments to the Framework Review if required.

Deliverable
BEREC Workshop on IoT technologies and their impact on regulation and publication of its proceedings
1st February 2017

3.2 Spectrum needs to foster innovation in Europe

In the coming years Europe will witness an ever-increasing level of connectivity in order to cope with the growing demand for mobile services, wireless internet access and IoT applications. MNOs will continue 4G network-rollouts and in parallel may decide to progressively upgrade their 4G networks with some 5G standard building blocks or IoT specific technologies (NB-IoT, LoRa…).

The breakthrough uses of 5G will most probably require the identification of new frequency bands to accommodate very high throughput applications and it is of the utmost importance to ensure that possible constraints on spectrum availability do not hamper 5G deployment within Europe.

Regarding spectrum, multiple access schemes (licensed, licensed exempt, or a hybrid) may be considered as a response to new market trends and the anticipated needs. In particular, innovative sharing mechanisms (LSA, 3-tier SAS) could be studied as a means to optimise spectral efficiency.

Finally, the specific use of unlicensed spectrum, which is a very potent vector of innovation, should be facilitated by regulators, through the identification of potential new frequency bands and the evaluation of the possibility for spectrum audit tools in unlicensed bands.

An assessment of the state of play on those topics including market trends could be developed and discussed in a workshop held jointly with RSPG, and to which other interested entities such as ENISA could contribute.

Deliverable
BEREC Workshop on Spectrum needs to foster innovation (held jointly with RSPG)
Timing tbd

B.   Promoting the Internal Market

1.   Framework review

1.1   Inputs to legislative proposals in the context of the EC Regulatory Framework review

On the back of both high-level and technical thematic exchanges with BEREC in 2015 and 2016, and after the publication of the BEREC Opinion in December 2015, the European Commission's legislative proposals for a review of the package of directives providing a regulatory framework for the provision of electronic communication (EC) networks and services in the EU were issued in September 2016.

In this context, and building upon the high level opinion of December 2016, BEREC intends to complete and deepen its analyse of the proposals during 2017 with a view to providing input to the EU institutions, both upon request and at BEREC's own initiative.

Drawing on previously launched investigations, BEREC will do further work on a full range of review related topics, including access regulation (part A1 and A2), universal service (part C1), the development of IoT services and spectrum needs (part A3) identified in this work programme that might serve as further input to the review process .

Deliverables
BEREC Opinions, Reports, position and input papers, technical background analyses in the context of the EC Regulatory Framework Review (depending on specific requests by the EU Institutions and on needs emerging during the legislative process).

1.2   Collaboration with the European Commission's consultant on its study on the review of SMP guidelines (to be determined with the European Commission)

The European Commission will conduct an external study on the review of significant market power (SMP) guidelines. The main objective of the study will be to gather information about the developments of the relevant case-law and competition law principles regarding the assessment of dominance, and whether and how the guidelines have contributed to ensuring a harmonised approach across the Union, etc. This study will support the European Commission's evaluation of how to update the guidelines and provide relevant guidance to national authorities.

On several occasions in the past, BEREC has acknowledged the importance of the SMP guidelines and considered how they should be modified, especially when important competition issues occur which are not covered by the European Commission's 2002 Guidelines on market analysis and the assessment of significant market power. For example, further guidance could be useful in the case of bundles, or concerning how NRAs should analyse joint dominance when assessing SMP within the relevant markets.

BEREC will seek to actively participate to the review of the SMP guidelines. Notably it will collaborate with the European Commission's consultant on its study in order to help them identify key issues which need further guidance, and to give them concrete suggestions in the SMP guidelines modification process.

Meetings with the consultant could be organised, followed by a BEREC Opinion on the European Commission review of SMP guidelines.

Deliverable
BEREC Opinion on the European Commission review of SMP guidelines
Timing tbd

1.3   Review of Termination Rates (TR) recommendation

In June 2016, BEREC responded to the European Commission's public consultation on the evaluation of the Recommendation on termination rates.

As the European Commission is expected to review the TR Recommendation not later than December 2016, BEREC will collaborate with the European Commission's subsequent work, drawing on its previous analysis. The deliverables will be adapted depending on the process finally chosen and followed by the European Commission. This may include the provision of expert opinions in the course of 2017.

