

BEREC Annual Reports

– 2014 –

4 June 2015

Foreword by the BEREC Chair 2014

As BEREC Chair 2014, it is my honour to present the annual report on BEREC activities for the year 2014. This report is based on the 2014 work programme and describes the achievements of BEREC last year.

Last year was once again a challenging and highly successful year for BEREC. Through the delivery of timely and high-quality opinions, driven by our expertise and practical experience, we have given expert advice to the European institutions on important legislative initiatives such as the Telecoms Single Market (TSM)¹ initiative, and provided an expert opinion on the Commission Recommendation on Relevant Markets. BEREC has again shown that it is an important, neutral and objective expert advisor to legislators and has played an important role in these processes. In addition to this, BEREC has updated its Strategic Outlook, reorganised its working structure and increased engagement in stakeholder dialogue by organising a stakeholder forum, among other activities.

Before proceeding to describe the activities of 2014 in the next chapters I would like to begin by pointing out some highlights from the year.

Progress towards BEREC's objectives

BEREC delivered a wealth of results and moved towards achieving its objectives in three thematic areas related to promoting competition and investment, promoting the internal market, and empowering and protecting end users. These outputs include:

- BEREC Opinion on the Commission Recommendation on Relevant Product and Service Markets Susceptible to ex ante Regulation;
- BEREC views on the legislative initiative on the Telecoms Single Market (TSM), including a separate analysis of the impact of 'Roam Like at Home';
- BEREC Common Position on geographic aspects of markets analysis;
- BEREC report on monitoring quality of service in the context of net neutrality;
- BEREC Guidance on the regulatory accounting approach to the economic replicability test.

Liaising with the European institutions

BEREC is entrusted to contribute to the functioning of the internal market for electronic communications networks and services by delivering opinions on draft decisions, recommendations and guidelines and assisting the European Parliament, the Council and the European Commission, as well as national regulatory authorities (NRAs), in the dissemination of best practice.

In this respect, during 2014, BEREC provided formal advice to the Commission on the proposed Recommendation on Relevant Markets as well as on the proposals on the TSM. BEREC has also engaged in informal meetings with the Commission known as 'What-if' meetings. These have been informal meetings where the Commission and

¹ <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52013PC0627>

BEREC have met to discuss various issues in an informal setting. BEREC has also attended and given its expert opinion to the European Parliament and Working Parties of the Council.

Article 7/7a procedures

The procedures defined in Article 7/7a of the amended Framework Directive constitute one of the main innovative features of the 2009 Telecoms package. Since its first full year of operation (2011), BEREC has responded efficiently and successfully to this important role.

In 2014, handling Article 7/7a Phase II procedures was an essential part of BEREC's daily routine. During 2014 the Commission opened ten Art. 7/7a Phase II cases, compared to 16 cases in 2013. BEREC responded successfully and in time for all eight cases that required an expert opinion (two cases were discontinued following withdrawal of the relevant notification by the competent NRA). During this process, BEREC demonstrated its independence: agreeing with the European Commission completely in six cases, while in two other cases supporting only parts of the European Commission's serious doubts.

Striving for openness and efficiency

During 2014 BEREC worked harder to be an open, efficient and transparent organisation.

This was done by repeating the successful event of the first BEREC Stakeholder Forum in 2013, as well as other activities. This time the Stakeholder Forum took place in Brussels on 16 October 2014 and topics such as ex ante margin squeeze tests and the BEREC 2015 Work Programme were discussed with a wide range of stakeholders.

Furthermore, we have updated our Strategic Outlook. The BEREC Strategy 2015-2017 aims to enhance BEREC's effectiveness, by adjusting the overall strategy and setting a clear direction for all activities. The BEREC Strategy proposes a new mission statement and outlines three strategic pillars: promoting competition and investment, promoting the internal market, and empowering and protecting end users. This has provided BEREC with a sound basis for the challenges and developments ahead.

Finally, BEREC continued its work to further revise its Rules of Procedure which meant revising the structure and number of the Expert Working Groups, as well as standardising the number of co-chairs to two and introducing rules on their appointment.

I would like to thank the participating (member and observer) NRAs of BEREC for their continuing commitment, in terms of personal and active involvement on the Board of Regulators (BoR) and the Management Committee of the BEREC Office, as well as for contributing invaluable expert resources to BEREC's work. The collective knowledge and expertise of all NRAs, channelled and integrated through the various working groups, is the cornerstone of BEREC's independent, expert voice, for the benefit of consumers and industry.

On this basis, I would like to extend my thanks to all the experts who participated in our various working groups and ad-hoc teams, as well as to all members of the Contact

Network for contributing in the most professional manner to the effective implementation of our work programme.

I would also like to pay tribute to the staff of the BEREC Office in Riga for their administrative and professional support and for the invaluable assistance provided to the Chair and the Chair's Office throughout the year. The BEREC Office is continuously improving its professionalism and efficiency and is a truly vital part of BEREC.

Lastly, I would like to wish my successor, Professor Fátima Barros, every success in chairing BEREC and overseeing its further development during 2015.

Göran Marby

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PART A:**Annual report on BEREC activities in 2014**

Report adopted by the Board of Regulators (BoR) pursuant to Article 5(5) of Regulation (EC) No 1211/2009 of the European Parliament and of the Council (the BEREC Regulation)

1 Introduction

This report aims to briefly present the activities of BEREC in 2014 in accordance with Article 5(5) of the BEREC Regulation.

Following the usual procedure, the annual report on BEREC activities in 2014 is based on the work streams and priorities identified in the work programme for 2014. It elaborates on the work conducted by the expert working groups (EWGs) and ad-hoc teams.

In each section, following the description of the work performed during 2014, any documents produced by the relevant team are listed.

Article 7/7a cases are presented in the same way.

2 Strategic outlook

At its 18th meeting (27-28 February 2014, Stockholm) the Board of Regulators (BoR) decided to launch a review of the Mid-term Strategy Outlook published in February 2012. During the 19th plenary meeting (5-6 June 2014, Dublin), based on information gathered from the NRAs on emerging challenges in electronic communications, the BoR held an orientation debate on the future strategy for BEREC. A team led by the BEREC Vice-chair (BIPT) was put in charge of developing a new draft BEREC Strategy for 2015-2017.

BEREC launched a public consultation at its 20th Plenary (25-26 September 2014, Rome) to collect stakeholders' views to be presented at the 2nd Stakeholder Forum meeting in Brussels on 16 October 2014. Finally, the 21st BoR Plenary (December 2014, Brussels) discussed the results of the public consultation and approved the consultation report and the new BEREC Strategy for publication.

The BEREC Strategy 2015-2017 aims to enhance BEREC's effectiveness by adjusting the overall strategy and setting a clear direction for all activities, in view of the challenges ahead. The document proposes a new mission statement and outlines three strategic pillars: promoting competition and investment, promoting the internal market, and empowering and protecting end users. Subsequently, the document gives an overview of the major trends and developments that will have an impact on the regulatory requirements of the sector. Taking these major trends into account, the document proposes three strategic priorities:

(1) Promoting competition and investment: against the backdrop of the rise of OTTs, the need for investment to address growing demand and to increase levels of quality of service, and the potential for competitive pressures from service bundling and market consolidation, BEREC will focus on promoting competition, creating a favourable climate for investment and supporting innovation through effective, predictable and consistent regulation of national wholesale markets. BEREC intends to devote considerable effort to addressing the risk of service and network oligopolies and will also look closely at the potential impacts of OTT players on the competitive dynamics of the market.

(2) Promoting the internal market: IP convergence and the increasing ability of end users to access services regardless of their location, device or platform brings the completion of an internal market in services closer. BEREC will continue to support IP network technologies and address fixed/mobile convergence. At the same time, BEREC will work towards removing barriers by focusing on a common approach to 'net neutrality', harmonised consumer protection and international mobile roaming.

(3) Empowering and protecting end users: BEREC will continue to put end user empowerment at the heart of its work by promoting end user choice (ensuring ease of switching), accessibility and affordability, by safeguarding an open internet and by promoting end user protection online.

Finally, the document underlines the quality of BEREC's output and its operational efficiency. It is important to ensure that BEREC's output continues to contribute directly to its strategic vision. BEREC will reflect its vision in its work programmes and seek to improve its work planning to make optimum use of its resources.

Documents:

BoR (14) 181 - BEREC Report on the Public Consultation of the BEREC Strategy 2015-2017

BoR (14) 182 - BEREC Strategy 2015-2017

3 Work Programme 2014

3.1 Digital single market

3.1.1 Legislative proposals

Following the adoption by the Commission, in September 2013, of a proposal for a 'regulation of the European Parliament and of the Council laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent' (also known as the Telecoms Single Market²), BEREC firstly adopted a statement and then, in October 2013, a wider analysis paper detailing its views on the draft legislative text.

² <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52013PC0627>

Shortly after, within the scope of the ordinary EU legislative process and in line with what was envisaged by the Work Programme 2014, BEREC focused on the subsequent parliamentary activities by monitoring them and providing its own technical views to the competent committees regarding the regulatory solutions and legislative formulas suggested by the European Executive.

After the European Parliament adopted a first reading legislative resolution on the proposal for a regulation on 3 April 2014, BEREC released, on the following day, a high-level statement, taking stock of the European Parliament's careful approach to any review intervention and some of the simplification tools introduced, while committing to a deeper examination of the proposed amendments and to further exchanges with the EU institutions involved.

On 16 May 2014, building on the input from all its relevant Expert Working Groups, BEREC then adopted its own views on the European Parliament first reading legislative resolution specified above, outlining in a more detailed fashion its point of view regarding the strengths of the Parliamentary approach, as well as some aspects for further reflection with respect to all the areas covered by the draft regulation, i.e. general authorisation regime, spectrum, wholesale access products, net neutrality, end users, international roaming and institutional aspects.

The Council of the EU then entered into a detailed analysis of the proposals through the competent Working Party and, in the second half of 2014, compromise proposals were drawn up by the Presidency, eventually focusing on the subjects of roaming and net neutrality only.

Documents:

BoR (14) 42 - BEREC Statement on European Parliament's vote on Telecoms legislative proposals

BoR (14) 50 - BEREC views on the European Parliament first reading legislative resolution on the European Commission's proposal for a Connected Continent Regulation

3.1.2 BEREC's analysis of RLAH and input to EC request

The European Parliament's first reading legislative resolution on the proposed regulation from 3 April 2014 contained a proposal to abolish the retail roaming surcharges to allow customers to 'Roam Like at Home' (RLAH), subject to a fair use limit. On 9 April 2014, BEREC received a request from the Commission for advice in assessing the state of the wholesale roaming market and defining the so-called 'fair use' criteria, to inform discussions between the Commission and the co-legislators and to enable a smooth and consistent transition in the mobile market to any new requirements.

In October 2014 BEREC published its preliminary analysis of a RLAH scenario based on the European Parliament proposal adopted on 3 April 2014. This document was discussed with stakeholders at the Stakeholder Forum that took place on 16 October in Brussels.

During its 21st plenary meeting, held on 4-5 December 2014 in Brussels, the Board of Regulators approved BEREC's input to the Commission request in relation to roaming. The document approved by the Board of Regulators is addressed to the Commission and is not available to the public.

However, on 17 December 2014, via electronic voting procedure, BEREC approved the document 'International Roaming: Analysis of the impacts of Roam Like at Home (RLAH)', which is available to the public.

The published documents are based on the information received from NRAs in all Member States, from operators' and stakeholders' answers to a questionnaire, as well as input received from stakeholders during and after the BEREC Stakeholder Forum which took place on 16 October 2014.

Documents:

BoR (14) 44 – Request for input from the European Commission to BEREC in relation to wholesale roaming and fair use

BoR (14) 135 – Preliminary Analysis of a 'Roam like at home' scenario based on the proposal of the European Parliament adopted on 3 April 2014

BoR (14) 136 – BEREC's Preliminary Findings on RLAH and its impact

BoR (14) 187 – International Roaming: BEREC input to EC request

BoR (14) 209 – International Roaming: Analysis of the impacts of 'Roam Like at Home' (RLAH)

3.1.3 BEREC Opinion on the revised recommendation on relevant markets

The European Commission published in October 2014 a revised recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation, in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services. According to Article 15(1) of the Framework Directive, the main purpose of the Recommendation is to '[...] identify [...] those product and service markets within the electronic communications sector, the characteristics of which may be such as to justify the imposition of regulatory obligations set out in the Specific Directives, without prejudice to markets that may be defined in specific cases under competition law.'

On 24 March 2014, the European Commission provided BEREC with a final draft recommendation and explanatory note for this new recommendation, requesting BEREC's Opinion on this draft document. The review process involved several phases, including the issuing of a questionnaire to which BEREC and other stakeholders responded, as well as the preparation of a report by European Commission consultants, published in September 2013, entitled 'Future electronic communications markets subject to ex ante regulation'. BEREC has been involved throughout this review process.

As requested by the European Commission in March 2014, BEREC prepared and published its Opinion on this draft recommendation in accordance with Article 15(1) of the Framework Directive and Article 3(1)(c) of the BEREC Regulation.

Given the relevance of this recommendation on the market analysis procedure, BEREC actively participated in the process by organising a Stakeholder Workshop on Relevant Markets, which took place in February 2014, to hear views from stakeholders

regarding the draft recommendation. BEREC also organised meetings with the European Commission to exchange views and to provide the Commission with the NRAs' knowledge on the functioning of the markets and to ensure that BEREC's questions and concerns will be addressed.

This process culminated with the approval and publication of the BEREC Opinion on the revised recommendation on relevant markets in June 2014.

Document: BoR (14) 71 - BEREC Opinion on the Commission Recommendation on Relevant Product and Service Markets Susceptible to ex ante Regulation

3.2 Boosting the roll out of next generation networks

3.2.1 Common Positions on wholesale products

In 2012, following a public consultation, BEREC adopted its revised Common Positions (CPs), listing the best practice remedies to be implemented in former Markets 4 (wholesale local access), 5 (wholesale broadband access) and 6 (wholesale leased lines). In line with its work programme, in 2013 BEREC developed a methodology to monitor how national regulatory authorities (NRAs) have implemented the revised CPs. Through this monitoring exercise BEREC aims to gain a detailed understanding of which regulatory approaches work best for different national circumstances and also aims to inform its own harmonisation efforts. The proposed methodology (BoR (13) 108) was approved for publication at the 16th BoR plenary meeting in Riga in September 2013.

During 2014, BEREC carried out the first phase of its monitoring exercise.

A Questionnaire was sent out to 33 NRAs in early 2014 and received 31 responses. The analysis of the responses focused on those NRAs that had responded after BEREC's Revised Common Positions were adopted on 7 December 2012 up to and including 31 March 2014. In some cases, particularly where NRAs had consulted but not completed their market reviews by 31 March 2014 (e.g. former UK Markets 4 & 5), the results include responses received up to June 2014.

Phase 1 notifiers for the Wholesale Local Access (WLA) and Wholesale Broadband Access (WBA) markets included: Austria, Croatia, Cyprus, Estonia, Ireland, Latvia, Malta, Norway, Netherlands and the UK. Notifiers for the Wholesale Leased Lines market included: Belgium, Greece, Ireland, Spain, Sweden and the UK.

Further monitoring exercises are being planned for 2015 and 2016.

The results of this first phase of research were summarised in a report which was approved for publication at the 21st BoR Plenary in Brussels in December 2014.

Document: BoR (14) 171 - Monitoring implementation of the BEREC Common Positions on WLA, WBA and WLL – Phase 1

3.2.2 BEREK Guidance on the regulatory accounting approach to the economic replicability test

The purpose of the document is to provide guidance to NRAs from the regulatory accounting point of view on how to understand and deal with the relevant provisions of Commission Recommendation 2013/466/EU on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment³ related to the ex-ante economic replicability test (ERT) (within the framework of an Equivalence of Inputs (EoI) or equivalent procedure) and how to run such an ex-ante economic replicability test pursuant to Annex II.⁴

The Recommendation defines the 'concept' of the ERT. From a practical point of view, the ERT can be considered as a specific type of *ex-ante margin squeeze test*, which is already known from both regulators' current practice and also in ex-post form as a practice known (in principle) from competition law. The Guidance document covers the current practice of ex-ante margin squeeze tests as applied by NRAs and relates it to the main characteristics of the recommended ERT. Therefore, one of the purposes of the document is to establish clearly the distinction between the ex-ante sector-specific margin squeeze tests: the economic replicability test on the one hand and the ex-post margin squeeze test on the other. The similarities and differences between the ex-ante margin squeeze tests and the ERT (e.g. the legal basis, level of aggregation, wholesale services taken into account, timing and information used in the test, etc.) are dealt with.⁵ At this stage, the Guidance document cannot develop 'best practice'.

The Recommendation addresses Next Generation Access (NGA) products in particular. However, copper-based products cannot be excluded, especially if the product has NGA characteristics. The Guidance is drawn up as a more general approach, leaving room for the relevance of the single product to the NRA to be established, taking into account national circumstances. Finally, to ensure that both the Recommendation's aim to provide more pricing flexibility to Significant Market Power (SMP) operators and the ERT's purpose to preserve competition are met, the ERT needs to be applied intelligently and its parameters calibrated accordingly. Whereas the Recommendation emphasises the importance of promoting efficient investment and innovation in accordance with Article 8(5)(d) of Directive 2002/21/EC, NRAs will also need to ensure that they act in accordance with Article 8(2)(b) by taking all proportionate and appropriate measures to promote competition in the provision of electronic communications networks and services by ensuring that there is no distortion or restriction of competition – this may require a stricter form of ex-ante margin squeeze test than the ERT.

The Guidance document provides a comprehensive overview of the Recommendation's provisions related to the ERT and the NRAs' current practice when implementing an ex-ante margin squeeze test. While the ERT is specifically created

³ Commission Recommendation on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment (C(2013)5761 final), 11/09/2013, OJ L 251 of 21/09/2013.

⁴ In the Guidance document, the term 'ex-ante margin squeeze test' is reserved for the description of current practices, while the term 'economic replicability test' (ERT) is used in the meaning of the Recommendation as (future) 'ex-ante margin squeeze test' as the term 'margin squeeze test' is more commonly used for ex-post (competition law) procedures.

⁵ Other relevant guidance is also taken into account, namely the three BEREK BB CPs of 2012 on WBA (BoR (12) 128); on WLA (BoR (12) 127) and WLL (BoR (12) 126) as well as two ERG Reports of 2009 (ERG (09) 07 and ERG (09) 21), and the Commission Recommendation on regulated access to Next Generation Access Networks (NGA) (2010/572/EU), 20/09/2010, OJ L 251 of 25/09/2010.

for the purpose of the Recommendation, it builds upon the margin squeeze test as known from ex-post competition law, as well as on the ex-ante margin squeeze tests based on regulatory law. The ERT is a particular form of an ex-ante sector-specific margin squeeze test with the purpose of safeguarding competition, designed especially for situations where no cost-oriented wholesale access price obligation is imposed on NGA-related products. It focuses primarily on 'retail flagship products' and only on the most relevant regulated input identified at the chosen NGA-based regulated wholesale input, which therefore only limits its scope. It chooses the equally efficient operator (EEO) as the standard level of efficiency in order 'to support the SMP operators' investments in NGA networks' (Recital 64). NRAs may make adjustments for scale of the SMP operator's downstream costs to ensure a realistic prospect when market entry and expansion have been frustrated in the past.

Currently, when acting in accordance with Article 8(2)(b), most NRAs that already apply ex-ante margin squeeze tests use them as a complementary regulatory tool. Therefore, the scope of both wholesale and retail products subjected to the test is often broader, taking into account the interaction between different products and the impact on the competitive situation. The majority of NRAs apply the REO⁶/adjusted EEO test to promote competition and to facilitate market entry with the prospect of gaining dynamic efficiency which, in the long run, is expected to over-compensate for short-term static inefficiencies. This approach also takes account of the NGA investments of alternative operators while the Recommendation emphasises the SMP operator's NGA investment. Both the ERT and the current ex-ante margin squeeze tests of NRAs aim at ensuring competition. However, in the light of the objective of Article 8(2)(b) to promote competition, NRAs may apply stricter ex-ante margin squeeze tests.

The Recommendation provides that a LRIC+ approach is used as a relevant cost standard for downstream costs, which are defined as retail costs and other network costs. NRAs use a combination of cost standards, as appropriate for retail or relevant input (wholesale) costs. For the latter they tend to use LRIC+ (drawing on the SMP operator's costs as a proxy) while, for practical reasons, fully allocated costs (FAC) are often applied for retail costs as it can be taken more easily from the audited accounts of the SMP operator. From a regulatory accounting point of view it is important that combinations of cost standards are implemented consistently and with a view to the objectives pursued. For economic replicability it is important to use a forward-looking incremental cost approach that also takes into account sunk costs for the other network costs to ensure that alternative operators can compete in the downstream market on an equal basis.

Conceptually, the ERT is a 'lighter' test meant to provide more price flexibility to the SMP operator, while the ex-ante margin squeeze tests (currently applied by NRAs mostly as a complementary tool) are stricter with regard to the level of parameters, within which, NRAs would still feel comfortable that alternative operators have enough space to breathe. Specifically, if these limits are passed, a margin squeeze is found (i.e. the test failed) and the price setting of the SMP operator would be considered anti-competitive and would therefore be prohibited. The choice of how strictly the test is applied must be made by the NRA in light of the regulatory objectives to promote

⁶ REO: Reasonably efficient operator

sustainable competition and efficient investment, and based on the nature of the competition problem identified in the market analysis.