Deliverable
BEREC Opinion on the Review of Termination Rates recommendation
Adoption depending on European Commission's initiative

1.4   Update of the internal qualitative report on Phase II cases (multiannual work line)

Since 2014, BEREC has undertaken an annual analysis of Article 7/7a Phase II cases, aimed at gaining a better understanding of both the procedural and substantive aspects of these cases and at informing the prospective review of 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. BEREC will continue to add new Phase II cases to this database as and when they arise. The objective is that the database can be consulted by BEREC members, in particular experts of Phase II cases, both for referencing a particular case and to analyse key themes amongst the cases over time.

In the context of the framework review, additional analysis may need to be undertaken to examine any eventual proposition by the European Commission regarding the Article 7/7a process.

Deliverables
Update of the internal qualitative report on Phase II cases
Timing P4 2017

2.   International roaming

2.1   Update of BEREC Guidelines on the Roaming Regulation

The BEREC Guidelines on the Roaming Regulation 531/2012 (excluding Articles 3, 4 and 5) need to be revised taking into account the abolition of retail roaming surcharges as of 15 June 2017.

In order to have a harmonised implementation of the new provisions and given the number of questions concerning the implementation of the new measures, the update of the General Guidelines should be approved during the second Plenary.

Deliverables
BEREC Guidelines on Regulation (EU) No. 531/2012 as amended by Regulation (EU) No. 2120/2015 (Excluding Articles 3, 4 and 5 on wholesale access and separate sale of services)
Adoption in P1 or P2/2017

2.2   Periodical International Roaming reports

In accordance with Article 19 of the Roaming Regulation, BEREC shall regularly collect data from NRAs on the development of retail and wholesale charges for voice, SMS and data roaming services. This data has to be provided to the European Commission at least twice a year.

On the basis of collected data, BEREC shall also regularly report on the evolution of pricing and consumption patterns in the Member States both for domestic and roaming services and the evolution of actual wholesale roaming rates for balanced and unbalanced traffic between roaming providers.

Taking this into account, BEREC is adapting the data collection template to take account of the new provisions and will continue to monitor the Roaming Regulation's functioning and provider compliance, compiling information on trends in traffic volumes and pricing at retail and wholesale level for both domestic and roaming services, and producing two benchmark reports covering the periods April 2016-September 2016 (18th Benchmark Report) and October 2016-March 2017 (19th Benchmark Report).

Deliverables
18th and 19th International Roaming BEREC Benchmark Data Report
Adoption in P1/2017 & P3/2017

2.3   Transparency and Comparability of Roaming Tariffs

In accordance with Article 19 of the Roaming Regulation, BEREC will collect information from NRAs on the transparency and comparability of different roaming tariffs offered by operators to their customers. The information gathered from NRAs and operators will be used to prepare the 4th report on transparency and comparability of roaming tariffs, which seeks to identify issues that need addressing, in particular with respect to new Roam like at Home offers, Fair Use Policies and sustainability.

Deliverables
BEREC Report on transparency and comparability of International Roaming tariffs
Adoption in P4/2017

2.4   Inputs to the European Commission implementing acts on weighted average MTRs (art. 6(2) RR)

According to Art 6e (2) of the Roaming Regulation as amended by the Regulation 2015/2120, the European Commission has to review the Implementing Acts setting out the weighted average of maximum mobile termination rates every year in accordance with the same procedure. BEREC needs to give input to the European Commission on this matter once a year.

Deliverables
BEREC Input to the European Commission regarding the implementing acts setting out the weighted average of maximum mobile termination rates across the Union.
Adoption by e-clearance after P3/2017

C. Empowering and Protecting End-users

1. Promoting end-user choice, accessibility and affordability

1.1 Current definition and provision of universal service

The Universal Service Directive requires the European Commission to review the scope of the Universal Service every three years in the light of social, economic and techno-logical developments. The European Commission started working on universal service from 2014 and BEREC adopted an internal report in 2014 on the implementation and application of the universal service provisions. In September 2016, the European Commission proposals include a review of the universal service provisions.

In 2017, BEREC will complement the 2014 internal report with a survey on recent experiences regarding the evolution of the universal service scope and content in the Member States. BEREC will analyse the European Commission proposals on the revision of the universal service provisions. This analysis will serve as an input to the general assessment of the European Commission proposal (cf. point B.1.1 of the WP).

Deliverables

BEREC update survey on Member States recent experience in terms of universal service

Adoption in P1 /2017

2. Safeguarding an open internet

2.1 Implementation of Regulation 2015/2120 and Guidelines on net neutrality

BEREC will monitor the implementation of the net neutrality provisions of Regulation 2015/2010 in the context of BEREC Guidelines. BEREC will receive answers to a BEREC internal questionnaire (to be sent out in early 2017) as well as the first set of annual reports to be provided by NRAs by the end of June 2017 on the implementation of net neutrality rules. This will be used to produce a report describing and analysing how NRAs have implemented the rules and issues which arose. Throughout the year, BEREC will also provide a forum for NRAs to exchange views and experiences on the implementation of the Regulation, that could feed the report.

Based on this work, BEREC will identify best practices or preferred approaches to future reporting, and will consider if it is necessary to encourage common reporting approaches and methodologies.

Deliverables
BEREC Internal report summarising annual reports by NRAs on the implementation of the net neutrality provisions of Regulation 2015/2120 and associated BEREC guidelines
Discussion and orientation in P3/2017
BEREC Report on the implementation of Regulation 2015/2120 and related BEREC guidelines, including possible recommendations
Adoption for publication in P4/2017

2.2 Regulatory assessment of QoS in the context of net neutrality

a) In order to support the implementation of the net neutrality provisions of the Regulation 2015/2120, BEREC will develop a quality of service regulatory assessment toolkit for NRAs willing to develop their own QoS measurement tool (regarding speed for example, in application of art. 4 and 5 of the Regulation). The work will build on regulatory best practices and previous BEREC guidance as regards internet access service (IAS) quality monitoring. As proposed in the 2012 BEREC NN QoS Guidelines,

the measuring methods will encompass both IAS as a whole as well as individual applications using IAS; they will aim at assessing the performance of those services, on the one hand, and detecting traffic management practices (as covered by art. 3(3) of the Regulation) applied to or impacting those services, on the other hand. Accuracy and comparability of measurement results will be emphasised.

The Regulation 2015/2020 refers to "monitoring mechanisms certified by the NRA". In the toolkit, BEREC will produce guidance on criteria NRAs should take into account when developing its own mechanism or certifying a third party mechanism (including issues like the independence or business model of the applying monitoring body where the mechanism is not developed by the NRA itself).

Deliverable
BEREC regulatory toolkit for QoS assessment for the implementation of articles 4 and 5 of the Regulation 2015/2120
Adoption for public consultation in P2/2017 (to be preceded by a phase of dialogue with stakeholders)
Adoption in P3/2017

b) BEREC will build upon the findings from the 2014 BEREC NN QoS Monitoring Report and 2015 BEREC NN QoS Feasibility Study. Taking into account the various examples of NRAs which operate their own QoS measurement tools, and focusing on practical implementation aspects, BEREC will provide technical specifications for the various components of a QoS monitoring system (notably enabling the measurement of individual applications or types of applications). In 2017, the BoR will decide on the next steps, in particular whether to move forward to initiating development of an opt-in quality monitoring software based on these concrete technical specifications and analyse the governance aspects of operation of such a monitoring system.

Deliverables
BEREC Report providing practical guidance regarding the technical implementation of a QoS monitoring system.
Draft internal report in P2/2017 (to be preceded by a phase of dialogue with stakeholders)
Decision on the next steps (possible launching of an opt-in quality monitoring software) P3/2017
Adoption of a final report P3/2017

2.3   Net neutrality supervision tools and methods

One of the ways in which NRAs might identify contractual, commercial and technical practices introduced by ISPs at national level and assess their compliance with the provisions of Article 3 of the Regulation 2015/2120 is through the use of detection tools and methods, in particular three kinds: automatic assessment tools based on the toolkit developed as part of item C.2.2.a (such as network diagnostic tests), end-user reporting platforms and periodic questionnaires. BEREC will therefore report on and analyse existing tools and suggest best practices. It will include a full template (questionnaire) about traffic management investigation (TMI), as used in the BEREC/European Commission 2012 Traffic Management Investigation, for NRAs to use voluntarily as part of their future monitoring activities.