Documents:

BoR (14) 189 Report on the BEREC public consultation on the 'Guidance on the regulatory accounting approach to the economic replicability test' (i.e. ex-ante/sector specific margin squeeze tests)

BoR (14) 190 - BEREC Guidance on the regulatory accounting approach to the economic replicability test (i.e. ex-ante/sector specific margin squeeze tests)

3.2.3 Emerging challenges in next generation networks

At the beginning of the year, the NGN EWG discussed (active) layer 2 (Ethernet) wholesale access products (L2 WAP) imposed on either market 4 (wholesale local access) or market 5 (wholesale broadband access). In some of the countries considered, the need for an L2 WAP arose due to changes in the incumbent's access network caused by NGA rollout. This may lead to a situation where physical unbundling of copper access lines becomes less economically viable or is no longer technically possible. The Expert Working Group was also involved in the discussion on 'Harmonised European access products and ASQ' of the Commission's legislative on 'Connected Continent' at several stages of the debate (e.g. exchanges with the Commission and the European Parliament).

In October 2014, BEREC published the report 'Case Studies on Regulatory Decisions regarding Vectoring in the European Union'. Vectoring was on the agenda in 2014 as several operators in EU Member States planned or had already begun to introduce vectoring in their networks. As a response to this development some NRAs have already taken decisions regarding the application of vectoring. To get a deeper insight into these decisions and to foster an exchange of experience and contribute to the harmonisation of regulatory instruments used in the European Union, BEREC analysed regulatory decisions regarding vectoring in Austria, Belgium, Denmark and Germany. The analysis is descriptive and does not aim to be normative. It is not intended to recommend best practice. The report revealed the following findings: the four countries analysed promote the rollout of vectoring by ensuring that the operator deploying vectoring can do so exclusively; all decisions specify how the SMP operator has to provide information to other operators with regard to current and planned vectoring roll out; another common point is that an L2 access product is a prerequisite for applying exclusive vectoring. Apart from this, different regulatory approaches to the introduction of vectoring are used reflecting the national circumstances.

The regulatory decisions which enable a single operator to use vectoring exclusively on the sub-loop depend on the penetration of sub-loop unbundling (SLU):

- no SLU and no future SLU demand expected and, in addition, the SMP operator plans to roll out vectoring rather quickly and broadly: in this situation, the SLU obligation is entirely lifted on the national market and the regulatory decision regarding vectoring is asymmetric, i.e. only the SMP operator can use vectoring exclusively (BE);
- low SLU penetration and low SLU demand expected: the SLU obligation is lifted on a case-by-case basis and the regulatory decision regarding vectoring is also asymmetric (AT, DK);
- relatively high SLU penetration and relatively high future SLU demand expected: the SLU obligation is also lifted on a case-by-case basis, but the regulatory decision regarding vectoring is symmetric, i.e. an alternative network operator (ANO) can also use vectoring exclusively (DE).

In the Member States analysed, the vectoring roll out is just beginning (or has just begun) and therefore it remains to be seen how the regulatory decisions will work in practice.

A Plenary workshop on 'Challenges in an NGA environment: effective regulation for competitive NGA roll out' was held at Plenary 3 in Rome.

A workshop at EWG level was held in June 2014 to get an overview of the current status of IP-interconnection in MS including recent market/regulatory developments (e.g. market entry of Netflix) and whether formal complaints were filed with the NRAs or decisions taken by an NRA. Also the FCC Notice of proposed rulemaking, published in May 2014, was discussed. At a very general level it was concluded that IP interconnection still seemed to work. Some NRAs started to conduct some information gathering. Formal disputes have been few.

Document: BoR (14) 122 - Case Studies on Regulatory Decisions regarding Vectoring in the European Union

3.2.4 Facilitating access to radio spectrum

Together with the Radio Spectrum Policy Group (the RSPG), BEREC held a joint workshop on spectrum awards and challenges ahead for facilitating access to radio spectrum. On 11 November 2014, Members of BEREC and the RSPG came together in Brussels to discuss lessons learnt from 20 years of spectrum awards and challenges ahead. The agenda included speakers from numerous national regulators, the European Commission, academia and from spectrum auction consultants. The workshop also considered new opportunities for spectrum awards and considered many other related issues including, for example, the impact the demand for 5G suitable spectrum might have on the way spectrum is made available.

3.2.5 Common Position on geographic aspects of market analysis

In October 2008, ERG adopted a Common Position on geographic aspects of market analysis⁷. The Common Position explored under which circumstances a geographically differentiated approach to market analysis (definition and remedies) could be deemed appropriate and how such an approach could be implemented. In general, the main ideas expressed in the Common Position maintain their relevance and adequacy in relation to copper driven competition. However, since the adoption of the Common Position in 2008, there have been several developments. Basically, a further increase in the coverage of networks and operations of alternative providers has taken place, mainly because of the: i) increased unbundling of the incumbents' copper access networks, ii) increased importance of technologies other than xDSL (cable, Wi-Fi, mobile broadband, etc.) and iii) the development of high-speed fibre networks (NGA roll out). Moreover, there have been some Phase II cases launched by the European Commission related to the geographical scope of the markets.

⁷ ERG (08) 20 - Common Position on Geographic Aspects of Markets.

Considering this context, BEREC carried out a review of its Common Position in 2013 and 2014, taking into account the developments in the market described above, as well as feedback received by NRAs from the European Commission on Phase II cases.

This reviewed Common Position includes, among other issues, relevant guidance on geographical segmentation coming from notified cases and European Commission comment letters, a review on the relevant criteria for geographical analysis (giving special importance to the changes that NGA roll out could imply for market definition), a list of relevant aspects to be considered to adopt a geographical approach based on competitive conditions, as well as a discussion on possible ways to deal with different competitive situations, regarding remedies differentiation in particular.

Documents:

BoR (14) 72 – BEREC report on the public consultation of the draft review of the BEREC Common Position on geographical aspects of market analysis (definition and remedies)

BoR (14) 73 – BEREC Common Position on geographic aspects of market analysis (definition and remedies)

3.2.6 Equivalence of Inputs

The aim of the internal report was to provide some practical insights into the issues, challenges and trade-offs that NRAs are likely to face in implementing Equivalence of inputs (Eol). Both BEREC and the Commission recognise Eol as an effective, non-discriminatory remedy in ensuring a level playing field between SMP operators and alternative operators for wholesale access products (WLA, WBA and WLL).

The main messages emerging from the case study markets that were assessed were:

- Where Eol has been implemented, it has mostly been focused on ensuring effective competition in NGA. To some extent, the decision to apply Eol to NGA has been based on an assessment that it is more proportionate to apply Eol to new products/markets where new systems may need to be built from scratch;
- The specific remedy to which Eol applies (for example, passive infrastructure or active remedies), which has been imposed by each NRA, varies according to the model of NGA competition prevalent in each market;
- The implementation of Eol in the markets that the report investigated also varied in degree from focusing primarily on provisioning and repair to all product delivery and operational processes and extending to full functional separation.

The report made clear that NRAs should consider additional safeguards to ensure the effectiveness of Eol. These include quality of service (QoS), information requirements (on products and infrastructure) and system safeguards to facilitate a competitive downstream market. Consequently, NRAs have imposed requirements for Key Performance Indicators (KPIs), Service Level Agreements (SLAs) and Service Level Guarantees (SLGs) to ensure both a minimum QoS threshold and to better enable the NRA to monitor compliance with Eol obligations. Some NRAs have imposed an obligation on the SMP operator itself to take on a more proactive monitoring and reporting role, such as the creation of a supervisory board within the SMP operator

(but composed of majority independent directors) whose role it is to ensure the SMP operator is effective in compliance monitoring and reporting.

Document: BoR (14) 188 – Internal report - Equivalence of Inputs: A preliminary report on issues and potential approaches

3.3 Consumer empowerment and protection

3.3.1 Net neutrality

Over the previous years, BEREC has built up comprehensive expertise on net neutrality (NN), which describes the principle of equal treatment of network traffic. In 2012, BEREC presented its overall net neutrality policy⁸ and continued the commitment to net neutrality when initiating the work streams of (a) monitoring quality of internet access services in the context of net neutrality and (b) ecosystem dynamics and demand side forces in net neutrality (Ecodem).

After the Commission presented its proposal for a 'Connected Continent' or TSM in September 2013, the European Parliament adopted its first reading resolution in April 2014. BEREC published its views⁹ on the Parliament's resolution in May 2014, including some remarks on net neutrality.

a) Monitoring quality of internet access services in the context of net neutrality

This work stream was established to facilitate exchange of expertise and build know-how on monitoring the quality of internet access services in the context of net neutrality. The work focused on internet access service quality monitoring systems covering two main cases of use:

- ensuring transparency on the quality of the internet access service for end users;
- regulatory supervision through monitoring the quality of the internet access service with regard to potential degradation of service (Ref. USD 22(3)).

The work stream conducted a public consultation running from 17 March to 28 April, and received replies from Internet Service Providers (ISPs), Content and Application Providers (CAPs), consumer organisations and measurement providers. Respondents generally welcomed BEREC's position regarding the need for efficient internet access service quality monitoring methods for transparency and regulatory supervision.

The BEREC NN QoS monitoring report was published at the end of 2014, describing available quality monitoring methods and providing recommendations for future quality monitoring systems. Furthermore, the report discussed the possibility of establishing a common multi-NRA opt-in quality monitoring system.

⁸ BoR (12) 146 Summary of BEREC positions on net neutrality

⁹ BoR (14) 50 BEREC views on the European Parliament first reading legislative resolution on the European Commission's proposal for a Connected Continent Regulation.

As announced in the BEREC 2015 Work Programme, following the 2014 NN QoS monitoring report, BEREC will conduct a feasibility study on quality of service monitoring in the context of NN, based upon which BEREC will take a decision on the potential development of an opt-in monitoring system.

Documents:

BoR (14) 116 - Consultation report for BEREC report on monitoring quality of internet access services in the context of net neutrality

BoR (14) 117 - Monitoring quality of internet access services in the context of net neutrality

b) Ecosystem dynamics and demand side forces in net neutrality (Ecodem)

In 2013, BEREC initiated this work stream to provide NRAs with a more evidence-based understanding of the extent to which the dynamics between consumers, ISPs and Content and Application Providers (CAPs) impact net neutrality policy development in Europe.

The work continued throughout 2014 with BEREC gathering information and empirical data, mainly through the commissioning of two pieces of external research: a piece of desk research and a consumer research study. BEREC worked closely with consultants in the second half of 2014 to provide guidance, particularly in relation to the consumer research.

The report, to be adopted in 2015, will inform BEREC's general approach and support future analysis by NRAs of their national markets, while also contributing to the ongoing public debate on NN issues.

3.3.2 Perspectives on best practice regarding internet access in the consumer market

BEREC recognises the importance of securing consumer choice as a driving force for the development of the market for electronic communications. Consumer awareness through transparency and the ability to exercise choice through accessibility and switching are cornerstones on which large parts of the EU regulation on consumer protection are built. BEREC has previously considered these issues in its 2010 report on 'Best Practices to Facilitate Switching' and its 2011 'Guidelines on Transparency in the Scope of Net Neutrality'.

In 2014 BEREC produced an internal report on how the consumer market for internet access is regulated in different EU countries. It aimed to provide an insight into the conditions under which consumers gain access to internet services and how their contractual relationship with service providers is determined.

The report covered a number of aspects of consumers' experiences in the market for internet access, for example:

- policies to facilitate open, competitive markets;
- the provision of clear, accurate information;

- the ease of switching between service providers;
- customer service;
- handling complaints and resolving disputes.

NRAs were sent a questionnaire to find out how these issues are currently regulated, both for stand-alone internet access and for bundled services that include internet access. The responses were then compared, highlighting where there were greater similarities or differences in approach.

The report came in the context of regulatory developments, in particular the European Commission's Telecoms Single Market (TSM) proposals¹⁰, which may involve further work by BEREC on these issues.

Document: BoR (14) 180 Internal Report - Perspectives on best practices regarding internet access in the consumer market

3.4 Boosting the internal market for services

3.4.1 International roaming

In 2014 BEREC's work on roaming focused on analysing the effects of the introduction of RLAH, as mentioned previously. BEREC drafted an answer to a request from the European Commission containing a set of questions about RLAH. Furthermore, BEREC published an analysis of RLAH, which was also discussed with stakeholders at the Stakeholder Forum that took place in October 2014.

In addition to the analysis of RLAH, BEREC produced two new benchmark reports on the evolution of volumes and prices at the retail and wholesale levels. In 2014 BEREC also published its second report on transparency and comparability of tariffs, collecting information from NRAs and operators on tariffs, information and tools available to consumers to be able to compare and select different international roaming tariffs.

In 2013 BEREC worked on completing a set of guidelines regarding the application of Regulation (EU) No 531/2012 (Roaming Regulation III). In 2014 BEREC adopted a procedure on supporting NRAs in applying the regulation, especially on those issues relating to provisions on separate sale of roaming.

a) International roaming benchmark data

Pursuant to Article 19 of Roaming Regulation III, BEREC shall regularly monitor the retail and wholesale roaming prices for voice, SMS and data services, as well as the volumes and revenues generated by the mobile operators across Member States. These benchmark data reports are widely acknowledged by the relevant stakeholders and are used by the Commission to review the Regulation. BEREC published the 12th benchmark report in March 2014 and the 13th benchmark report in September 2014.

¹⁰ For instance, see the proposals outlined at: <http://ec.europa.eu/digital-agenda/en/connected-continent-single-telecom-market-growth-jobs>

Documents:

BoR (14) 16 – International Roaming BEREC Benchmark Data Report April 2013 – September 2013

BoR (14) 115 – International Roaming BEREC Benchmark Data Report October 2013 – March 2014

b) Monitoring transparency and comparability of international roaming tariffs

Pursuant to the same article, BEREC is also responsible for regularly monitoring the transparency and comparability of roaming tariffs, and presenting the findings in a report to be produced once a year. The objective of this report is to monitor and increase consumer awareness in light of the variety of roaming tariffs, as well as to increase transparent market conditions and the ability for customers to make well-informed decisions. To this end, the report addresses two key questions on whether information on price and tariff conditions was made available in a clear and convenient way and whether consumers were able to compare those tariffs. Operators and regulators were asked several questions revolving around these two key issues. BEREC published its 2nd BEREC Report on transparency and compatibility of tariffs in December 2014.

The report demonstrates that customers face a wide variety of international roaming tariffs ranging from linear tariffs (e.g. the Eurotariff) to daily, weekly or monthly bundles that include different roaming services to specific tariffs where domestic tariffs are also included. Many providers also offer approaches similar to ‘roam like at home’ tariffs as per default alternative tariffs where customers can use their domestic bundle when roaming, although generally restricted to EEA countries or within the footprint of the group.

Most operators report that they provide extensive information on conditions and prices for each tariff on their websites and inform customers about tariffs by sending SMS messages, for example. However, the responses indicate that a large number of operators do not inform their customers when they reach a time or volume limit or how services are charged when the usage has reached this limit.

Providing data on real-time consumption is still not sufficient. However, it is noted that providers have improved their performance in relation to the provision of real time information on consumption compared to the 2013 Report.

Document: BoR (14) 170 – Report on Transparency and Comparability of International Roaming Tariffs

c) Support for NRAs on the application of Roaming Regulation III (EU) 531/2012

In addition to the periodical reports, BEREC also provides support to National Regulatory Authorities of communications in interpreting Roaming Regulation III and in applying the three associated BEREC Guidelines on international roaming services.

The procedure aims to contribute to a harmonised interpretation of the Roaming Regulation by sharing information between NRAs and the BEREC Expert Working Group on International Roaming.

In addition, this procedure may help the Expert Working Group to receive feedback regarding the Guidelines and any problems encountered in applying the Roaming Regulation.

Document: BoR (14) 15 - BEREC Procedure to Address Questions and Share Information among NRAs on the Application of Regulation (EU) No 531/2012

3.4.2 M2M

The project team dedicated to Machine-to-Machine (M2M) communication was created in 2013 within the Framework Implementation EWG to identify the possible intersections of M2M services with the EU regulatory framework for electronic communications.

In 2014, the project team interviewed several stakeholders to gather their views on potential regulatory barriers to the development of M2M services and on measures that might be taken by BEREC to foster such a development.

The interviews with stakeholders allowed BEREC to gather a considerable amount of data and different views on regulatory challenges in the areas related to:

- spectrum,
- numbering and addressing,
- roaming,
- standardisation, alliances and switching connectivity provider,
- data security and privacy, and
- the authorisation system.

In 2015, the M2M work stream will be addressed as 'Advanced connectivity of devices, systems and services (M2M)' and will become part of the Next Generation Networks EWG.

Document: BoR (14) 178 - Internal report on Machine to Machine Communications

3.4.3 Smart grids

In December 2013 BEREC received an invitation from the European Commission to participate in the Expert Group 3 on Regulatory Recommendations for Smart Grids Deployment (EG3) of the Commission's Smart Grids Task Force (SGTF). BEREC has decided to designate two representatives for following EG3 and has set up a work stream (the Smart Grids Work Stream (SG WS)) to support these representatives and, if needed, to develop a BEREC position towards smart grids.

To explain the background of the participation of BEREC in EG3 and to set out BEREC's preliminary considerations on the smart grids topic, the SG WS produced a BEREC internal report on telecommunications' issues in smart grids. The internal

report explains the basics of smart grids and the link between smart grids development and telecommunications, develops the regulatory implications from the viewpoint of telecommunications (and therefore BEREC and the individual NRAs), debates possible ways forward and provides advice on these. The SG WS came to the following conclusions: for the time being, no clear and major problems have been identified in the context of telecommunications and smart grids. The roll-out of telecommunications so far has been achieved by market driven processes. Requirements set by (future) smart grid operators have so far been solved without any regulatory intervention. However, it might still be too premature for NRAs to refrain from any role. To this end, some regulatory issues exist that could be picked up by NRAs.

Furthermore, the designated BEREC representatives participated in the meetings of the EG3 of the SGTF. In January 2015, the EG3 delivered a report on regulatory recommendations for the deployment of flexibility.¹¹ With the completion of this report, the active involvement of BEREC in the EG3 has come to an end and the SG WS has been dissolved.¹²

Document: BoR (14) 179 - Internal report on telecommunications' issues in smart grids

3.5 Horizontal and regulatory quality aspects

3.5.1 Benchmarking on MTR, FTR and SMS

Following up on the work started by the EWG, BEREC has been collecting and publicly reporting information on mobile termination rates (MTRs), while data collection about fixed termination rates (FTRs) and SMS termination rates (SMS TRs) started in 2011.

The TR benchmarking exercises have been developed in close cooperation with the Commission Communications Committee (COCOM), and from 2013 the Commission has made use of the BEREC TR data in its annual publications on the telecoms industry in Europe (DAS).

In 2014, BEREC collected TR data from its members and observer states (MTRs and SMS TRs on a semester basis and FTRs on an annual basis) to monitor the evolution of termination rates and the information on the regulatory mechanism used in determining them.

In particular, in 2014 BEREC published the following TR benchmark reports:

Documents:

BoR (14) 55 – Termination Rates Benchmark Snapshot (as of January 2014) - Integrated Report on Mobile Termination Rates, Fixed Termination Rates & SMS Termination Rates, June 2014, delivered at the 19th meeting of the BoR;

¹¹ <https://ec.europa.eu/energy/sites/ener/files/documents/EG3%20Final%20%20January%202015.pdf>

¹² However, the Work Programme 2015 stipulates that BEREC will give its support to enabling cross-sector cooperation for broadband and smart grid deployment by continuing to provide input, as requested, to the European Commission Expert Group (EG) 3 on Smart Grids, Work Programme 2015 BEREC Board of Regulators, BoR (14) 185, p. 17.

BoR (14) 173 – Termination Rates Benchmark Snapshot (as of July 2014) - Integrated Report on Mobile Termination Rates & SMS Termination Rates, November 2014, delivered at the 21st meeting of the BoR

3.5.2 Regulatory Accounting in Practice Report

The 10th report summarises the findings of a detailed survey of regulatory accounting frameworks across Europe. The information has been gathered from national regulatory authorities and covers the implementation of regulatory cost accounting methodologies, which include allocation as well as annualisation methodologies, systems and processes.

These regulatory accounting frameworks provide NRAs with financial information essential to facilitating some of their significant regulatory decisions such as setting price controls, monitoring compliance with ex ante obligations (such as cost orientation of charges and non-discrimination) and informing market reviews.

The report provides an up-to-date factual report on the regulatory accounting frameworks implemented by NRAs and an assessment of the level of consistency achieved. The report sets out an overview of the regulatory accounting frameworks updated to April 2014 and also illustrates, where possible, trends and comparisons with data collected each year, starting from 2006.

The report develops a deeper analysis that concentrates on the following four key wholesale markets: Wholesale Line Rental (WLR), Unbundled Access (M4/2007), Broadband Access (M5/2007) and Leased Lines Terminating Segments (M6/2007). Moreover an analysis is given of the cost base and allocation methodologies used for fixed (M3/2007) and mobile (M7/2007) termination markets.

Furthermore, as in the 2013 report, to emphasise factors influencing NRAs regulatory strategy, additional structural data (e.g. population, market structure and infrastructure) have been collected from NRAs. Considerable differences in the market/competitive situation as well as the infrastructure in place can be observed between (and within) the responding countries, reflecting the different external and technical requirements which NRAs need to take into account.