Deliverable
BEREC Report analysing tools and methods used to identify contractual, commercial and technical practices for the implementation of article 3 of Regulation 2015/2020, including recommendations to NRAs
Adoption in P4/2017 (to be preceded by a phase of dialogue with stakeholders)

D. Quality and efficiency

1. Review of the BEREC Mid-Term Strategy 2018-2020

BEREC adopted its first medium-term strategic outlook in 2012. This strategic outlook is subject to a regular review and an updated strategic outlook was therefore adopted on 4 December 2014, covering the period 2015-2017. BEREC will have to revisit its mid-term strategy in 2017 for the period 2018-2020, in particular in the context of the digital market developments. The review of the mid-term strategy will be one of the key areas of BEREC's work in 2017.

The updated mid-term strategy will outline BEREC's strategic objectives for the period 2018-2020. The strategy will build upon BEREC's work to date, and takes into account the major developments that are taking place in the electronic communications field. It is a core document, on which BEREC's annual work programmes are based and which provides strategic orientations to map out BEREC actions.

Deliverable
BEREC mid-term strategy 2018-2020
Public consultation after P2/2017
Adoption in P3/2017

2. Benchmarks

2.1 Benchmarking on MTR/FTR/SMS (multiannual work line)

In 2017 BEREC will continue to produce bi-annual benchmarks on mobile and fixed termination rates as well as on SMS. The Termination Rates (TRs) data collected from BEREC members and observer states aims to monitor the evolution of TRs and the cost model/methodology adopted for the definition of TRs.

These benchmarks have reached a satisfactory level of maturity and have proved invaluable, not just for monitoring consistency but also in the regulatory process.

Deliverables
BEREC Benchmark Report on MTR, FTR, SMS
Adoption in P2/2017 and P4/2017

2.2 Procedures for collection and standardisation of statistical and market information on OTT services, in cooperation with Eurostat

A follow-up to the 2016 report on "European benchmarking of OTT indicators", will be elaborated, in order to consolidate the questions likely to be included in the current Eurostat collection.

In its report on OTT services (BoR (16) 35) published in January 2016, BEREC has identified the need for the ECN/S Framework review to address the NRAs' lack of legal competences to seek information from providers of OTT services.

However, in some cases there is a short term need for evidence in order to inform European policies and national regulatory decisions. Because of this, and given the limited possibilities to gather information directly from the OTT providers, it may be necessary that the European Commission, in collaboration with BEREC, improves the tools they are currently using to gather information on penetration rates (Eurobarometer and Eurostat's Information Society Statistics).

BEREC will discuss with Eurostat the procedures for collection and standardisation of statistical and market information on OTT services.

European ICT surveys: "Information and Communication Technologies in households

and by individuals" and "Information and Communication Technologies in enterprises" are collected yearly by National Statistical Agencies and harmonised and compiled by Eurostat. When Eurostat has a comprehensive database with a representative sample in each country, by regularly including specific OTT questions in the survey, the limitations that NRAs face when gathering information about these services could be mitigated.

Deliverables
Discussions with the European Commission and Eurostat about the collection and standardisation of statistical and market information on OTT services
Oral update in P2 2017

2.3 Business market indicators for the Digital Scoreboard (elaborate a survey and harmonise practices)

The business market is a very important regulatory issue for NRAs. However, the existing amount of available statistical information at European level is too low to assess robustly the evolution of this market and to define its characteristics, and its level of competition. Most of the available data comes from surveys carried out by operators.

The aim of this work is to propose to the European Commission a set of business market indicators that could be included in the questionnaire used for the Digital Scoreboard publication. To this end, it will be necessary to ensure that the definition of the business market covers the same scope for all NRAs and to identify what type of data is currently collected by each NRA and the underlying definitions. It could be useful to establish some guidelines on how information should be collected on this matter.