The report also looks at annualisation methodologies provided by respondent NRAs. As in the 2013 report, accounting information for some products in market 4, such as copper access (including LLU, SA and SLU), fibre access (LLU and VULA), dark fibre access and duct access, have been analysed.

Moreover, the 2014 report includes the following two additional themes:

- an overview of the implementation of Recommendation 2013/466/EU on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment of 11 September 2013 with regard to costing methodologies;
- a section on the actual implementation of the Termination Rates Recommendation 2009/396/EC of 7 May 2009.

The overall picture is relatively stable in comparison to the previous year with just a small number of changes by NRAs since the previous year. There are clear preferences for price control methods (cost orientation alone or in combination with price cap), cost base (current cost accounting – CCA) and allocation methodologies (mainly long run incremental costs (LR(A)IC) with fully distributed costs (FDC) preferred only in a few – mainly retail – markets). The degree of consistent application of methodologies continues to be high and accommodates the use of elements or parameters that reflect national circumstances. These findings reflect the primary cost base or allocation methodology selected by an NRA, but do not highlight situations where an NRA would strengthen its financial analysis by comparing outcomes from one principal methodology with alternative approaches, such as comparing bottom-up models with top-down or incurred costs. For all markets, except market 1, the combination of CCA and (FL) LR(A)IC is the most favoured approach. In particular, this combination is preferred in the termination markets (market 3 and market 7) where the LRIC approach often takes the form of pure LRIC to comply with Recommendation 2009/396/EC on termination rates.

The analysis over time of the key wholesale markets – Unbundled Access (market 4), Broadband Access (market 5) and Leased Lines Terminating Segment (market 6) – has shown a clear preference for cost orientation, a trend towards CCA and a fairly even distribution of LRIC and FDC accounting methods. Slightly different results are observed for the Wholesale Line Rental market, where retail minus is the favoured price control method, HCA (historical cost accounting) and CCA are used in the same proportion and FDC is clearly the preferred choice of allocation methodology.

Taking into account the information detailed for different products in market 4, it results that cost orientation is the preferred price control method for all the products under analysis, together with CCA as a cost base. As far as the allocation methodology is concerned, LR(A)IC is prevailing for copper access, while for duct access products a clear preference for FDC is observed.

Overall the 2014 data confirms the trend towards an increasingly consistent approach to regulatory accounting obligations among NRAs. We see signs of stabilisation in the application of particular methods for cost valuation or cost allocation by NRAs. The latter indicates that NRAs are providing predictable and stable regulatory environments in their countries.

Good progress has been made in developing effective regulatory accounting frameworks to meet the needs of NRAs. However, this is a complex and highly technical topic which requires regular maintenance and enhanced implementation of the regulatory accounting framework as competition develops, technology improves and new regulatory challenges emerge.

Document: BoR (14) 114 BEREC Report Regulatory Accounting in Practice 2014

3.5.3 Framework implementation – institutional aspects

Following on from 2013, BEREC developed further internal reflections around NRAs' institutional settings and regulatory capacity, while the envisaged reflection around

notification-related requirements, within the context of the general authorisation regime, was absorbed by the work on the draft TSM regulation, which includes proposals in this respect.

In 2014, with the support of the BEREC Office, BEREC also began classifying Article 7/7a Phase II cases managed so far, with a view to a qualitative analysis of the arguments raised by the European Commission, the relevant reasoning and the BEREC conclusions.

4 Article 7/7a Framework Directive procedures

During 2014, ten Article 7/7a cases were opened, concerning 11 notifications. They are outlined in the table below:

1. Case LV/2014/1538 – Latvia

Market	Call termination on individual public telephone networks provided at a fixed location (market 3 of the 2007 Recommendation)
Description	Phase II was opened under Article 7a on 3 February 2014. The BEREC Opinion was adopted on 14 March 2014 and published on 18 March. BEREC was of the opinion that the European Commission's serious doubts were justified in that the flaw in SPRK's proposed benchmarking methodology to set FTRs departed from the TR Recommendation without valid justification.
Outcome	SPRK amended its notification and on 5 May 2014 the European Commission lifted its reservations.
Document	BoR (14) 39 - BEREC Opinion on Phase II investigation pursuant to Article 7a of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case LV/2014/1538 Wholesale voice call termination on individual fixed networks (market 3) in Latvia

2. Case EE/2014/1572 – Estonia

Market	Call termination on individual public telephone networks provided at a fixed location (market 3 of the 2007 Recommendation) in Estonia
Description	Phase II was opened under Article 7a on 7 April 2014. The BEREC Opinion was adopted on 22 May 2014 and published on 27 May. BEREC considered that the European Commission's serious doubts were mostly justified.
Outcome	On 25 June 2014 ECA withdrew its notification.
Document	BoR (14) 65 – BEREC Opinion on Phase II investigation pursuant to Article 7a of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case EE/2014/1572 the market for call termination on individual public telephone networks provided at a fixed location (market 3) in Estonia

3. Case CZ/2014/1583 – Czech republic

Market	Wholesale terminating segments of leased lines (market 6 of the 2007 Recommendation)
Description	Phase II was opened under Article 7a of the Framework Directive on 5 May 2014.
Outcome	CTU withdrew its notification on 6 May 2014. There was, therefore, no need to establish a BEREC EWG.
Document	A BEREC Opinion was not issued.

4. Case DE/2014/1605 – Germany

Market	Wholesale voice call termination on individual mobile networks in Germany (market 7 of the 2007 Recommendation)
Description	Phase II was opened under Article 7a on 20 June 2014. The BEREC Opinion was adopted on 24 July 2014 and published on 29 July. BEREC considered that the European Commission's serious doubts were justified in that (i) BNetzA's proposed TRs were not based on a pure BU-LRIC costing methodology which, as recommended by the Commission, generally results in a better competitive outcome, and (ii) BNetzA had not provided a valid justification for deviating from the TR Recommendation and, in particular, had not provided evidence to support its view that this decision would be better suited to meet the policy objectives of promoting efficiency and sustainable competition and maximising consumer benefits than pure BU-LRIC.
Outcome	On 17 October 2014, the European Commission issued a recommendation that BNetzA should amend or withdraw the remedies relating to the price caps for termination rates in Germany to ensure that the evaluation of the efficient costs applied to termination markets was based on a pure BU-LRIC methodology. BNetzA adopted the final decision and published a Reasoned Justification for not following the recommendation.
Document	BoR (14) 105 - BEREC Opinion on Phase II investigation pursuant to Article 7a of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case DE/2014/1605 Wholesale voice call termination on individual mobile networks (market 7) in Germany

5. Case LT/2014/1622 – Lithuania

Market	Call termination on individual public telephone networks provided at a fixed location (market 3 of the 2007 Recommendation)
Description	Phase II was opened under Article 7a of the Framework Directive on 14 July 2014.

Outcome	RRT withdrew its notification on 16 July 2014. There was, therefore, no need to establish a BEREC EWG.
Document	A BEREC Opinion was not issued.

6. Case DE/2014/1642 – Germany

Market	Call termination on individual public telephone networks provided at a fixed location (market 3 of the 2007 Recommendation) in Germany
Description	Phase II was opened under Article 7a on 10 September 2014. The BEREC Opinion was adopted on 22 October 2014 and published on 24 October. BEREC considered that the European Commission's serious doubts were justified in that (i) BNetzA's proposed TRs were not based on a pure BU-LRIC costing methodology which, as recommended by the Commission, generally results in a better competitive outcome, and (ii) BNetzA had not provided a valid justification for deviating from the TR Recommendation and, in particular, had not provided evidence to support its view that this decision would be better suited to meet the policy objectives of promoting efficiency and sustainable competition and maximising consumer benefits than pure BU-LRIC.
Outcome	On 16 December 2014, the European Commission issued a recommendation that BNetzA should amend or withdraw the remedies relating to the price caps for termination rates in Germany to ensure that the evaluation of the efficient costs applied to termination markets was based on a pure BU-LRIC methodology. BNetzA adopted the final decision and published a Reasoned Justification for not following the recommendation.
Document	BoR (14) 160 - BEREC Opinion on Phase II investigation pursuant to Article 7a of Directive 2002/21/EC as amended by Directive 2009/140/EC: DE/2014/1642 - Call termination on individual public telephone networks provided at a fixed location (market 3) in Germany

7. Case DE/2014/1660 – Germany

Market	Call termination on individual public telephone networks provided at a fixed location (market 3 of the 2007 Recommendation) in Germany
Description	Phase II was opened under Article 7a on 7 November 2014. The BEREC Opinion was adopted on 15 December 2014 and published on 17 December. BEREC considered that the European Commission's serious doubts were justified in that (i) BNetzA's proposed TRs were not based on a pure BU-LRIC costing methodology which, as recommended by the Commission, generally results in a better competitive outcome, and (ii) BNetzA had not provided a valid justification for deviating from the TR

	Recommendation and, in particular, had not provided evidence to support its view that this decision would be better suited to meet the policy objectives of promoting efficiency and sustainable competition and maximising consumer benefits than pure BU-LRIC.
Outcome	<p>On 9 March 2015, the European Commission issued a recommendation that BNetzA should amend or withdraw the remedies relating to the price caps for termination rates in Germany to ensure that the evaluation of the efficient costs applied to termination markets was based on a pure BU-LRIC methodology.</p> <p>BNetzA adopted the final decision and published a Reasoned Justification for not following the recommendation.</p>
Document	BoR (14) 206 - BEREC Opinion on Phase II investigation pursuant to Article 7a of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case DE/2014/1660 Call termination on individual public telephone networks provided at a fixed location (market 3) in Germany

8. Cases DE/2014/1666-1667 – Germany

Market	Wholesale voice call termination on individual mobile networks in Germany (market 2 of the 2014 Recommendation)
Description	<p>Phase II was opened under Article 7a on 24 November 2014.</p> <p>The BEREC Opinion was adopted on 14 January 2015 and published on 16 January. BEREC considered that the European Commission's serious doubts were justified in that (i) BNetzA's proposed TRs were not based on a pure BU-LRIC costing methodology which, as recommended by the Commission, generally results in a better competitive outcome, and (ii) BNetzA had not provided a valid justification for deviating from the TR Recommendation and, in particular, had not provided evidence to support its view that this decision would be better suited to meet the policy objectives of promoting efficiency and sustainable competition and maximising consumer benefits than pure BU-LRIC.</p>
Outcome	<p>On 23 March 2015, the European Commission issued a recommendation that BNetzA should amend or withdraw the remedies relating to the price caps for termination rates in Germany to ensure that the evaluation of the efficient costs applied to termination markets was based on a pure BU-LRIC methodology.</p> <p>BNetzA adopted the final decision and published a Reasoned Justification for not following the recommendation.</p>
Document	BoR (15) 04 - BEREC Opinion on Phase II investigation pursuant to Article 7a of Directive 2002/21/EC as amended by Directive 2009/140/EC: Cases DE/2014/1666-1667 Wholesale voice call termination on individual mobile networks (market 2) in Germany

9. Case FR/2014/1670 – France

Market	Wholesale SMS termination on individual mobile networks (market not included in any recommendation)
Description	<p>Phase II was opened under Article 7 on 9 December 2014. The BEREC Opinion was adopted on 29 December 2014 and published on 6 January 2015. BEREC considered that the Commission's serious doubts regarding the draft decision of the French Regulatory Authority on the need to analyse competitive constraints on a forward looking basis, a potentially broader market for SMS termination in France and SMP assessment were partially justified.</p> <p>BEREC also recommended that ARCEP should integrate the additional supportive evidence that was presented to both the Commission and BEREC into the final decision.</p>
Outcome	On 28 January 2015 the notification was withdrawn by ARCEP.
Document	BoR (14) 218 - BEREC Opinion on Phase II investigation pursuant to Article 7 of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case FR/2014/1670 Wholesale SMS termination on individual mobile networks in France

10. Case DE/2014/1685 - Germany

Market	Call termination on individual public telephone networks provided at a fixed location in Germany (market 1 of the 2014 Recommendation)
Description	<p>Phase II was opened under Article 7(a) on 18 December 2014. The BEREC Opinion was adopted on 29 January 2015 and published on 2 February. BEREC considered that the European Commission's serious doubts were justified in that (i) BNetzA's proposed TRs were not based on a pure BU-LRIC costing methodology which, as recommended by the Commission, generally results in a better competitive outcome, and (ii) BNetzA had not provided a valid justification for deviating from the TR Recommendation and, in particular, had not provided evidence to support its view that this decision would be better suited to meet the policy objectives of promoting efficiency and sustainable competition and maximising consumer benefits than pure BU-LRIC.</p>
Outcome	On 21 April 2015, the European Commission issued a recommendation that BNetzA should amend or withdraw the remedies containing the price control obligation in order to ensure that the evaluation of the efficient costs for the rates applied on the fixed termination markets is based on a pure BU-LRIC methodology, as being the most appropriate methodology for the regulation of the rates applicable in the fixed termination markets.

Document	BoR (15) 21 - BEREC Opinion on Phase II investigation pursuant to Article 7a of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case DE/2014/1685 Call termination on individual public telephone networks provided at a fixed location in Germany
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5 Representation and cooperation

5.1 Events, speeches and presentations

The 2014 BEREC Chair gave a number of presentations and meetings during 2014, outlined in the table in Annex 1 of the report.

5.2 Workshops

During 2014, a total of seven workshops were organised by BEREC. Three of them took place on the day preceding the plenary meetings.

On 26 February 2014, preceding the 18th plenary meeting in Stockholm BEREC held a workshop with stakeholders on the Commission recommendation on relevant markets. On 27 September 2014, preceding the 20th BoR plenary meeting in Rome, the 'BEREC Workshop on Challenges in an NGA environment: Effective regulation for competitive NGA roll out' was organised. On 3 December 2014, preceding the 21st BoR plenary meeting in Brussels, two workshops were organised. The workshop on International Roaming provided an opportunity to discuss the different aspects of RLAH. The second workshop was entitled 'What should be the vision for a telecoms Single Market in Europe?' and covered, in particular, the European Commission's vision of a telecoms single market.

During 2014 another three workshops and a hearing session were organised:

On 29 April 2014 BEREC organised a Roundtable on Equivalence of Inputs.

The BEREC Framework Implementation Expert Working Group organised, as mentioned previously, a session of hearings dedicated specifically to Machine to Machine (M2M) on 29-30 September 2014.

The joint BEREC - RSPG workshop on 'Facilitating access to radio spectrum – lessons learned after 20 years of awards' was held on 11 November 2014.

5.3 BEREC Stakeholder Forum

During the past few years BEREC has put an emphasis on cooperation with its stakeholders. To this end, BEREC organised the 2nd meeting of the BEREC Stakeholder Forum on 16 October 2014 in Brussels with a view to strengthening the dialogue on issues of strategic importance between BEREC and the relevant stakeholders.

The BEREC Stakeholder Forum has been established with a view to providing a direct interactive platform for discussion between BEREC and its stakeholders. This platform also supports the traditional consultation process taking place before the adoption of final versions of BEREC documents.

The meeting was attended by high-level representatives of more than thirty stakeholder associations and companies active in BEREC's fields of competence at European level, National Regulatory Authorities for electronic communications networks and services established in the EU Member States, EFTA states and candidate states for accession to the EU and the European Commission. The total number of participants reached a high level of about 160 attendants.

The meeting focused on four topics: BEREC Strategy 2015-2017, BEREC Work Programme 2015, ex ante margin squeeze test, and international roaming. The meeting served as a platform to present BEREC's draft documents on these topics and to receive preliminary feedback on them. For roaming, the Stakeholder Forum meeting provided the opportunity for an exchange of views on this very current topic and to feed into the process of preparing the BEREC view on roaming.

5.4 International cooperation

Given the dynamics of the global market in the context of the electronic communications sector, it is important to develop an international dimension to have a global picture of the developments, trends and challenges tackled by different interlocutors. In view of this, it is hugely important for BEREC to exchange information and disseminate regulatory best practice beyond its 'geographic' borders. Accordingly, during 2014, BEREC established (or further developed) formal frameworks aimed at cooperation with strategic partners, namely other regulatory organisations and NRAs. At this level, BEREC aimed to promote discussions with different regions that have common and vibrant sectorial challenges. This was the case with Regulatel (the Latin American Telecommunications Regulators Forum), EaPeReg (the Eastern Partnership Regulators Group), EMERG (the Euro-Mediterranean Regulators Group) and the Federal Communications Commission (FCC | USA). BEREC also arranged a study trip to Japan, in consideration of contacts with both governmental and industry players.

a) BEREC – Regulatel

The cooperation already established with the group of Central and Latin American Regulators has been further developed to strengthen the existing links. Based on the terms of the MoU signed in November 2013, a framework was established to develop the relationship between BEREC and Regulatel, based on: joint working groups, an annual summit and information sharing. Accordingly, during 2014, BEREC actively participated in three joint working groups on roaming, net neutrality and end users, and QoS, as well as attending the annual summit on 'Internet and regulatory challenges', in addition to sharing information. BEREC also participated in the Regulatel Plenary in November, where the working groups for 2015 to be developed in cooperation with BEREC were identified. The 2015 Regulatel Chair (the NRA from Puerto Rico) also participated, as an observer, at the BEREC Plenary in Rome in September.

b) BEREC – EMERG

BEREC continued and enhanced its cooperation with the Euro-Mediterranean countries during 2014. Special impetus was given at this level with the signing of an MoU, which established the terms of the cooperation to be developed, based on organising joint workshops and an annual summit, and information sharing. Accordingly, there was a clear commitment, particularly from those NRAs which are members of both BEREC and EMERG, to ensure the exchange and sharing of knowledge on topics of interest to both sides.

c) BEREC – EaP

Cooperation between BEREC and the Eastern Partnership group of regulators (representing Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine) has developed gradually since 2010, mainly through the participation of BEREC experts at technical workshops. During 2014, there were efforts to strengthen this cooperation, which was finally accomplished with the signing of the MoU with BEREC in December (similar to those already signed with Regulatel and EMERG), encompassing the exchange of information by organising joint workshops and an annual summit. BEREC also participated in this group's Plenary in December, which defined the terms of the common cooperation at the level of joint working groups.

d) BEREC – FCC

This cooperation goes back to 2012 when a MoU was signed between BEREC and the FCC to exchange views and to compare regulatory approaches in both regions. The MoU was revised in 2013 and, during 2014, an exchange of views took place by video conference on the state of competition in the US and Europe, covering different areas such as market reviews, ICT investment, mobile markets and broadband (in the context of the transition to an app economy).

e) Mission to Japan

As has been the practice in recent years, BEREC organised a Board Study trip to Japan to gain an insight into the development of the Japanese sector. The BEREC delegation met representatives of the Ministry of the Interior and Communications of Japan, including the Radio Department and the Telecommunications Business Department. The BEREC delegation also had meetings with several representatives of Japanese industry, such as NTT, KDDI, SoftBank, Ericsson, SONY and Nissan Motors. In terms of key findings from those meetings, BEREC took note on some major differences regarding policy and regulation, as well as market developments.

5.5 Engagement with the EU institutions

BEREC is entrusted to contribute to the functioning of the internal market for electronic communications networks and services by, among other things, delivering opinions on draft decisions, recommendations and guidelines and assisting the European

Parliament, the Council and the Commission as well as NRAs in the dissemination of best practice.

In this respect, during 2014 BEREC provided formal advice to the Commission on the proposed recommendation on relevant markets. In addition, BEREC has given its expert advice and issued several opinions on legislative proposals during 2014, particularly those relating to the Telecoms Single Market, as detailed above. Furthermore, within this process, BEREC has developed a specific way of cooperating with the Commission by participating in 'What-if meetings', where the Commission and BEREC discussed issues in an informal setting. During 2014 BEREC had three informal meetings with the Commission regarding the TSM proposals. BEREC has also attended European Parliament and Council Working Parties' meetings where it has given its expert opinion.

6 Organisational issues

6.1 Organisational issues

a) 2014 BEREC Chair and Vice-Chairs

The Board of Regulators appoints its Chair and Vice-Chairs from among its members. Pursuant to Article 4(4) of the BEREC Regulation, the term of office of the Chair and of the Vice-Chairs is one year. In compliance with the provision of Article 2(1) of the Rules of Procedure of the Board of Regulators, before serving her/his term as Chair for one year, the Chair firstly has to serve one year as a Vice-Chair. To ensure the continuity of BEREC's work, the Chair has to serve as a Vice-Chair for the year following her/his term as Chair.

In addition to the support provided to the Chair by the two Vice-Chairs, the Board of Regulators may decide to elect other Members as additional Vice-Chairs for one year.

At its last ordinary meeting for 2013, due to his resignation from the post of President of the Hellenic Telecommunications and Post Commission (EETT), Dr Leonidas KANELLOS, the BEREC Chair for 2013, also resigned from the post of BEREC Vice-Chair for 2014.

Therefore, in accordance with the Rules of Procedure, during its last ordinary plenary meeting for 2013, the Board of Regulators decided to elect three additional Vice-Chairs for 2014. Following the elections, in 2014, the Board of Regulators was led by the following Chair and Vice-Chairs:

BEREC Chair for 2014:

Mr Göran Marby - Director-General of the Swedish Post and Telecom Authority (PTS), elected Chair for 2014 at the 15th BEREC plenary meeting (6-7 June 2013 in Athens);

BEREC Vice-chairs for 2014 elected at the 17th BEREC plenary meeting (4-5 December 2013 in Budapest):

- Dr Fátima Barros – President of the Board of the Portuguese Autoridade Nacional de Comunicações (ANACOM), elected BEREC Chair for 2015 and serving as Vice-Chair in 2014;

- Ms Asta Sihvonen-Punkka– Director General of the Finnish Communications Regulatory Authority (FICORA);
- Mr Domagoj Jurjevic– Deputy President of the Council of the Croatian Regulatory Authority for Network Industries (HAKOM);
- Mr Jack Hamande– Chairman of the Council of the Belgian Institute for Postal Services and Telecommunications (BIPT).

b) Election of BEREC Chair 2016 and Vice-Chairs 2015

Every year the Board of Regulators appoints the Chair for the following year and the Vice-Chairs for the following year.

Therefore, during its 21st plenary meeting (5-6 December 2014 in Brussels), in compliance with the procedure described above, the Board of Regulators elected Dr Wilhelm Eschweiler, Vice-President of the German Federal Network Agency (BNetzA), as BEREC Chair for 2016. Ms Lidia Kozłowska – Vice-President of the Polish Office of Electronic Communications (UKE) and Mr Kevin O'Brien – Chairperson of the Irish Commission for Communications Regulation (ComReg) were elected as BEREC Vice-Chairs for 2015.

Pursuant to the Rules of Procedure, the elected Chair for 2016 and the outgoing Chair for 2014, Mr Göran Marby (PTS), must serve one year as Vice-Chair in 2015 to support the BEREC Chair for 2015, Dr Fátima Barros (ANACOM), who was elected Chair for 2015 at the 17th BoR meeting (5-6 December 2013 in Budapest).

c) New BEREC observers

Following the decision of 27 June 2014 of the European Council to grant EU candidate status to Albania in the second half of 2014, in accordance with the provisions of Article 4(3) of the BEREC Regulation, BEREC welcomed the Electronic and Postal Communications Authority of Albania (AKEP) as a BEREC observer.

d) Work structure

The structure used to support BEREC's work during 2014 is presented in Annex 2 of the report.

e) BEREC plenary meetings

BEREC met in ordinary plenary sessions on four occasions during 2014 as presented in Annex 1, which includes hyperlinks to the agendas and meeting conclusions for each of them.

6.2 BEREC evaluation

In 2012, the Commission initiated an evaluation on the performance of BEREC and the Office, as required under Article 25 of the BEREC Regulation. A study by external consultants (Price Waterhouse Coopers Luxembourg) was published by the Commission in early 2013. The European Parliament appointed a rapporteur to prepare its own report on the BEREC evaluation. This resulted in a resolution by the European Parliament which was adopted on 10 December 2013. BEREC has

supported the evaluation process from the start. BEREC published a report in May 2014 to address the final Recommendations.

In this report BEREC concluded that, although the general performance of BEREC has been considered satisfactory, some elements to be improved have been also identified to enable BEREC to: (i) be more proactive; (ii) improve internal communication without increasing bureaucracy and workload; (iii) foster participation of all NRAs on equal terms.

BEREC has developed new tools and approaches that allow more professional and streamlined work. These have helped to reduce the workload and have encouraged focus on the identified strategic subjects while, at the same time, avoiding to ignore any relevant issue identified. These are: (i) the BEREC Mid-term Strategy (BEREC Strategy 2015-2017); (ii) multi-annual work streams; (iii) increase of exchange of information and best practice through stakeholder workshops.

The working structure, from the technical to the decision-making level, provides a balance between stability and flexibility.

6.3 BEREC working structure and Rules of Procedure

In 2014, BEREC reviewed the functioning of its Rules of Procedure, in relation to both the Board of Regulators and the Management Committee, as a follow up to the preparatory work undertaken in 2013 as mentioned above.

In June 2014, BEREC therefore proceeded with the first adjustment of its internal governing rules by introducing some amendments to the previous arrangements in relation to various aspects.

Parallel to this exercise, BEREC began a high-level reflection on the overall Expert Working Groups' architecture and its suitability for effectively meeting the Work Programme's goals, which resulted in a simplification of the establishment of expert groups and in a standardisation of their operational patterns.

In December 2014, after a thorough reflection launched in June, BEREC adopted its new Expert Working Groups' structure, slightly reducing the overall number of groups from twelve to nine and aligning the working structure to the objectives set out in the BEREC Strategy and Work Programme.

At the same time, to enhance transparency further in the BEREC working patterns and foster the participation of all NRAs in the work of the organisation, BEREC defined newer Rules of Procedure for the Board of Regulators, in particular by amending the former Article 11 (Expert Working Groups), standardising the number of Chairs (two co-Chairs per group) and introducing detailed provisions on their appointment. Furthermore, a principle was introduced in Article 3 of the revised Rules according to which each BEREC Vice-Chair shall provide support and follow the work of a cluster of Expert Working Groups.

After the approval of the new Rules of Procedure for the Board of Regulators, BEREC also began work on defining the internal detailed arrangements relating to the concrete functioning of Expert Working Groups.

Annex 1: BEREC meetings (plenaries, CNs, Board meetings), E-voting sessions, BoR publicly available documents approved in 2014

LIST
of BEREC events in 2014

1. Plenary Meetings of the Board of Regulators in 2014

Dates/place	Event	Agenda	Conclusions
27-28 February 2014, Stockholm, Sweden	18 th BEREC Plenary Meeting	BoR (14) 22¹³	BoR (14) 33¹⁴
4-6 June 2014, Dublin, Ireland	19 th BEREC Plenary Meeting	BoR(14) 62¹⁵	BoR (14) 89¹⁶
25-26 September 2014, Rome	20 th BEREC Plenary Meeting	BoR (14) 109¹⁷	BoR (14) 132¹⁸
4-5 December 2014, Brussels	21 st BEREC Plenary Meeting	BoR (14) 167¹⁹	BoR (14) 211²⁰

2. 2014 Meetings of the Contact Network established by the Board of Regulators

Dates/place	Event	Agenda	Conclusions
6-7 February 2014, Riga, Latvia	1 st Contact Network meeting for 2014	BEREC CN (14) 01²¹	BEREC CN (14) 23²²
15-16 May 2014, Lisbon	2 nd Contact Network meeting for 2014	BEREC CN (14) 27²³	BEREC CN (14) 54²⁴
4-5 September 2014, Vaduz	3 rd Contact Network meeting for 2014	BEREC CN (14) 55²⁵	BEREC CN (14) 84²⁶
13-14 November 2014, Finland	4 th Contact Network meeting for 2014	BEREC CN (14) 85²⁷	BEREC CN (14) 119²⁸

¹³ [http://bereg.europa.eu/files/document_register_store/2014/2/BoR_\(14\)_22_Draft_BoR_Agenda_Stockholm_public.pdf](http://bereg.europa.eu/files/document_register_store/2014/2/BoR_(14)_22_Draft_BoR_Agenda_Stockholm_public.pdf)

¹⁴ [http://bereg.europa.eu/files/document_register_store/2014/4/BoR_\(14\)_33_BoR_Conclusions_18th_meeting_final.pdf](http://bereg.europa.eu/files/document_register_store/2014/4/BoR_(14)_33_BoR_Conclusions_18th_meeting_final.pdf)

¹⁵ [http://bereg.europa.eu/files/document_register_store/2014/6/BoR_\(14\)_62_Draft_BoR_Agenda_Dublin_2014-06-02_public.pdf](http://bereg.europa.eu/files/document_register_store/2014/6/BoR_(14)_62_Draft_BoR_Agenda_Dublin_2014-06-02_public.pdf)

¹⁶ [http://bereg.europa.eu/files/document_register_store/2014/6/BoR_\(14\)_89_BoR_Conclusions_19th_meeting.pdf](http://bereg.europa.eu/files/document_register_store/2014/6/BoR_(14)_89_BoR_Conclusions_19th_meeting.pdf)

¹⁷ [http://bereg.europa.eu/files/document_register_store/2014/9/BoR_\(14\)_109_Draft_BoR_Agenda_Rome_2014-09-18_public.pdf](http://bereg.europa.eu/files/document_register_store/2014/9/BoR_(14)_109_Draft_BoR_Agenda_Rome_2014-09-18_public.pdf)

¹⁸ [http://bereg.europa.eu/files/document_register_store/2014/8/BEREC_CN_\(14\)_132_BoR_Conclusions_Rome_P20_2014-02-06-7_final.pdf](http://bereg.europa.eu/files/document_register_store/2014/8/BEREC_CN_(14)_132_BoR_Conclusions_Rome_P20_2014-02-06-7_final.pdf)

¹⁹ http://bereg.europa.eu/files/document_register_store/2014/11/BoR-14-167_Draft_BoR_Agenda_Brussel_21st_plenary_public.pdf

²⁰ [http://bereg.europa.eu/files/document_register_store/2015/1/BoR_\(14\)_211_BoR_Conclusions_21st_plenary_2014-12-04-05.pdf](http://bereg.europa.eu/files/document_register_store/2015/1/BoR_(14)_211_BoR_Conclusions_21st_plenary_2014-12-04-05.pdf)

²¹ [http://bereg.europa.eu/files/document_register_store/2014/1/BEREC_CN_\(14\)_01_Draft_Agenda_CN1_Riga_p.pdf](http://bereg.europa.eu/files/document_register_store/2014/1/BEREC_CN_(14)_01_Draft_Agenda_CN1_Riga_p.pdf)

²² [http://bereg.europa.eu/files/document_register_store/2014/8/BEREC_CN_\(14\)_23_Conclusions_CN1_Riga_2014-02-06-7_final.pdf](http://bereg.europa.eu/files/document_register_store/2014/8/BEREC_CN_(14)_23_Conclusions_CN1_Riga_2014-02-06-7_final.pdf)

²³ [http://bereg.europa.eu/files/document_register_store/2014/5/BEREC_CN_\(14\)_27_Draft_Agenda_CN2_Lisbon_2014-05-07_public.pdf](http://bereg.europa.eu/files/document_register_store/2014/5/BEREC_CN_(14)_27_Draft_Agenda_CN2_Lisbon_2014-05-07_public.pdf)

²⁴ [http://bereg.europa.eu/files/document_register_store/2014/8/BEREC_CN_\(14\)_54_Conclusions_CN2_2014-05-15_16_final.pdf](http://bereg.europa.eu/files/document_register_store/2014/8/BEREC_CN_(14)_54_Conclusions_CN2_2014-05-15_16_final.pdf)

²⁵ http://bereg.europa.eu/files/document_register_store/2014/8/BEREC-CN-14-55_Draft_Agenda_CN3_Vaduz_final.pdf

²⁶ [http://bereg.europa.eu/files/document_register_store/2014/9/BEREC_CN_\(14\)_84_Conclusions_CN3_Vaduz_2014-09-04-05.pdf](http://bereg.europa.eu/files/document_register_store/2014/9/BEREC_CN_(14)_84_Conclusions_CN3_Vaduz_2014-09-04-05.pdf)

²⁷ http://bereg.europa.eu/files/document_register_store/2014/11/BEREC-CN-14-85_Draft_Agenda_CN4_Helsinki_public.pdf

²⁸ http://bereg.europa.eu/files/document_register_store/2014/12/BEREC-CN-14-119_Conclusions_2014-11-13-14_final.pdf

3. Public debriefings and BEREC engagement with the stakeholders

Dates/place	Event
12 February 2014, Brussels, Belgium	Meeting between the BEREC Chair and stakeholders
26 February 2014, Stockholm, Sweden	Public BEREC stakeholder workshop on relevant markets
6 March 2014, Brussels	Public debriefing from the 18 th BEREC Plenary Meeting
29 April 2014, Brussels	BEREC roundtable on Equivalence of Inputs
12 June 2014, Brussels, Belgium	Public debriefing from the 19 th BEREC Plenary Meeting
29 September 2014, Brussels	Hearing session on M2M for EU electronic communications operators
2 October 2014, Brussels	Public debriefing from the 20 th BEREC Plenary Meeting
16 October 2014, Brussels	2 nd BEREC Stakeholder Forum meeting
11 December 2014, Brussels	Public debriefing from the 21 st BEREC Plenary Meeting

4. Events attended by the BEREC Chair and/or Vice-Chairs on behalf of BEREC

Dates/place	Event
13-14 February 2014, Athens, Hellenic Republic	Speech by the BEREC Chair at the Conference on Broadband Development organised by the Greek Presidency of the Council of the EU in cooperation with ITU and the European Commission
24 February 2014, Barcelona, Spain	Speech by the BEREC Chair at the GSMA Mobile World Congress
4 March 2014, Brussels	Presentation by the BEREC Chair at the European Internet Foundation Dinner Debate: 'The Telecoms Single Market'
17-18 March 2014, Brussels	Presentation by the BEREC Chair at the WIK Conference 'The Single Market and Future Framework for Electronic Communications'
29-30 April 2014, London	Presentation by the BEREC Chair at the IIR Telecom & Technology's Telecoms Regulation Forum 2014

Dates/place	Event
30 April 2014, Brussels	Presentation by the BEREC Chair at ETNO's event 'New Digital Agenda for Europe'
19-20 May 2014, London, UK	Participation of the BEREC Vice-Chair (HAKOM) in the Open Mobile Summit
19-21 May 2014, Miami, USA	Participation of the BEREC CN Chair in the IC regional IRF and IIC telecommunications and media forum (TMF)
22 May 2014, Brussels, Belgium	Participation at the presentation of the Analysis Mason Report on backhaul markets
24-25 June 2014, Bratislava, Slovak Republic	Bilateral meetings between the Chair and Teleoff, and with the Ministry of Transport of the Slovak Republic
10 September 2014, Brussels	Speech by the BEREC Chair at 'The Future of the Internet - Innovation and Investment in IP Interconnection' Conference organised by Liberty Global
23 September 2014, Rome	Participation of the BEREC Chair in the Puntot Conference 'View from the Top'
1 October 2014, Brussels	Speech by the BEREC Vice-Chair (ANACOM) at the FT-ETNO Summit 2014
6-7 October 2014, Vienna, Austria	Speech by the BEREC Chair at the IIC International Regulators' Forum and workshop on M2M Communications - hosted by RTR
9 October 2014, Paris, France	Speech by the BEREC Chair at the ARCEP international conference 'Is the 'great convergence' of electronic communications networks inevitable?'
17 October 2014, Stockholm	Participation of the BEREC Chair in the General Assembly of ETNO
18 November 2014, Brussels	Participation of the BEREC Chair in the WIK conference
18 November 2014, Brussels	Speech by the BEREC Chair at ECTA Regulatory Conference 2014
19 November 2014, Brussels	Meeting between the BEREC Chair and BEREC Vice-Chair (ANACOM) with the Commissioner for the Digital Economy and Society
20 November 2014, Brussels	Speech by the BEREC Vice-Chair (FICORA) at the Seminar on the Place of the National Judiciary in the Single Market for Telecoms
2 December 2014, Brussels	Presentation by the BEREC Chair at the AmCham EU 2 nd Annual Transatlantic Digital Economy Conference

5. Internal BEREC workshops or joint workshops with European organisations

Dates/place	Event
16 April 2014, Brussels, Belgium	Presentation by the BEREC Chair at the IRG NGA Capacity Building Workshop
24 September 2014, Rome	BEREC Workshop on Challenges in an NGA environment: Effective regulation for competitive NGA roll out
26 September 2014, Brussels	Joint BEREC – Consumer Protection Cooperation (CPC) Network legal workshop on consumer issues in the area of electronic communications
11 November 2014, Brussels	Joint BEREC – Radio Spectrum Policy Group (RSPG) workshop
3 December 2014, Brussels	BEREC Plenary Workshop 'What should be the vision for a telecoms Single Market in Europe?'
3 December 2014, Brussels	BEREC Plenary Workshop on International Roaming

6. Meetings between the BEREC Chair, Vice-Chairs and Chairs of BEREC Expert Working Groups

Dates/place	Event
9-10 January 2014, Stockholm	Meeting between the BEREC Chair and Vice-chairs
14 January 2014, Brussels	Meeting between the BEREC Chair and the Chairs of BEREC Expert Working Groups
20 March 2014, organised by video conference	Meeting between the BEREC Chair and Vice-chairs
14 May 2014, Japan	Meeting between the BEREC Chair and Vice-Chairs
1 September 2014, organised by video conference	Meeting between the BEREC Chair and Vice-chairs
9 September 2014, Brussels	Meeting between the BEREC Chair and Vice-chairs
10 September 2014, Brussels	Meeting between the BEREC Chair and Vice-Chairs and the Chairs of the BEREC Expert Working Groups

Dates/place	Event
4 November 2014, organised by video conference	Meeting between the BEREC Chair and Vice-chairs
26 November 2014, organised by video conference	Meeting between the BEREC Chair and Vice-chairs

7. BEREC international events

A) Cooperation between BEREC and US FCC

Dates/place	Event
24 February 2014, Barcelona	Meeting between the BEREC Chair and the Chairman of the US FCC
28 May 2014, organised by video conference	BEREC - US FCC Workshop on the state of competition in EU and the US
6 June 2014, Dublin, Ireland	Presentation of FCC Commissioner Rosenworcel to the BEREC Plenary in Dublin on the recent developments of the electronic communications in the US
1 November 2014, organised by video conference	BEREC - US FCC workshop on net neutrality

B) Cooperation between BEREC and Regulator

Dates/place	Event
10-12 March 2014, Cartagena, Colombia	BEREC- Regulator Experts Working Groups meeting
21-22 July 2014, Buenos Aires, Argentina	BEREC- Regulator Summit
25 September 2014, Rome	Speech by the Regulator Chair for 2015 and Chairman of the Telecommunications Regulatory Board of Puerto Rico before BEREC on topics of interest for cooperation between BEREC and Regulator
16-18 November 2014, Puerto Rico	Speech by the BEREC Vice-Chair (HAKOM) at the Regulator plenary meeting and exchange of views on future cooperation between BEREC and Regulator

C) Cooperation between BEREC and EMERG

Dates/place	Event
11-12 February 2014, Amman, Jordan	Participation of the BEREC Vice-Chair (ANACOM) in the EMERG Plenary
15 April 2014 and 23 April 2014, Stockholm, Riga and Amman	Signing of the Memorandum of Understanding between BEREC and the EMERG

D) Cooperation between BEREC and the Group of Eastern Partnership Regulators for Electronic Communications Networks and Services (EaPeReg Network)

Dates/place	Event
1-2 April 2014, Tbilisi, Georgia	Participation of BEREC delegation in the 3 rd Plenary Session of the EaPeReg Network
4 December 2014, Brussels	Signing of the Memorandum of Understanding between BEREC and the EaPeReg Network and exchange of views on the future cooperation between the two organisations
11-12 December 2014, Prague	Participation of a BEREC delegation in the 4 th Plenary Session of the EaPeReg Network

E) BEREC study trip

Dates/place	Event
12-16 May 2014, Japan	BEREC Chair and Vice-Chairs study trip to Japan

2014 Board of Regulators' electronic voting procedures

№	Document subject to electronic voting	Comments Round		Voting Round		Comments
		Start	End	Start	End	
1.	BEREC Opinion on Phase II investigation pursuant to Article 7(a) of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case DE/2013/1527 'Wholesale voice call termination on individual mobile networks (market 7) in Germany'	08.01.2014	10.01.2014	14.01.2014	15.01.2014	The BEREC Opinion approved by the BoR was published on the BEREC website under registration number BoR (14) 07 .
2.	BEREC Opinion on Phase II investigation pursuant to Article 7(a) of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case LV/2014/1538 Wholesale voice call termination on individual fixed networks (market 3) in Latvia	07.03.2014	11.03.2014	13.03.2014	14.03.2014	The BEREC Opinion approved by the BoR was published on the BEREC website under ref. No BoR (14) 39 .
3.	BEREC views on the European Parliament first reading legislative resolution on the European Commission's proposal for a Connected Continent Regulation	25.04.2014	05.05.2014	08.05.2014	15.05.2014	The BEREC Opinion approved by the BoR was published on the BEREC website under registration No BoR (14) 50 .
4.	BEREC Opinion on the Phase II investigation pursuant to Article 7(a) of Directive 2002/21/EC (Framework Directive) as amended by Directive 2009/140/EC: Case EE/2014/1572: The market for call termination on individual public telephone networks provided at a fixed location (market 3) in Estonia	15.05.2014	19.05.2014	21.05.2014	22.05.2014	The BEREC Opinion approved by the BoR was published on the BEREC website under registration No BoR (14) 65 .

№	Document subject to electronic voting	Comments Round		Voting Round		Comments
		Start	End	Start	End	
5.	Commission questionnaire on the implementation and application of the universal service provisions – a summary of the results	26.06.2014	27.06.2014	01.07.2014	02.07.2014	The final document (BoR (14) 95) is for internal use and is not available to the public. It was transmitted to the Commission with letter No BoR (14) 97 (not public).
6.	BEREC Opinion on Phase II Investigation pursuant to Article 7(a) of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case DE/2014/1605 Wholesale voice call termination on individual mobile networks (market 7) in Germany	17.07.2014	21.07.2014	23.07.2014	24.07.2014	The BEREC Opinion approved by the BoR was published on the BEREC website under registration No BoR (14) 105 .
7.	BEREC's international roaming input to EC request for discussion during the Stakeholder Forum (16.10.2014, Brussels) and BEREC's preliminary findings on RLAH and its impact	07.10.2014	10.10.2014	10.10.2014	13.10.2014	The documents approved by the BoR were published on the BEREC website under No BoR (14) 136 and BoR (14) 135 .
8.	BEREC Opinion prepared by the BEREC Expert Working Group in the Phase II investigation pursuant to Article 7(a) of the Framework Directive in the case DE/2014/1642: Call termination on individual public telephone networks provided at a fixed location (market 3) in Germany.	15.10.2014	17.10.2014	21.10.2014	22.10.2014	The BEREC Opinion approved by the BoR was published on the BEREC website under ref. No BoR (14) 160 .