Deliverable
BEREC Report on business market indicators for the European Commission's Digital Scoreboard
Adoption in P4/2017

3. Regulatory accounting

3.1 Follow up of the Weighted Average Cost of Capital (WACC) study of the European Commission

On 27 June 2016 the European Commission published a report which analysed in detail the approaches NRAs use to determine the rate of return in regulatory proceedings.

BEREC has already started looking into the issue of calculating the cost of capital and the reasons to choose a specific approach by NRAs. BEREC has looked in detail at the parameters and compared its own results with the results of the study. This work will be continued in close cooperation with the European Commission in 2017.

Deliverable
Follow up of the WACC study, in close cooperation with the European Commission
Adoption in P1/2017

3.2 Regulatory Accounting in practice (multiannual work line)

BEREC will repeat this annual exercise in 2017 with the intention, as in previous years, to assess the degree to which there is consistency in regulatory accounting across the EU and to identify differences amongst Member States which may have arisen as a result of different implementations of the same regulatory accounting approach.

BEREC will continue to collect data on the methodology and input parameters used to calculate the rate of return on capital employed.

In 2017, emphasis will continue to be given to consistency in regulatory accounting with respect to key access products and will seek to increase the detail and the in-depth analysis of the methods covered to identify commonalities and reasons for differences. The report aims at investigating any possible scope for greater consistency across Member States, as well as covering the motivation behind NRAs' choices of the regulatory accounting and costing methodologies, thereby linking both methodologies in order to find trends.

BEREC will also include an overview of the costing methodologies applied, having in mind the Recommendation on Consistent Non-Discrimination Obligations and Costing Methodologies (2013/466/EU).

Deliverable
BEREC Report on Regulatory Accounting in practice
Adoption in P3/2017

4.   Communication and Cooperation

4.1   BEREC annual reports

According to Article 5.5 and Article 3.1 (n) of the BEREC Regulation (EC) 1211/2009, BEREC is required to present an Annual Report of its activities every year, as well as an Annual Report on developments in the electronic communications sector. BEREC will continue to publish these two reports together as Part A and Part B of a single document.

Whereas the Annual Report on BEREC activities focuses on the outcome of the work of its expert working groups and ad-hoc teams based on the Work Programme, the Annual Report on developments in the electronic communications sector summarises BEREC's view on the past year as well as a perspective of future developments and challenges in the sector.

Deliverable
BEREC Annual Reports 2016
Adoption in P2/2017

4.2   Stakeholders' Forum

Building upon the very positive experiences BEREC has made with its past four events, the 5th Stakeholders' Forum will continue to provide a platform for strategic dialogue, which will enable participation by all members and key stakeholders and ultimately increase transparency.

The feedback received in this context will be an important complement to the written inputs received through public consultations and other discussions that take place, and will reflect on key developments and future challenges for the sector as well

Deliverable
BEREC Stakeholders' Forum in Q4/2017

4.3   Cooperation with the EU-institutions and institutional groups

BEREC will continue to engage with the European Commission, the Council and the European Parliament, providing advice and opinions on European Commission draft decisions, recommendations and guidelines, and taking on any questions related to electronic communications that fall within the scope of its competence. In 2017, the continuation of this fruitful cooperation with the EU institutions will be a key factor and of crucial importance for a successful review of the legal framework of the electronic communications sector and a successful Digital Single Market strategy.

In addition to carrying out its advisory duty vis à vis all EU Institutions, BEREC will also promote in 2017 thematic exchanges with other European regulatory cooperation platforms and bodies, operating both in adjacent and different economic sectors, such as RSPG [3], ENISA [4], ERGA [5], ERGP [6] and ECN [7].

Based on the European Commission's eventual legislative proposals, BEREC will identify specific lines of cooperation and the relevant EU regulatory platforms.

4.4   International cooperation

Each year it becomes ever more necessary for BEREC to engage in dialogue with NRAs based outside the EU, as well as with international regulatory networks, policy-makers and institutions involved in electronic communications matters.

The increasing volume of electronic communications flowing in and out of the EU and the globalisation of the telecommunications industry (just as with other industries) means that policies, legislation and regulations have to be seen from beyond just the European perspective and taking into account the global perspective. BEREC will need to closely follow international trends in technology and changing business models, so that it retains the capacity to address challenges swiftly and effectively as they arise.