№	Document subject to electronic voting	Comments Round		Voting Round		Comments
		Start	End	Start	End	
9.	Analysis of the impacts of 'Roam Like at Home' (RLAH)	12.12.2014	15.12.2014	16.12.2014	17.12.2014	The International Roaming: Analysis of the impacts of RLAH was published on the BEREC website under ref. No BoR (14) 209 .
10.	BEREC Opinion on Phase II investigation pursuant to Article 7(a) of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case DE/2014/1660 Call termination on individual public telephone networks provided at a fixed location (market 3) in Germany	08.12.2014	10.12.2014	12.12.2014	15.12.2014	The BEREC Opinion approved by the BoR was published on the BEREC web site under ref. No BoR (14) 206 .
11.	BEREC Opinion on Phase II investigation pursuant to Article 7 of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case FR/2014/1670 wholesale SMS termination on individual mobile networks in France	17.12.2014	19.12.2014	23.12.2014	29.12.2014	The BEREC Opinion approved by the BoR was published on the BEREC web site under ref. No BoR (14) 218 .

8. Publicly available documents approved by the Board of Regulators in 2014

8.1. BEREC opinions

Document number	Document title/hyperlink	Document date
BoR (14) 07	BEREC Opinion on Phase II investigation pursuant to Article 7(a) of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case DE/2013/1527 Wholesale voice call termination on individual mobile networks (market 7) in Germany	16 January 2014
BoR (14) 39	BEREC Opinion on Phase II investigation pursuant to Article 7(a) of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case LV/2014/1538 Wholesale voice call termination on individual fixed networks (market\ 3) in Latvia	14 March 2014
BoR (14) 50	BEREC views on the European Parliament first reading legislative resolution on the European Commission's proposal for a Connected Continent Regulation	16 May 2014
BoR (14) 65	BEREC Opinion on Phase II investigation pursuant to Article 7(a) of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case EE/2014/1572 the market for call termination on individual public telephone networks provided at a fixed location (market 3) in Estonia	22 May 2014
BoR (14) 71	BEREC Opinion on the Commission Recommendation on Relevant Product and Service Markets Susceptible to ex ante Regulation	5 June 2014
BoR (14) 105	BEREC Opinion on Phase II investigation pursuant to Article 7(a) of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case DE/2014/1605 Wholesale voice call termination on individual mobile networks (market 7) in Germany	24 July 2014
BoR (14) 160	BEREC Opinion on Phase II investigation pursuant to Article 7(a) of Directive 2002/21/EC as amended by Directive 2009/140/EC: DE/2014/1642 - Call termination on individual public telephone networks provided at a fixed location (market 3) in Germany	24 October 2014
BoR (14) 187	International Roaming: BEREC input to EC request	4 December 2014
BoR (14) 206	BEREC Opinion on Phase II investigation pursuant to Article 7(a) of Directive 2002/21/EC as amended by	16 December 2014

Document number	Document title/hyperlink	Document date
	Directive 2009/140/EC: Case DE/2014/1660 Call termination on individual public telephone networks provided at a fixed location (market 3) in Germany	
BoR (14)209	International Roaming: Analysis of the impacts of 'Roam Like at Home' (RLAH)	17 December 2014
BoR (14) 218	BEREC Opinion on Phase II investigation pursuant to Article 7 of Directive 2002/21/EC as amended by Directive 2009/140/EC: Case FR/2014/1670 Wholesale SMS termination on individual mobile networks in France	29 December 2014

8.2. BEREC reports

Document number	Document title/hyperlink	Document date
BoR (14) 16	International Roaming BEREC Benchmark Data Report April 2013 – September 2013	17 February 2014
BoR (14) 55	Termination Rates Benchmark Snapshot (as of January 2014): Integrated Report on Mobile Termination Rates & SMS Termination Rates	26 May 2014
BoR (14) 61	BEREC Evaluation: Recommendations and Follow-up Actions Report 2014	26 May 2014
BoR (14) 72	BEREC report on the public consultation of the draft review of the BEREC Common Position on geographical aspects of market analysis (definition and remedies)	5 June 2014
BoR (14) 114	BEREC Report Regulatory Accounting in Practice 2014	25 September 2014
BoR (14) 115	International Roaming BEREC Benchmark Data Report October 2013-March 2014	25 September 2014
BoR (14) 116	Consultation report for BEREC report Monitoring quality of Internet access services in the context of net neutrality	25 September 2014
BoR (14) 117	Monitoring quality of Internet access services in the context of net neutrality BEREC report	25 September 2014
BoR (14) 122	BEREC Report 'Case Studies on Regulatory	26 September 2014

Document number	Document title/hyperlink	Document date
	Decisions regarding Vectoring in the EU'	
BoR (14) 170	Report on Transparency and Comparability of International Roaming Tariffs	4 December 2014
BoR (14) 171	Monitoring implementation of the BEREC Common Positions on WLA, WBA and WLL - Phase I	4 December 2014
BoR (14) 173	Termination Rates Benchmark Snapshot (as of July 2014): Integrated Report on Mobile Termination Rates & SMS Termination Rates	4 December 2014
BoR (14) 181	BEREC Report on the Public Consultation of the BEREC Strategy 2015-2017	4 December 2014
BoR (14) 184	BEREC Report on the Public Consultation of the draft BEREC Work Programme 2015	4 December 2014
BoR (14) 189	Report on the BEREC public consultation on document 'Guidance on the regulatory accounting approach to the economic replicability test (i.e. ex-ante/sector specific margin squeeze tests)	5 December 2014

8.3. Regulatory best practices

Document number	Document title/hyperlink	Document date
BoR (14) 73	BEREC Common Position on geographic aspects of market analysis (definition and remedies)	5 June 2014
BoR (14) 190	BEREC Guidance on the regulatory accounting approach to the economic replicability test (i.e. ex-ante/sector specific margin squeeze tests)	5 December 2014

8.4. Decisions of the Board of Regulators

Document number	Document title/hyperlink	Document date
BoR/2014/1	Decision of the Board of Regulators on BEREC Expert Working Groups	27 February 2014
BoR/2014/2	BoR Decision on BEREC Expert Working Groups	25 September 2014

Document number	Document title/hyperlink	Document date
BoR/2014/3	Decision of the Board of Regulators on BEREC Expert Working Groups	5 December 2015

8.5. Documents approved for public consultation procedures

Document number	Document title/hyperlink	Document date
BoR (14) 119	Draft BEREC Strategy 2015-2017	26 September 2014
BoR (14) 123	Draft Guidance on regulatory accounting approach to economic replicability test (ex-ante margin squeeze tests)	26 September 2014
BoR (14) 120	Draft BEREC Work Programme 2015	25 September 2014
BoR (14) 24	Draft BEREC report on monitoring quality of Internet access services in the context of net neutrality	26 February 2014

8.6. Annual work programmes, strategies and annual reports

Document number	Document title/hyperlink	Document date
BoR (14) 182	BEREC Strategy 2015-2017	4 December 2014
BoR (14) 185	Work Programme 2015 BEREC Board of Regulators	4 December 2014
BoR (14) 60	BEREC Annual Reports for 2013	26 May 2014

8.7. Rules of Procedure of the Board of Regulators

Document number	Document title/hyperlink	Document date
BoR (14) 67	Rules of Procedure of the Board of Regulators	6 June 2014
BoR (14) 213	Rules of Procedure of the Board of Regulators	5 December 2014

Annex 2: Membership of the BEREC Board of Regulators**L I S T**

of the Members and Observers of the Board of Regulators established pursuant to Article 4(1) of Regulation (EC) No 1211/2009 of the European Parliament and of the Council of 25 November 2009 establishing the Body of European Regulators for Electronic Communications (BEREC) and the Office

Nº	Country (if applicable)	Name of organisation	Member or observer
1.	ALBANIA	Electronic and Postal Communications Authority of Albania	Observer
2.	AUSTRIA	Austrian Regulatory Authority for Broadcasting and Telecommunications, RTR-GmbH	Member
3.	BELGIUM	Institut Belge des Postes et Télécommunications, IBPT / BIPT	Member
4.	BULGARIA	Communications Regulation Commission, CRC	Member
5.	CROATIA	Croatian Regulatory Authority for Network Industries, HAKOM	Member
6.	CYPRUS	Office of the Commissioner of Telecommunications and Postal Regulation, OCECPR	Member
7.	CZECH REPUBLIC	Czech Telecommunication Office, CTU	Member
8.	DENMARK	Danish Business Authority, DBA	Member
9.	ESTONIA	Estonian Technical Regulatory Authority, ETRA	Member
10.	FINLAND	Finnish Communications Regulatory Authority, FICORA	Member
11.	FORMER YUGOSLAV REPUBLIC OF MACEDONIA	Agency for Electronic Communications, AEC	Observer
12.	FRANCE	Autorité de Régulation des Communications électroniques et des Postes, ARCEP	Member
13.	GERMANY	Federal Network Agency, BNetzA	Member
14.	GREECE	Hellenic Telecommunications and Post Commission, EETT	Member

Nº	Country (if applicable)	Name of organisation	Member or observer
15.	HUNGARY	National Media and Infocommunications Authority, NMHH	Member
16.	ICELAND	Post and Telecom Administration, PTA	Observer
17.	IRELAND	Commission for Communications Regulation, COMREG	Member
18.	ITALY	Autorità per le Garanzie nelle Comunicazioni, AGCOM	Member
19.	LATVIA	Public Utilities Commission, SPRK	Member
20.	LIECHTENSTEIN	Office for Communications / Amt für Kommunikation, AK	Observer
21.	LITHUANIA	Communications Regulatory Authority, RRT	Member
22.	LUXEMBOURG	Institut Luxembourgeois de Régulation, ILR	Member
23.	MALTA	Malta Communications Authority, MCA	Member
24.	MONTENEGRO	Montenegro Agency for Electronic Communications and Postal Services, EKIP	Observer
25.	NORWAY	Norwegian Post and Telecommunications Authority, NPT	Observer
26.	POLAND	Office of Electronic Communications, UKE	Member
27.	PORTUGAL	Autoridade Nacional de Comunicações, ANACOM	Member
28.	ROMANIA	National Authority for Management and Regulation in Communications, ANCOM	Member
29.	SERBIA	Regulatory Agency for Electronic Communications and Postal Services, RATEL	Observer
30.	SLOVAK REPUBLIC	Regulatory Authority for Electronic Communications and Postal Services, RÚ	Member
31.	SLOVENIA	Agency for Communication Networks and Services of the Republic of Slovenia, AKOS	Member
32.	SPAIN	Comisión Nacional de los Mercados y la Competencia, CNMC	Member
33.	SWEDEN	National Post & Telecommunications Agency, PTS	Member

Nº	Country (if applicable)	Name of organisation	Member or observer
34.	SWITZERLAND	Federal Communications Commission, COMCOM	Observer
35.	THE NETHERLANDS	Authority for Consumers and Markets, ACM	Member
36.	TURKEY	Information and Communication Technologies Authority, ICTA	Observer
37.	UNITED KINGDOM	Office of Communications, OFCOM	Member
38.		European Commission, EC	Observer
39.		EFTA Surveillance Authority, ESA	Observer

Expert Working Groups:

EWG	Chair	Work stream
Framework Implementation	Antonio De Tommaso – AGCOM	Review of BEREC Rules of Procedure of the Board of Regulators
		Follow up of the fact-finding report on NRAs' regulatory capacity
		Qualitative analysis of Article 7/7a cases so far
		Machine-to-Machine communications
Market and Economic analysis	Jorge Infante –CNMC and Jennifer Siroteau – ARCEP	Review of the Common Position on geographic aspects of market analysis
		Opinion on the review of Commission Recommendation on relevant markets
		BEREC report on oligopoly analysis and regulation
		Operational initiatives to increase the fluidity of non-residential markets
International roaming	Claudi Fauli CNMC and Elisabeth Dornetshumer (RTR)	BEREC Report on Transparency and Comparability of International Roaming Tariffs
		BEREC Opinion, 'International Roaming Analysis of the impacts of 'Roam Like at Home' (RLAH)'
		Benchmark reports (two), in view of the Roaming Regulation
NGN	Cara Schwarz-Schilling – BNetzA	Emerging challenges in Next Generation Networks
		IP interconnection

EWG	Chair	Work stream
Net neutrality	Frode Sørensen – NPT and Nadia Trainar/ Maxime Forest – ARCEP	Monitoring Quality of Service - Practices and Platforms
		Ecosystem dynamics and demand-side forces in net neutrality (Ecodem)
		Preparation and launch of a second round of the Traffic Management Investigation (TMI)
End user	Bogdan Dospinescu – ANCOM and Carlos Costa – ANACOM	
		Best practice to enable choice in the internet consumer market
		Equivalent access and choice for disabled end users
		Review of the scope of Universal Service
Remedies	Lara Stoimenova/Marina Gibbs – Ofcom	Monitor the implementation of BEREC's Common Positions (CPs)
		Equivalence of Input (EOI)
Benchmarking	Iñigo Herguera – CNMC	Assessment of the information-sharing portal among all NRAs, BEREC, EComm and other institutions
		Benchmarking of termination rates in Europe (FTR/MTR/SMS)
Termination rates	Guillaume Mellier – ARCEP and Luciano Landi – AGCOM	Implementation of the TR Recommendation
Regulatory accounting	Alberta Corona – AGCOM and Annegret Groebel – BNetzA	Regulatory Accounting Report in Practice
		Guidance on regulatory accounting approach to economic replicability test (ex-ante margin squeeze tests)
Radio Spectrum working group	Mauro Martino - AGCOM/ Ylva Mälarstig - PTS	
Evaluation of BEREC and BEREC Office	Marianne Kracht – OPTA/ACM	
Ad-hoc on Smart Grids	Sören Nübel – BNetzA Maarten Klijn - ACM	
Ad-hoc on MTSO	Guido Pouillon- BIPT	

EWG	Chair	Work stream
Ad-hoc on Telecom Single Market initiative	Antonio De Tommaso – AGCOM	

PART B:

BEREC Annual Report on developments in the Electronic Communications Sector in 2014

- under Article 3.1(n) of the BEREC Regulation 1211/2009 –

Executive summary

The aim of the BEREC report on sector developments is to present the key trends in the electronic communications sector, addressing both market dynamics as well as the development of EU regulatory practices and public policies. The report is based on the findings of the BEREC Expert Working Groups in 2014, but also adopts a forward-looking approach.

In 2014 relevant developments in the electronic communications industry in Europe could be observed: deployment of next generation access networks (NGAs) and the take-up of very high speed connections grew significantly over the year. The deployment of fibre to the home (FTTH) constituted a big step forward. Operators also invested heavily in 4G/Long Term Evolution networks (LTE).

Penetration of fixed and mobile broadband continued to increase. A migration process from incumbent copper-based xDSL connections to fibre-based NGA connections could be observed. A general trend of declining prices, a higher variety of offers and more intense bundling took place. All this brought significant benefits for consumers.

The macroeconomic situation Europe in the year 2014 improved compared to previous years. In real terms, GDP grew by 1.3% for all the EU-28 and the Euro area also registered a modest positive growth of 0.9%.

Consolidation trends in the EU electronic communications via mergers and acquisitions (M&A) already present in the past years were reinforced in 2014. There is a clear trend driven by the commercial interest of the operators towards a reduction of the number of mobile network operators in national markets, and several relevant players are extending their scope, becoming integrated firms operating and deploying both mobile and fixed networks.

With respect to net neutrality, the Commission's Connected Continent proposals, presented in September 2013, include new, directly applicable, rules on net neutrality, which would turn a flexible and progressive regulatory regime (under the 2009 framework) into a rigid regulatory system. While amending the proposal in 2014

the European Parliament drew from BEREC's previous publications on net neutrality, improving the original Commission's proposals, but did not yet meet these standards. Some inconsistencies in the proposed rules and definitions still raised legal and policy concerns.

In light of the Digital Agenda targets and national NGA roll out plans, the effective regulation of markets related to NGA networks and services remains one of the key challenges for regulators. However, variations between Member States can be seen. This applies with regard to both demand-side factors, such as take-up rate and willingness to pay, as well as supply-side factors, such as the number of competitors and the technology mix (FTTB/H and/or VDSL with or without vectoring). Important factors are whether cable and/or municipalities/utilities play a role and whether FTTH/B or VDSL are the most important roll out strategies including identification of circumstances where vectoring is a sensible intermediate step. In view of the perceived coverage vs. competition trade-off, there remains a vital discussion on how to maintain the level of competition and choice for consumers in the context of the migration to NGA networks.

M2M applications have grown rapidly over recent years and are already influencing large parts of our daily life. Services such as real-time traffic management or push information on train delays have become normal for most citizens. However, it is believed that this is only the beginning of the development of this phenomenon and that billions of objects will be connected by 2020, which is due to the fact that, in theory, almost every (electronic) device can become a 'smart' device. In parallel, the amount of transferred data is also expected to rise, leading to a change in the technology used. This forecast growth of M2M communications in the coming years will lead to an enormous growth of M2M-related revenues.

Roaming Regulation III introduced structural changes by means of the separate sale of roaming services. Pursuant to Roaming Regulation III, retail consumers will have the possibility to pick a roaming provider for international roaming services other than the one supplying domestic mobile services, while keeping their phone number.

Apart from these structural changes a significant increase of the number of alternative tariffs offered by operators as well as the trend to offer tariffs where consumers can use their domestic bundle when roaming (roam like at home tariffs) could be observed. There seems to be a good level of compliance in all EU Member States with the provisions set out in Roaming Regulation III. Retail consumers have access to a Euro-voice, Euro-data and a Euro-SMS tariff (Euro tariffs). Regarding the evolution of roaming tariffs, the average retail and wholesale prices for the Euro-voice tariffs show similar trends like in previous exercises and remain fairly close to the caps set out in the Roaming Regulation III. Nevertheless, an increasing use of alternative voice tariffs by consumers in comparison with the previous year is observed, many of them associated to a bundle of services. Retail and wholesale prices for roaming SMS have decreased along the built-in glide path for the corresponding price caps. Similar to voice traffic, Euro-SMS tariffs account for the majority of SMS traffic. But there is a significant and different trend in the case of data roaming services. In 2014, retail and wholesale prices for data were much lower than the maximum prices considered in the Regulation. This means that, contrary to the case for voice and SMS, operators are

going further than what is required in the Regulation in reducing prices for data services.

Following the intervention of NRAs and the implementation of the European Commission Recommendation on termination rates, the wholesale rates both for mobile (MTRs) and fixed interconnection (FTRs) continued to decrease. On the contrary, in most EU countries, SMS services are not subject to a wholesale termination price regulation. Nevertheless, a significant decrease has been observed in the SMS TRs in the EU markets.

1 Introduction

The electronic communications sector is critical to boosting productivity and bringing growth back to the EU. Completing the creation of a single market in electronic communications is a crucial part of the EU's overriding objective for stimulating economic recovery in Europe. BEREC is committed to this goal as well as the Article 8 Framework Directive objectives and recognises its central role in ensuring regulatory consistency across Europe. BEREC therefore closely monitors and reports on developments in the electronic communications sector and publishes its annual report on sector developments under Article 3(1)(n) of the BEREC Regulation (EC/1211/2009).

The following analysis looks at the developments in the sector in 2014, paying particular attention to economic and regulatory remedy trends, NGN regulatory challenges, the neutrality of the internet, international roaming and termination prices, and M2M communications.

This report presents BEREC's view, which is based on its members' own expertise and knowledge, and at the same time aims at describing BEREC's own contribution to the development of the sector. The analysis includes qualitative reasoning, based on key thinking from BEREC EWG activity, together with quantitative data, based on the two main periodic BEREC data collection exercises²⁹ and on other public reporting documents.

2 Economic and regulatory trends in the electronic communications markets

2.1 Economic context

Europe has witnessed relevant developments in the electronic communications industry during 2014. Deployment of next generation access networks (NGAs) as well as the take-up of very high speed connections grew significantly over the year. In 2014 a significant leap forward was observed in the deployment of fibre to the home (FTTH) after operators have upgraded their networks. Operators also invested heavily in 4G/Long Term Evolution (LTE) networks and, in practically all EU Member States, the

²⁹ International roaming and termination rates benchmark reports.

citizens have commercial offers providing high- speed in mobility available to them, at least in the major cities.

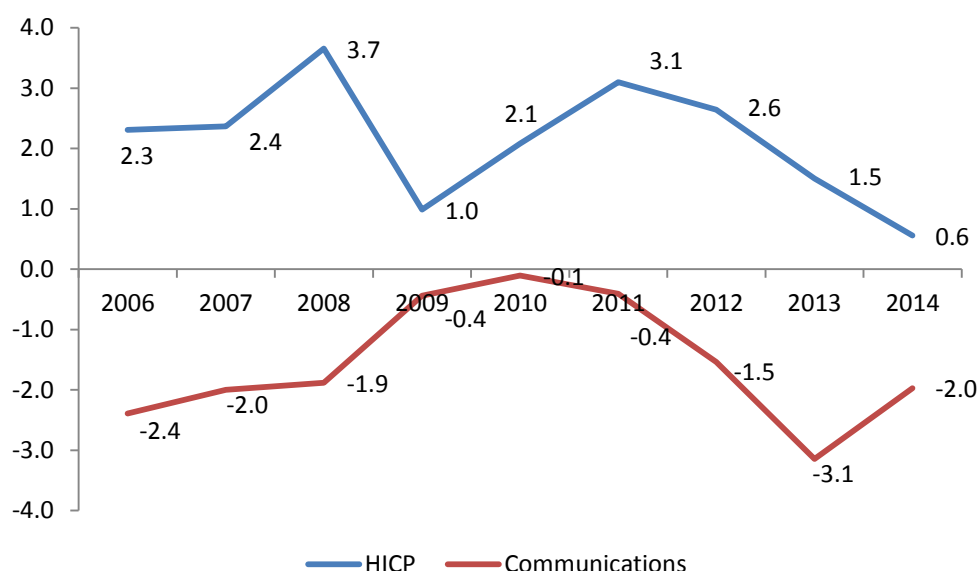
Penetration of fixed and especially mobile broadband continued the rising trend. A migration process from incumbent copper-based xDSL connections to fibre-based NGA connections was observed, bringing about higher connection speeds and increased consumption of data and services in general. A general trend of declining prices, a higher variety of offers and more bundling offers took place. All these brought about benefits for consumers.

One of the trends during last year was bundling, where operators amongst other things offered fixed network-based services together with mobile network related services all in one single commercial offer. These convergent offers call for operators that can combine both networks at the same time. Some mergers and acquisitions that occurred during 2014 also followed this convergent trend.

The macroeconomic context in Europe was better than in previous years. In real terms GDP grew at an annual rate of 1.3% for all the EU 28 and the Euro area registered a modest positive of growth of 0.9%. At the time of writing this report data was available for 22 EU Member States, of which only three (Croatia, Finland and Italy) registered negative GDP rates for 2014, albeit smaller in magnitude than the rates observed in 2013.

The evolution of overall price levels followed the same trend as in the previous year, i.e. positive but very small price increases were observed. Several countries even registered negative rates of inflation, namely: Portugal, Spain, Bulgaria, Slovakia, Greece and Cyprus. Overall, for the EU-28, a very low annual inflation rate was accounted for (+0.6%) during 2014. The Communications price subindex, which includes telecommunications as well as postal services, decreased in the EU by 2% over the year, with a majority of countries also showing a significant decrease in 2014, though smaller in magnitude than those registered in 2013. The decreases in the Communications services price basket were very significant in the Czech Republic, Italy, Spain, Lithuania and the Netherlands where the price index for these services decreased by 5% or even more. Only one country, Austria, registered a significant increase in its subindex, even if it started from lower relative prices.

Figure 1: Annual rate of change in the harmonised retail price index and in the Communications subindex for the EU-28. Source: Eurostat



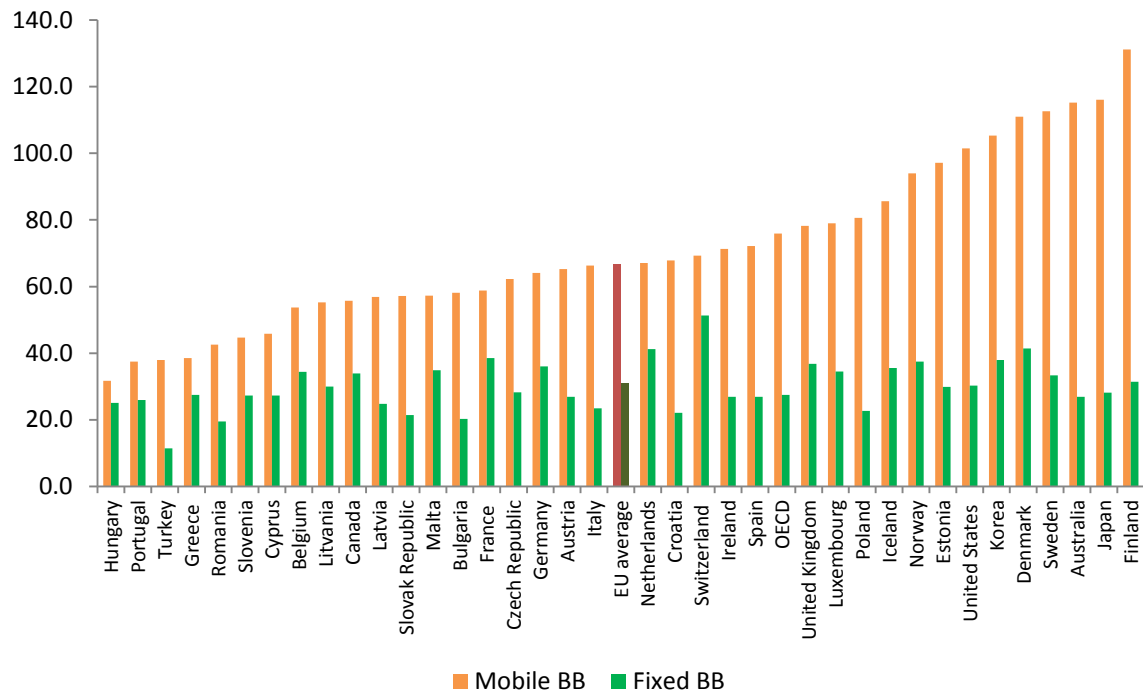
The more marked decrease in the telecommunications subindex indicates additional reasons such as technical progress being passed on to consumers in a competitive environment. Also, the entry of new agents (content and application providers) offering over-the-top services, that is services provided over the open internet, was also a notable aspect of the year. New providers of content made headway in a number of EU countries and, in parallel, traditional cable or IP-TV providers also launched online TV subscriptions modalities, sometimes in combination with the traditional subscription or even as a separate offer. The increased usage of messaging via OTT providers in the EU has been very successful. It has been estimated that the total volume of OTT messages surpassed the total traditional SMS volumes recorded in Europe in 2014.

The success of these agents brings benefits for end users as the variety of business models, services and functionalities and choice are expanded. The consumption of services also increases with the penetration of terminals, such as smartphones, tablets or computers. The demand for these services also implies a significant pressure on network operators because data traffic increases at double digit rates and it is expected to continue to do so for the foreseeable future, both in fixed and in mobile networks.

2.2 Broadband and NGN take-up

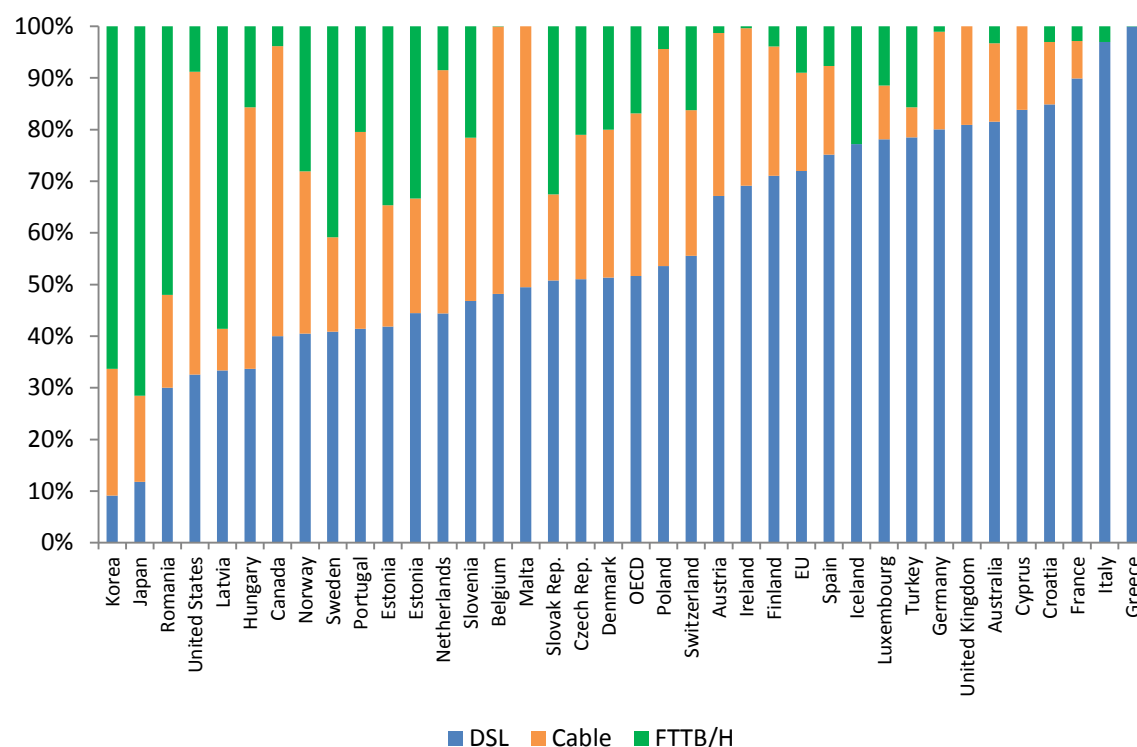
Demand for fixed broadband continued the rising trend. Total broadband subscriptions reached 31 lines per 100 inhabitants in the EU by June 2014, which implied an annual growth rate of 5.9%. Given the evolution of penetration curves all across the EU, the rates of growth of the take-up of broadband connections in most of the EU countries is notable after 14 years since the emergence of broadband in the marketplace. The deployment of NGA networks is probably helping in pushing demand for broadband connections.

Figure 2: Fixed and mobile broadband penetration (as lines per 100 inhabitants) in the EU and some OECD countries, June 2014. Source: European Commission and OECD.



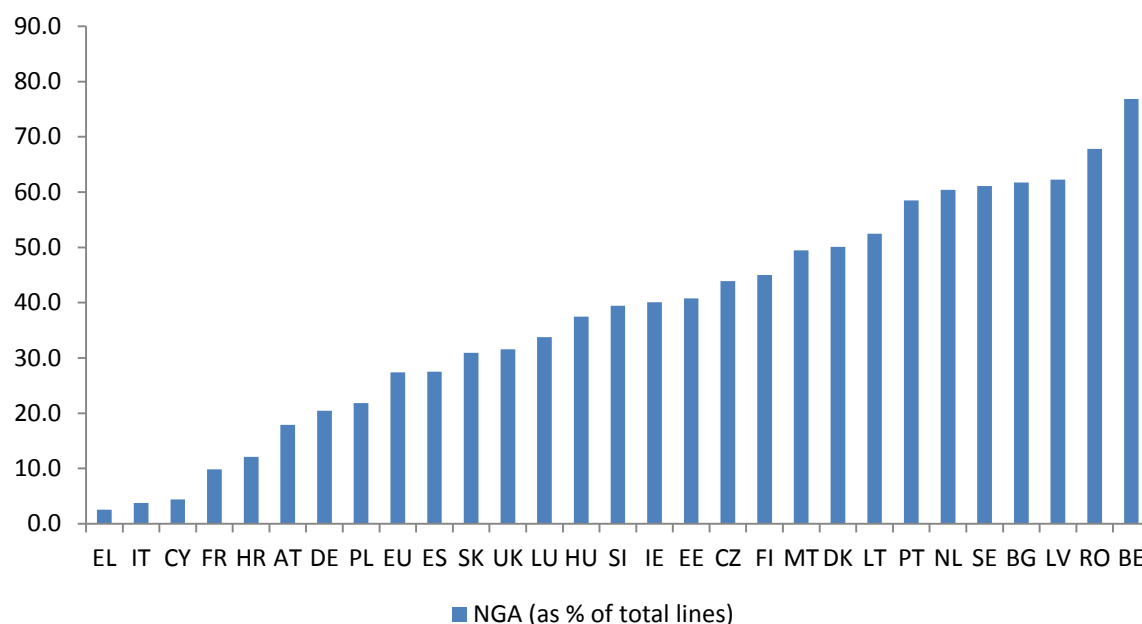
Cable operators have a significant presence in the EU providing broadband to 19% of all subscriptions to fixed networks. In 2014 the main technology being used for broadband provision was still xDSL, the one based on the incumbent's copper legacy network, which was the supporting technology for three out of every four connections. Fibre to the home or to the building (FTTH/B) supported 9% of all active broadband connections by June 2014 and registered the highest growth of all the available terrestrial technologies.

Figure 3: Distribution of broadband lines by underlying technology in the EU and some OECD countries, June 2014. *Source:* European Commission and OECD



NGA take-up, i.e. demand for subscriptions provided with fibre (either to the home, (FTTH) or very close to the end user premises (FTTC/B)), with mixed fibre-coaxial networks upgraded to the standard Docsis 3 or using the VDSL standard in the subloop, also registered positive growth all across the EU. While the stock of fixed broadband lines supported by any technology in the EU-28 grew at an annual rate of 5.9% and reached a total of 156.7 million lines, the demand for NGA subscriptions grew at 21.2%, with a total of 10.4 million new NGA lines contracted in the period June 2013 to June 2014. Most notably, countries that had low relative take-up rates grew at the highest rates, such as Greece, Italy, Croatia, Cyprus and Luxembourg with increases of 50% or higher over the year in their NGA stocks.

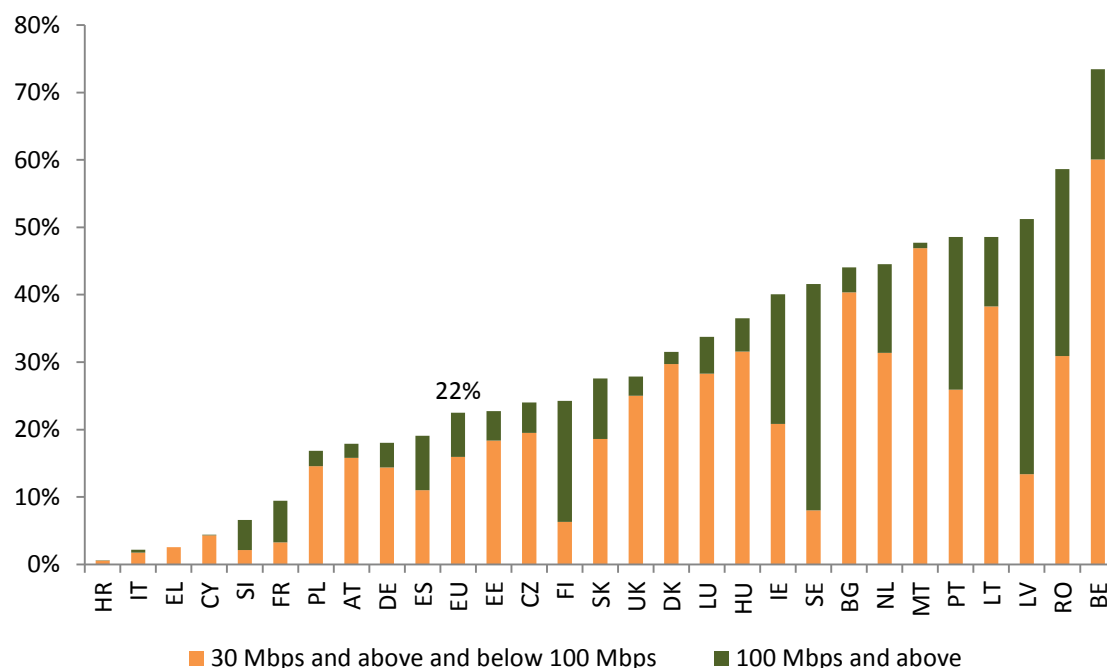
Figure 4: NGA take-up (as % of total broadband lines), June-2014. *Source:* European Commission.



During 2014 a significant advance occurred in the take-up of fibre to the home (or to the building) stock of contracted lines. For the EU-28 an average of 9% of all broadband lines were supported by fibre, whereas this ratio was higher for the OECD as a whole, 16.5% by June 2014. Thirteen European countries registered growth rates in the take-up of fibre connections above the 20% threshold in annual terms.

The total amount of NGA lines in the EU-28 was 59.5 million by June 2014, specifically subscriptions supported with an NGA technology or standards capable of providing very high connection speeds. Of those connections, many, but not all, had also been contracted as very high-speed connections, that is, a downloading speed of at least 30 Mbps. By June the total stood at 28.3 million broadband lines with very high speeds, which implies that 22% of all the fixed broadband lines active in the EU were in fact enjoying speeds of 30, 100 Mbps or higher.

Figure 5: Very high-speed broadband subscriptions in the EU (speed of 30 Mbps or higher) as a proportion of total broadband, June 2014. *Source:* European Commission.



2.3 Mobile broadband

In the last few years, mobile broadband recorded the highest growth rates of any retail service, both in penetration and usage, as well as in traffic. Mobile broadband subscriptions are mostly demanded for smartphone or handheld terminals. A thriving market for smartphones, tablets and the more intense bundling of mobile voice, messaging and data services has contributed to the widespread use of mobile broadband.

Mobile broadband reached a penetration level of 66.7 subscriptions per 100 inhabitants in the EU-28, with a growth in penetration of 15.9% in the period from June 2013 to June 2014. Three countries (Finland, Sweden and Denmark) showed penetration figures higher than 100 subscriptions per 100 inhabitants.

In Europe the commercial launch of 4G/LTE advanced during 2014 as well. In practically all the EU-28 countries, citizens already had commercial offers available on LTE. Ten countries in the EU had reached an LTE coverage of at least 75% of the population and a total of 17 countries had half the population - or more - covered by at least one LTE-based service provider. These figures contrast with the ones provided one year ago, where only eight countries had a coverage of at least 50% of the population. In Sweden, Finland, the Netherlands and Portugal the availability of LTE practically covered the whole population, similar to the levels found in Korea, Japan or the US.

The advances in 2014 have been made possible by the auctioning of spectrum of the 800 MHz, 1600 MHz and 2600 MHz bands, which took place in the majority of EU countries, and the significant investment effort by operators in the deployment of sites and network elements. GSMA estimates that by 2020 83% of the European population will be covered by LTE networks.

The take-up of LTE subscriptions is also taking place. By the beginning of 2013 only 3% of all mobile connections in Europe were LTE users, but by the first part of 2015 GSMA estimates³⁰ the increase of this figure to 10%. This growth in the subscriber base using LTE is estimated to bring about very big increases in data traffic as well. Cisco estimates that mobile networks will absorb data traffic increases of 50% at a compound annual growth rate for the period 2013-2018, most notably derived from the consumption of video content using handheld devices. By 2014 an average user in Europe would demand 1.1 GB of traffic per month. By 2017 this average consumption is expected to grow to 4 GB. Not only is smartphone-based consumption growing, but the stock of M2M connections too, which is expected to increase at double-digit annual rates over the coming years.

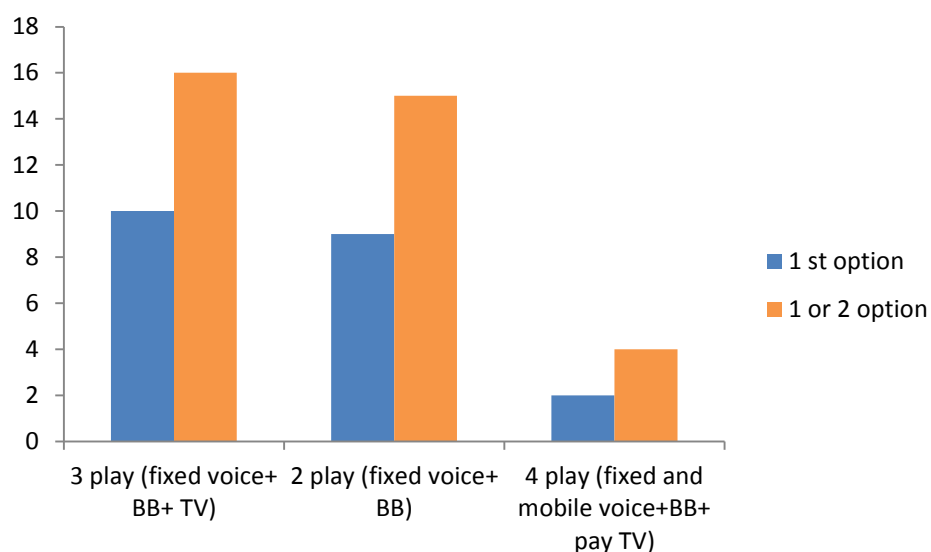
2.4 Bundling and prices

The sale of different services in one single commercial offer (i.e. bundling), increased during 2014 in a relevant number of countries both as the most frequent contracting modality in the marketplace for broadband and fixed telephony as well as in terms of the variety of tariffs and number of services included. In several countries 4-play and 5-play offers emerged, reaching a significant presence by the end of the year, as in France or Spain.

By the end of 2014 the most successful bundle was the 3-play bundle, combining fixed voice and broadband together with pay TV services, very closely followed by the 2-play bundle (fixed voice and BB). In a few number of countries, the 4-play bundle was the most successful one with very rapid growth recorded in the last two years.

³⁰ The mobile economy. Europe 2014. GSM Association, 2014.