Additionally, regions outside the EU regulators' networks have been expressing great interest in the European regulatory approach.

In 2017, BEREC will continue to develop and strengthen contacts with international regulatory authorities and organisations, such as the FCC [8] and ITU [9], and with regional regulatory networks (EMERG [10], EaPeReg [11] and Regulatel [12], in accordance with the BEREC Regulation and in cooperation with the EU external action services.

---

[3]   Radio Spectrum Policy Group.

[4]   European Union Agency for Network and Information Security.

[5]   European Regulators Group for Audiovisual Media Services.

[6]   European Regulators Group for Postal Services.

[7]   European Competition Network.

[8]   Federal Communications Commission (United-States)

[9]   Internation Telecommunications Union.

[10]   Euro-Mediterranean Regulators Group.

[11]   Eastern Partnership Electronic Communications Regulators Network.

[12]   Latin American Forum of Telecommunications Regulators.

ANNEX – OUTPUTS

Reports

BEREC Report on the impact of content markets and devices on fixed and mobile ECS markets

BEREC Report on the convergence of fixed and mobile networks

BEREC Report on the need to review the Common Positions on Markets 3a, 3b and 4.

BEREC Report on new forms of sharing passive optical networks based on wavelength multiplexing

BEREC Report on the implementation of the broadband cost reduction directive

BEREC Report on the analysis of individual NRAs' current work around access conditions to State aid funded infrastructure

RSPG/ BEREC Joint report on facilitating mobile connectivity in 'challenge areas'

BEREC Report on IP interconnection practices in the context of net-neutrality

Update of the internal qualitative report on Phase II cases

18th and 19th International Roaming BEREC Benchmark Data Report

BEREC Report on transparency and comparability of International Roaming tariffs

BEREC Internal report summarising annual reports by NRAs on the implementation of the net neutrality provisions of Regulation 2015/2120 and associated BEREC guidelines

BEREC Report on the implementation of Regulation 2015/2120 and related BEREC guidelines, including possible recommendations

BEREC Report providing practical guidance regarding the technical implementation of a QoS monitoring system.

BEREC Report analysing tools and methods used to identify contractual, commercial and technical practices for the implementation of article 3 of Regulation 2015/2020, including recommendations to NRAs

BEREC Benchmark Report on MTR, FTR, SMS

BEREC Report on business market indicators for the European Commission's Digital Scoreboard

BEREC Report on Regulatory Accounting in practice

BEREC Annual Reports 2016

Other documents

Presentation of the results of the survey to NRAs on the implementation of symmetric obligations

BEREC Common Position on monitoring of mobile network coverage

BEREC Opinions, reports, position and input papers, technical background analyses in the context of the EC Regulatory Framework review (depending on specific requests by the EU Institutions and on needs emerging during the legislative process).

BEREC Opinion on the European Commission review of SMP guidelines

BEREC Opinion on the Review of Termination Rates recommendation

BEREC Guidelines on Regulation (EU) No. 531/2012 as amended by Regulation (EU) No. 2120/2015

BEREC Input to the European Commission regarding the implementing acts setting out the weighted average of maximum mobile termination rates across the Union.

BEREC update survey on Member States recent experience in terms of universal service

BEREC regulatory toolkit for QoS assessment for the implementation of articles 4 and 5 of the Regulation 2015/2120

BEREC mid-term strategy 2018-2020

Follow up of the WACC study, in close cooperation with the European Commission

Workshops / Other meetings

BEREC Workshop on IoT technologies and their impact on regulation and publication of its proceedings

BEREC Workshop on Spectrum need to foster innovation (held jointly with RSPG)

Discussions with the European Commission and Eurostat about the collection and standardisation of statistical and market information on OTT services

BEREC Stakeholders' Forum

Body of European Regulators
for Electronic Communications

BEREC

Work programme 2017

BEREC work in 2017 – Strategic priorities

A. Promoting Competition and Investment
B. Promoting the Internal Market
C. Empowering and Protecting End-users
D. Quality and efficiency