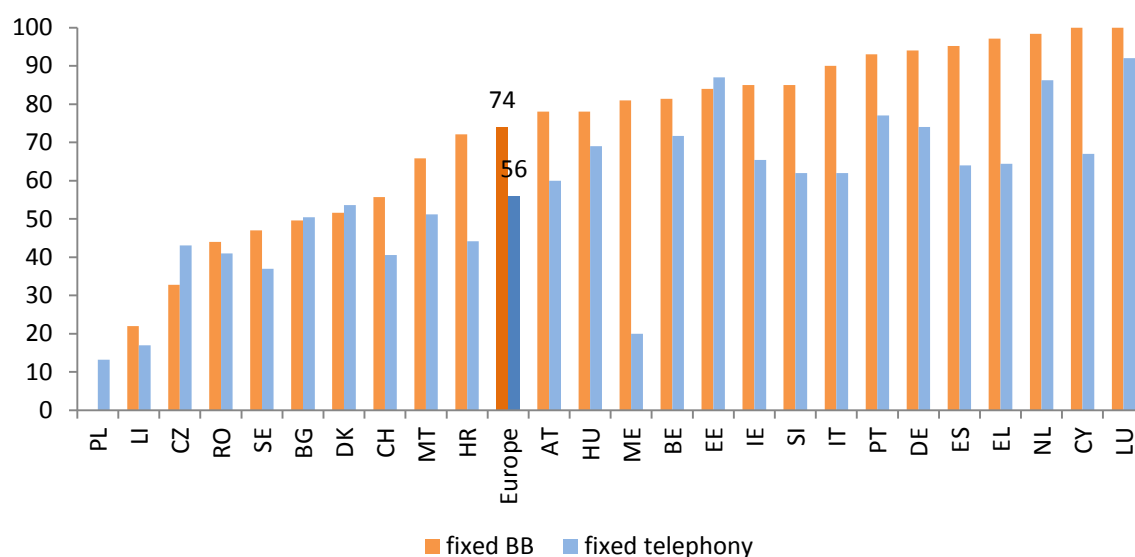
Figure 6: Distribution of main types of bundles ranked as most frequent in 1st or 2nd option in the EU, 2014. *Source:* Benchmarking EWG, BEREC.



Out of the 24 countries for which data was available, on average 74% of all fixed broadband connections were sold as part of a bundle and more than 56% of all fixed telephony subscriptions were also sold in bundled contracts. For fixed telephony, bundling was also significant: in 13 countries at least 60% of all fixed telephony subscribers had contracted this service together with an additional one in a single commercial offer³¹.

³¹ Figures reported refer to September 2014 (Malta, Austria and Ireland), June 2014 (Germany and Czech Republic), or December 2013 (Bulgaria, Estonia, Liechtenstein and Belgium). For the latter the proportion refers only to the residential segment). For Hungary the proportion is based on households that declare contracting bundled services.

Figure 7: Proportion of fixed telephony and fixed broadband subscriptions that are bundled, 2014. *Source:* Benchmarking EWG/BEREC.



In a recent survey conducted by BEREC the presence of convergent operators, specifically operators that offer fixed and mobile services all in one single offer, was significant. In 15 countries at least three operators were offering packs with mobile as well as fixed services included, while only 7 countries did not yet have a convergent operator. As described in the next section, some of the merger and acquisition transactions that occurred during 2014 in Europe involved the acquisition by one mobile operator of another with a fixed network installed.

An increase in the inclusion of the pay TV service as part of a joint offer was also recorded in 2014. In nine of the EU-28 countries more than 50% of all pay TV subscriptions were contracted jointly with other complementary telecommunications services.

The prices of broadband in the period 2009-2014 have fallen significantly. Based on a comprehensive comparative study available on broadband tariffs³² in the EU, in the last four year prices fell by 8.5% for stand-alone offers for medium-speed ranges (12-30 Mbps) and by 35% for offers that included voice, fixed broadband and pay TV.

Only during the last year, comparing tariffs in February 2013 and the same period in 2014, did prices remain constant in the EU-28 as a whole, though improvements in terms of quality did take place, specifically the same tariffs for the same set of services but with higher speeds have been offered or, in some countries, additional services were included in the bundle as buckets of minutes for mobile voice and data services. Some countries that showed higher prices in the past also had significantly lower prices in the last year, as was the case in Cyprus, Spain and Ireland.

³² Broadband internet access cost (BIAC) 2014, Van Dijk. The tariffs compared correspond to active offers in Europe as of February 2014.

One interesting feature of the change in prices for broadband and bundles in the EU is that higher speeds do not necessarily entail significantly higher prices, except for the ultra-high speed offers (100 Mbps or higher download speeds). Including an additional service in the bundle, for example adding voice to a broadband offer, does not in general imply a significant price increase on average in the EU, though the addition of pay TV in most of the cases would. In 85% of cases, the lowest priced tariffs or best entry offers across the EU are offered by entrants, leaving incumbents in most cases with relatively higher prices.

2.5 Mergers and acquisitions and re-organisation of market players

Consolidation trends in the European telecommunications market through mergers and acquisitions (M&A), already present in the past few years, were reinforced in 2014. In Germany, Telefonica Deutschland received clearance from the Commission for its intention to acquire E-Plus (part of KPN Netherlands). As a result of this operation, the German mobile market will be structured around three mobile network operators. In February 2015, in the Danish market, Teliasonera AB (the second largest mobile operator in terms of customers) and Telenor ASA (the third largest mobile operator) notified their intention to merge operations. This merger is still subject to clearance by the Commission. In July 2014, Telenor also notified the National Competition Authority of a merger with Tele2 in Norway. Although not yet notified, Hutchinson Whampoa (a Hong-Kong based operator) is in talks with Telefonica to acquire O2 UK, the mobile brand of Telefonica in the country. Mergers and acquisitions in the mobile sector have been notified throughout 2014, and are also currently still being notified. These M&A operations are still subject to clearance. The trend towards reducing the number of mobile network operators as reported in previous BEREC annual reports has been confirmed again in 2014.

In addition to M&A among mobile operators, fixed network operators have launched M&A operations. One acquisition being that of Ziggo in the Netherlands by Liberty Global. This operation was notified in October 2014 and was cleared conditionally by the Commission. Ziggo was the largest Dutch cable operator and Liberty Global owned the second largest Dutch cable operator (UPC), although Ziggo's and UPC's networks in the Netherlands did not overlap. Following an in-depth investigation, in February 2015 the Commission also cleared Liberty Global's acquisition of a stake in the Belgian media company De Vijver Media NV, subject to conditions. In previous years, Liberty Global also acquired the second cable operator in Germany (Kabel BW) and the largest cable operator in the UK (Virgin Media). Liberty Global is the world's largest international cable company with operations in 14 countries.

Interesting trends also emerge with regard to M&A operations aimed at the configuration of integrated operators owning both fixed and mobile infrastructure. This type of M&A allows for offering integrated services and bundles based on own infrastructure, and are becoming more and more common in several European countries. In October 2014, the National Competition Authority in France gave the green light (with conditions) to the acquisition of SFR (2nd Mobile Operator) by the Numericable Group (main cable operator in France), leading to a new integrated operator in a good position to compete with Orange in the provision of triple and quadruple play services. A similar operation took place in Germany in 2013, where Vodafone acquired Kabel Deutschland (the leading German cable operator).

In 2014, two acquisitions were notified in Spain following the same trend. Vodafone (2nd mobile operator) acquired ONO, the main cable operator in Spain. This merger was approved unconditionally by the Commission. Orange (the 3rd mobile operator) in turn notified its intention to acquire Jazztel, a prominent alternative operator for fixed broadband in Spain, which is also deploying a large FTTH network. In the British market, BT (the fixed incumbent) is in formal conversations to acquire Everything & Everywhere, the largest mobile operator in the United Kingdom.

In September 2014, the European Commission cleared the acquisition of Sky Deutschland AG and Sky Italia by the Sky Broadcasting Group plc ('BSkyB') in the UK. The three companies are media companies, active primarily in the pay TV sector. The transaction brings together the leading pay-TV operators in the UK, Ireland, Germany, Austria and Italy and will allow BSkyB, one of Europe's largest pay-television providers, to expand its reach within the region, offering premium sports and movie services to about 20 million customers in Europe.

In conclusion, the previous consolidation trends via M&A, reported in past years, have been confirmed in 2014. There is a clear trend driven by the commercial interest of the operators towards a reduction of the number of mobile network operators in national markets and several relevant players are extending their scope becoming integrated firms operating and deploying both mobile and fixed networks. BEREC is closely following and monitoring mergers and acquisitions both in the electronic communications services sector and in adjacent markets. Understanding relevant trends in M&A is key to monitoring future market developments and issues to be considered in BEREC reports and positions. For this reason, during 2015-2016 BEREC will prepare a report on M&A in the European telecommunications sector.

3 Developments related to European net neutrality regulations

As noted previously, the European Commission presented its draft Connected Continent Regulation in September 2013, which led to activities in 2014 in both arms of the EU legislature. While the current EU regulatory framework empowers (but does not require) NRAs to act to prevent degradation of service, the Commission's Connected Continent proposals included new, directly applicable, rules on net neutrality, which would turn a flexible and progressive regulatory regime (under the 2009 framework) into a rigid regulatory system. Under these proposals, NRAs would be required to enforce new rules prohibiting ISPs from unreasonable forms of traffic management, including the blocking or throttling of content, applications or services (subject to a limited number of exceptions). The Commission's proposals would also enshrine in EU law users' right to be 'free to access and distribute information and content, run applications and use services of their choice.'

The Parliament acted quickly to adopt a first reading position on the package in April 2014 before the end of its term and the European elections the following month. The Parliament's amendments on net neutrality generally retained the Commission's rigid regulatory approach but were more restrictive in terms of reducing the scope for exceptions whereby traffic management is permitted. While some of the language in the text adopted by European Parliament drew from BEREC's previous publications on the subject, improving the Commission's original proposals, it did not yet meet these

standards. Some inconsistencies in the proposed rules and definitions still raised legal and policy concerns.

With regard to the progress in the other arm of the EU legislature, the Council of Ministers continued to scrutinise the proposals during both the Greek and Italian Presidencies without coming to any agreement on the text. At the 27 November Telecoms Council, it was agreed to focus the Council's attentions on only two parts of the Connected Continent proposals, one of which was net neutrality. The presidency concluded that more technical work was needed to define a Council position.

4 Emerging challenges in next generation networks and IP interconnection

In light of the Digital Agenda targets and national NGA rollout plans, the effective regulation of markets related to NGA networks and services remains one of the key challenges for regulators and will be one of the hot topics in the Review.

The picture continues to be diverse within and between MS. This applies with regard to both demand-side factors such as take-up rate, willingness to pay etc. as well as supply-side factors such as the number of competitors and technology mix (FTTB/H and/or VDSL with or without vectoring). Important factors are whether cable and/or municipalities/utilities play a role and whether FTTH/B or VDSL are the most important roll out strategies including identification of circumstances where vectoring is a sensible intermediate step.

In view of the perceived coverage vs. competition trade-off there remains a vital discussion on how to maintain the level of competition and choice for consumers in the context of the migration to NGA networks. Infrastructure competition between cable and telecommunications networks is seen as the outcome of consolidation processes in some Member States, whereas experience has generally taught us that '2 is not enough for competition'. This implies that in many cases fixed infrastructure will continue to require regulation. While SMP regulation will remain the primary means of regulatory intervention (e.g. given the potential for re-monopolisation in the context of new NGA networks), nonetheless we expect symmetric access obligations will also have an important role to play going forward (e.g. in the context of co-investments).

5 Market impact of the International Roaming Regulation developments

5.1 Structural changes to the international roaming market

Apart from the obligation for operators to meet all reasonable requests for wholesale roaming access, which comprises direct wholesale roaming access and wholesale roaming resale access, Roaming Regulation III introduces the implementation of structural solutions to foster competition in the international roaming market. In this regard, Roaming Regulation III lays down measures that allow retail consumers to contract international roaming services separate from their domestic services.

Pursuant to Articles 4 and 5 of Roaming Regulation III, retail consumers will have the possibility to pick a roaming provider for international roaming services other than the one supplying domestic mobile services, while keeping their phone number. Firstly, it imposes an obligation on domestic providers to enable their consumers to access regulated voice, SMS and data roaming services provided as a bundle by any alternative roaming provider (Single IMSI). Furthermore, with regard to data roaming services, consumers must also have the option to sign up for the use of data services when travelling with an operator located in the country they visit (local break out (LBO)).

Article 5 of Roaming Regulation III requires domestic providers to grant all reasonable requests for access which may be necessary for the separate sale of regulated retail roaming services. To establish a common approach in the definition and technical implementation of all processes involved in the separate sale of retail roaming services, stakeholders of the mobile industry were organised in a cooperation platform initiated in December 2012. As a result of this cooperation, a set of interfaces and procedures were agreed to facilitate the introduction of any potential alternative roaming provider which may be interested in starting to offer the service³³. For its part, BEREC designed guidelines in close cooperation with the industry platform and published them at the beginning of July 2013³⁴.

These decoupling measures in either of the two modalities (Single IMSI and LBO) have been available to consumers since 1 July 2014. From the date of entry into force of the new measures up to September 2014, BEREC was only aware of one operator from Lithuania offering LBO services that submitted data to BEREC at the time of the 14th benchmark report.

Apart from the structural changes introduced by the Roaming Regulation by means of the separate sale of roaming services, the following developments in the market were observed in 2014:

- Significant increase of the number of alternative tariffs offered by operators. Most operators offer bundles with minutes and MB and a fair number offer tariffs that include all three services (voice, SMS, data).
- Compared to the previous year, more and more operators also offer tariffs where consumers can use their domestic bundle when roaming (roam like at home tariffs), although generally restricted to EEA countries or within the footprint of the group. Some offers include a connection fee, i.e. paying a few euros per day.

The increase of alternative tariffs could be an outcome of the pressure stemming from the reduction of retail and wholesale prices, in particular, with regard to data roaming. The increase of the approaches to 'roam like at home' could make the roaming service a differentiating factor for customers when purchasing their bundle of services. Besides encouraging competition between domestic providers, it is expected that it will also promote the ultimate aim of reducing retail roaming prices within Member States.

³³ http://docbox.etsi.org/Reference/Cooperation_Platform_Separate_Sale_of_Roaming_Services/

³⁴ http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/1326-berec-guidelines-on-roaming-regulation-ec-n-5312012-third-roaming-regulation-articles-4-and-5-on-separate-sale-of-roaming-services

5.2 International roaming prices and volumes

BEREC regularly collects market data (wholesale and retail prices, volumes and revenues) from national regulatory authorities and publishes its findings twice a year in its benchmark data reports. The two benchmark reports that cover the first three quarters of 2014 show a good level of compliance in all EU Member States with the provisions set out in Roaming Regulation III. Retail consumers have access to a Euro-voice, Euro-data and a Euro-SMS tariff (Eurotariffs). At the wholesale level, charges for wholesale voice, SMS and data services are in-line with the declining price caps.

The average retail and wholesale prices for the Euro-voice tariffs show similar trends to those in previous financial years and remain fairly close to the caps set out in Roaming Regulation III. Euro-voice tariffs decreased during 2014, following the glide path described above. For unregulated voice calls made and calls received (alternative tariffs), in total average prices per unit were higher than the Eurotariff, and the price reduction of those alternative tariffs were not as significant compared to the decreasing Eurotariffs. Roaming providers may not find it attractive to compete on providing lower voice tariffs despite the significant margin between the wholesale and retail caps. Nevertheless, an increasing use of alternative voice tariffs by consumers in comparison with the previous year is observed, many of them associated to a bundle of services (voice sold together with data and/or SMS services).

Retail voice prices for calls to countries outside the EEA area (rest of world (RoW)) were significantly higher than prices for calls within Member States. BEREC could not identify any sign that operators have, in general, tended to raise the prices of unregulated RoW roaming calls to make up for loss of revenue due to lower regulated price caps.

Retail and wholesale prices for roaming SMS have decreased along the built-in glide path for the corresponding price caps. Similar to voice traffic, the Euro-SMS tariffs account for the majority of SMS traffic. In this case, unregulated SMS tariffs only make up 20% of the total volume.

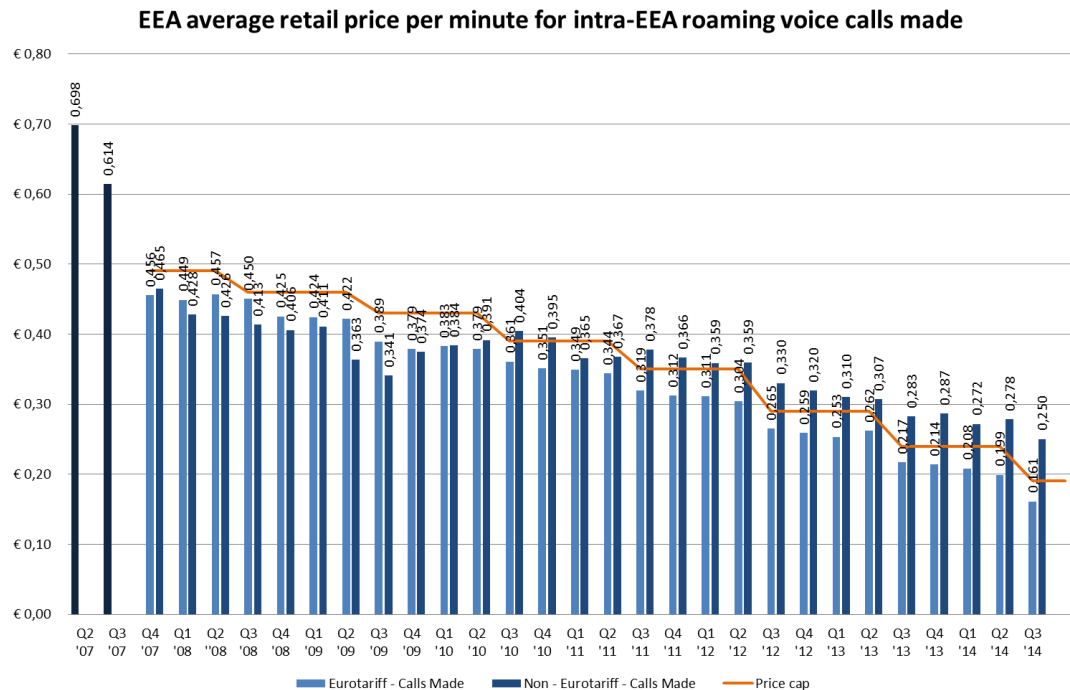
There is a significant and different trend in the case of data roaming services. In 2014 retail and wholesale prices for data were much lower than the maximum prices considered in the Regulation. This means that, contrary to the case for voice and SMS, operators are going further than what is required in the Regulation to reduce prices for data services. Retail prices fell from approximately EUR 0.22/MB in the third quarter of 2013 to EUR 0.079/MB in the third quarter of 2014. While volumes for voice and SMS remain at almost the same level, the data roaming volume peaks each year and it has multiplied 46 times up to Q3 2014 compared to Q3 2008. Positive outcomes of competition dynamics for data roaming are also signalled by an increasing tendency of consumers to purchase alternative data tariffs. In the third quarter of 2014, 57% of data traffic was based on non-euro data tariffs. In this regard, the BEREC Report on Transparency and Comparability of International Roaming Tariffs also showed that a large number of operators offered a variety of packages of roaming data services.

Regarding the wholesale agreements based on Article 3 of Roaming Regulation III, only some operators submitted this data. BEREC's International Roaming Compliance Report showed that operators negotiated roaming services at the wholesale level individually and that the provision of these services was based on commercial

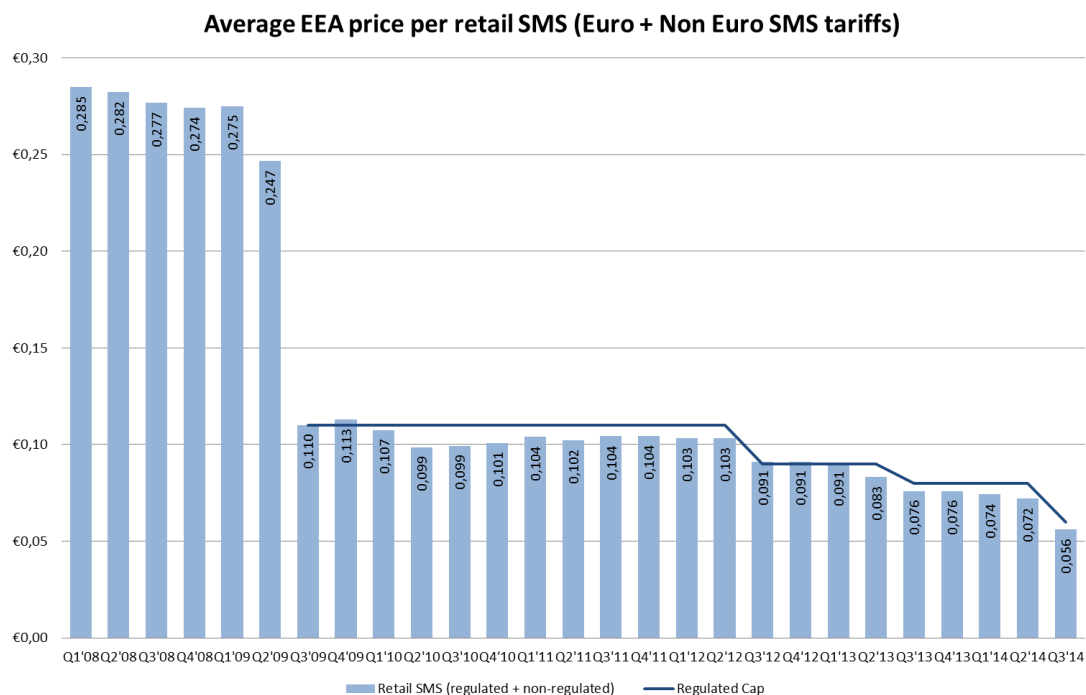
agreements. Some light MVNOs as well as resellers stated that these services continued to be provided on the basis of the existing contracts with host MNOs.

The figures below are extracted from the International Roaming BEREC Benchmark Data Report April 2014–September 2014:

i. Voice retail prices:

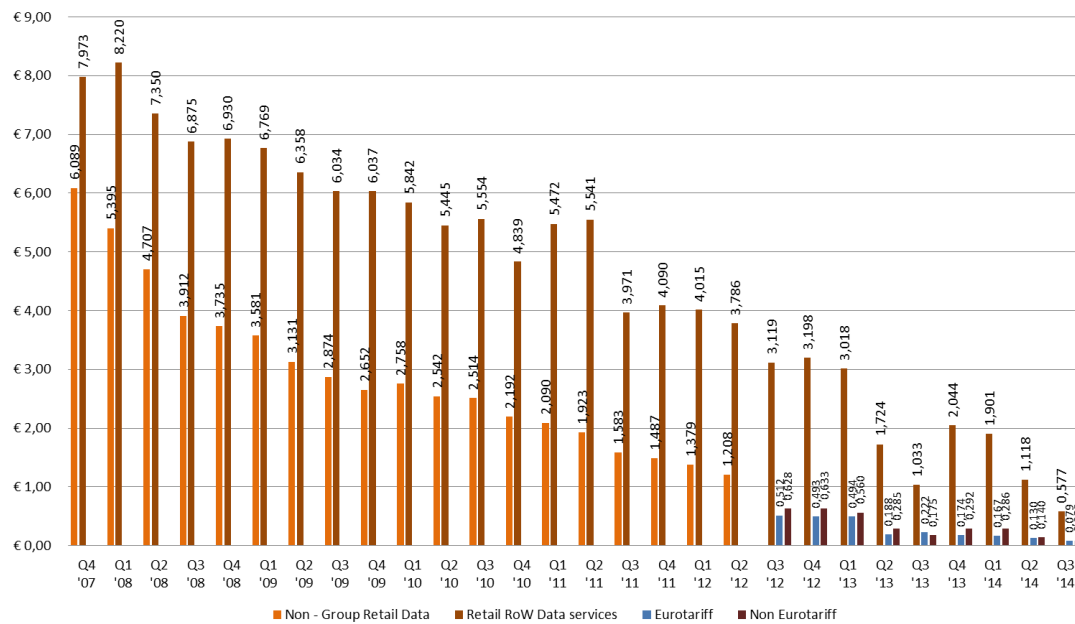


ii. SMS retail prices:

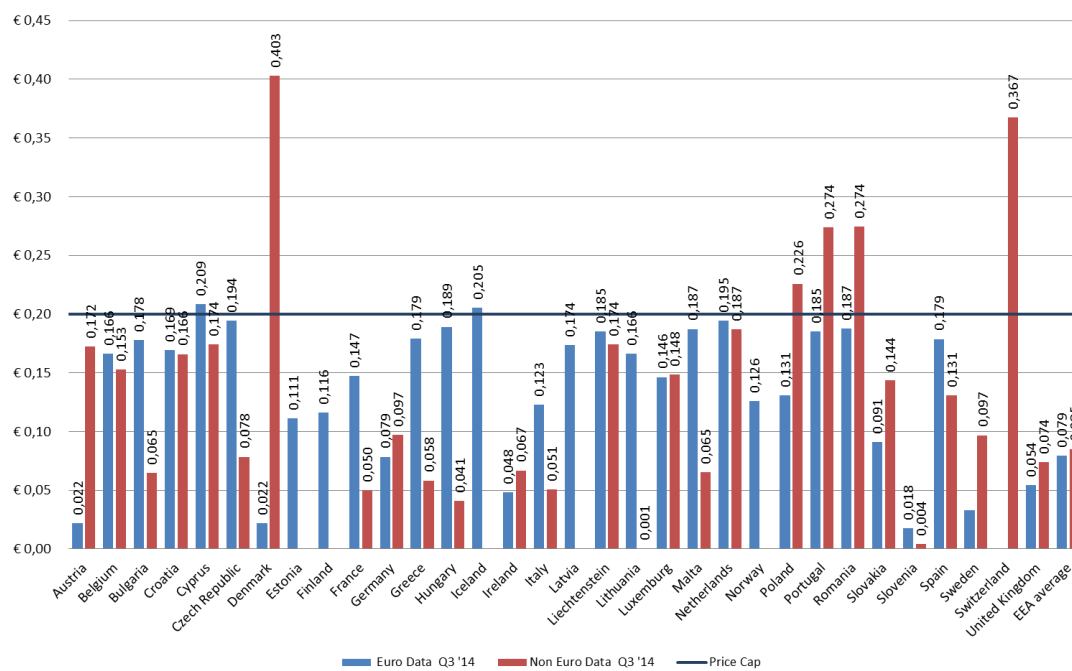


iii. Data retail prices:

EEA average price per Mb for retail EU/EEA and RoW data (Eurotariff and Non Eurotariff: prepaid + postpaid)

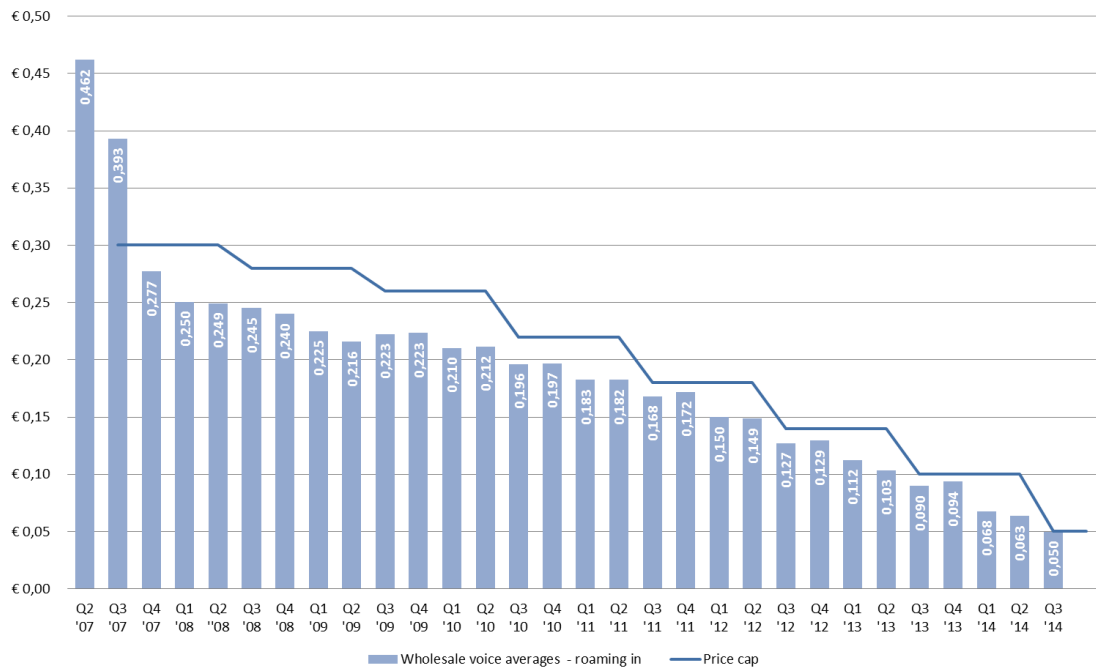


Average retail data price per Mb in Q3 2014 (prepaid+postpaid)



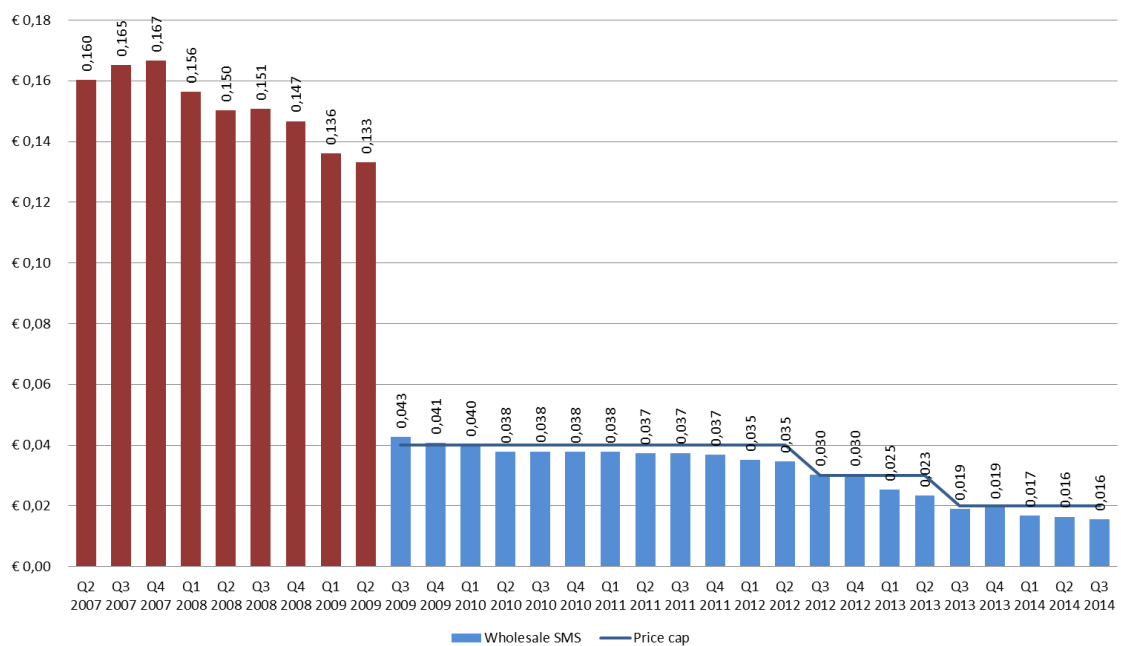
iv. Voice wholesale prices:

EEA average price per minute for wholesale non-group roaming voice calls



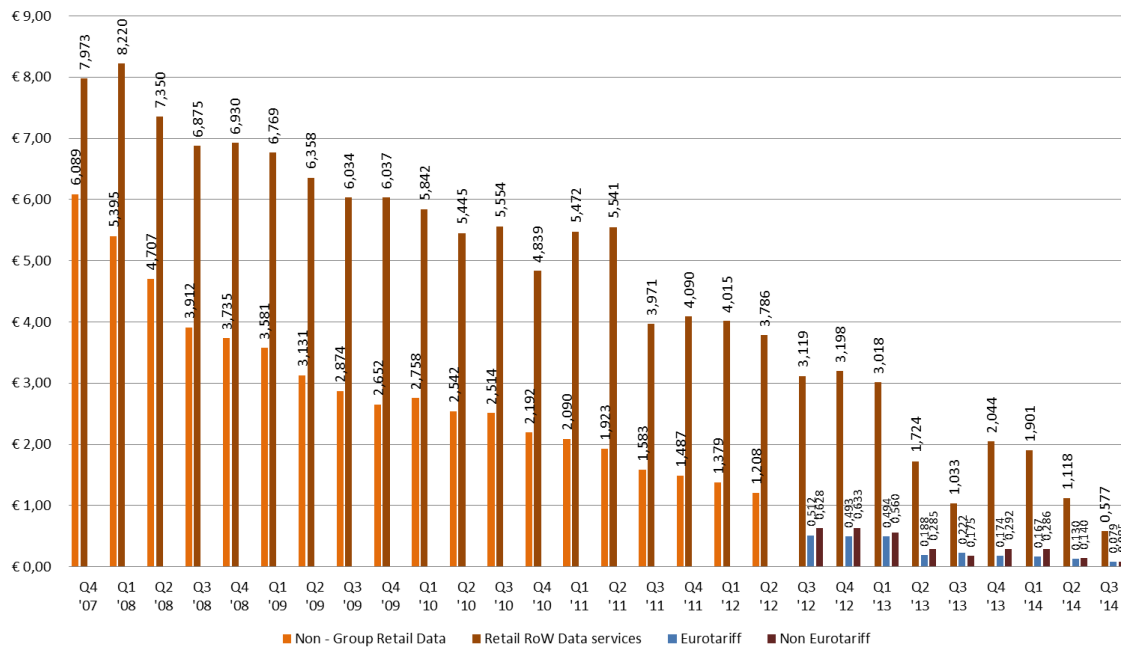
v. SMS wholesale prices:

Average wholesale price per intra-EEA roaming SMS: charges to non-group companies



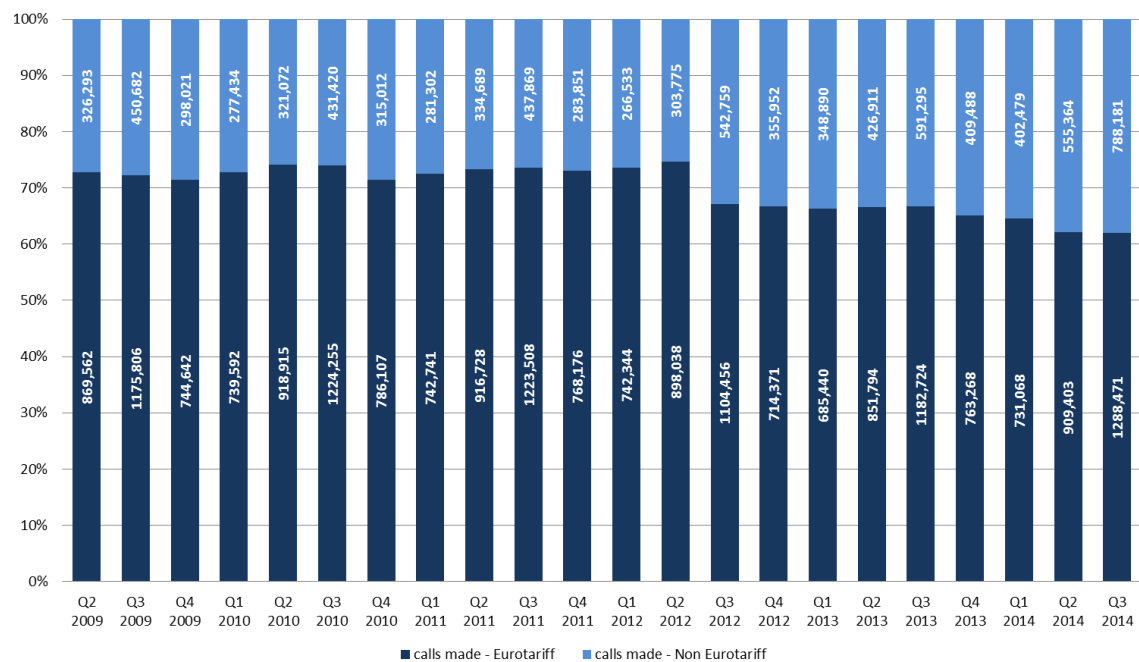
vi. Data wholesale prices:

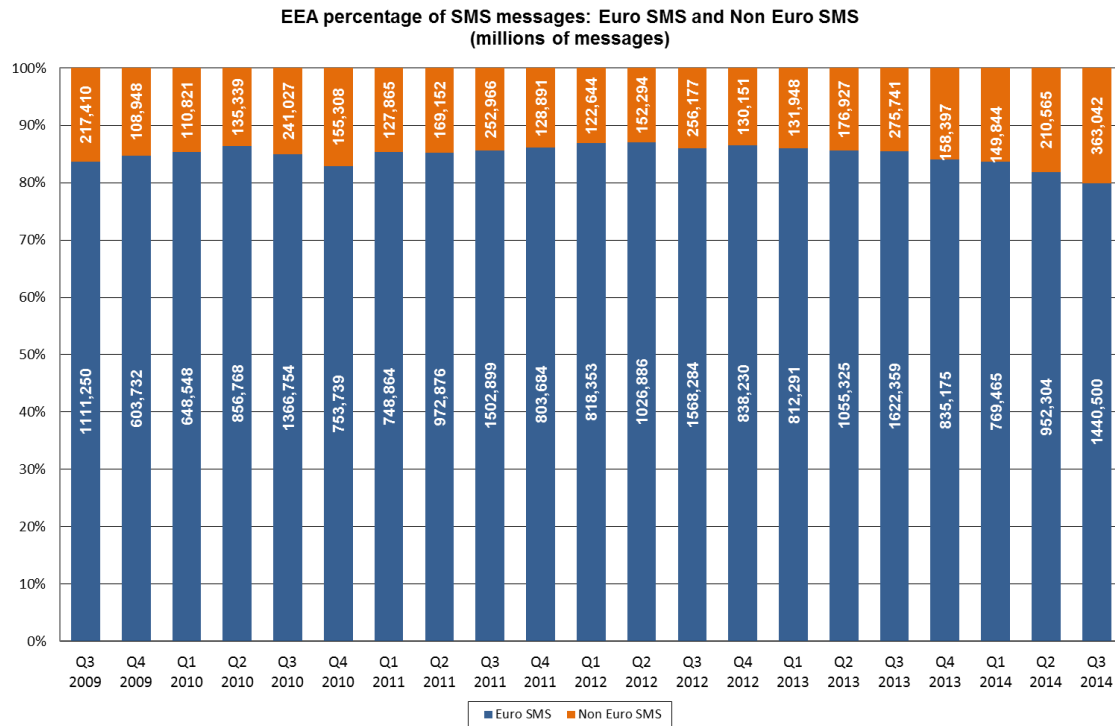
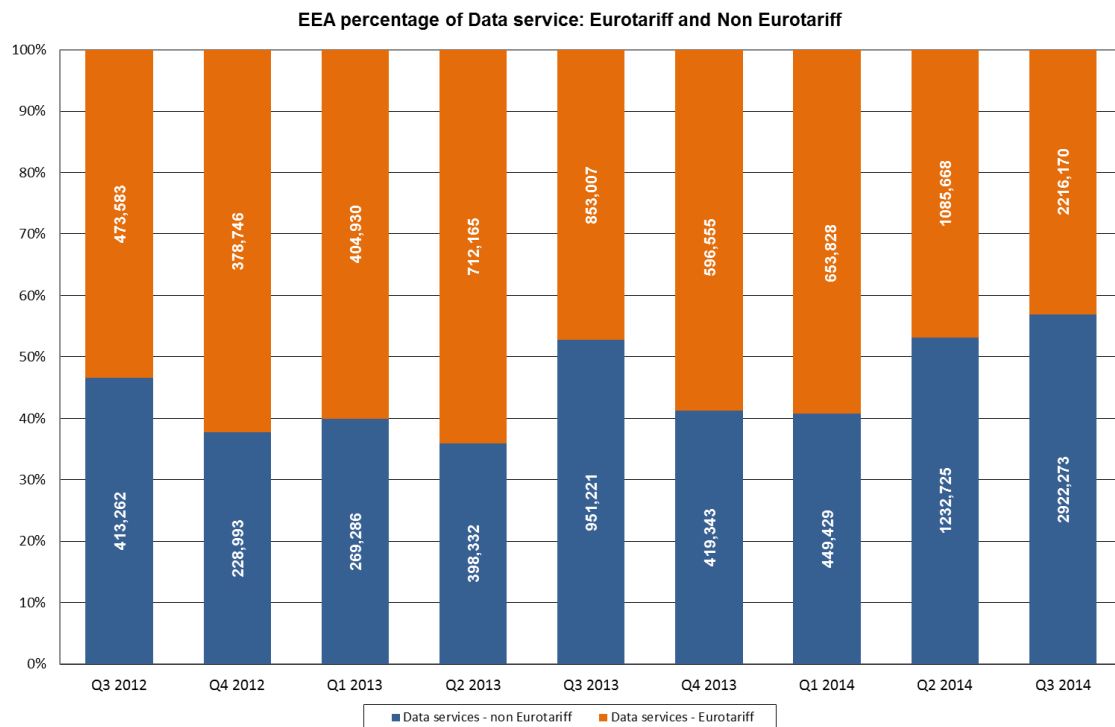
EEA average price per Mb for retail EU/EEA and RoW data (Eurotariff and Non Eurotariff: prepaid + postpaid)



vii. Voice volumes for calls made:

EEA percentage of calls made: Eurotariff and alternative tariffs (millions of minutes)



viii. SMS volumes:**ix. Data volumes:**

6 Evolution of termination rates

BEREC constantly monitors domestic³⁵ termination rates in Europe and provides an overview report twice a year on MTRs and SMS TRs, while FTR data are reported once a year. In this report, data on MTR and FTRs has been collected on a total of 35 countries: the 28 EU Member States together with Iceland, Norway, Turkey, Former Republic of Yugoslavia, Switzerland, Liechtenstein and Serbia.

Following NRA interventions in the two relevant markets (Market 1 'Wholesale call termination on individual public telephone networks provided at a fixed location' and Market 2 'Wholesale voice call termination on individual mobile networks') and the implementation of the Commission Recommendation on termination rates, the wholesale rates for both mobile and fixed interconnection have fallen significantly and still keep decreasing.

On the contrary, in most EU countries, SMS services are not subject to a wholesale termination price regulation. Nevertheless, a substantial decrease of SMS termination rates has been observed in the EU markets.

6.1 Mobile termination rates

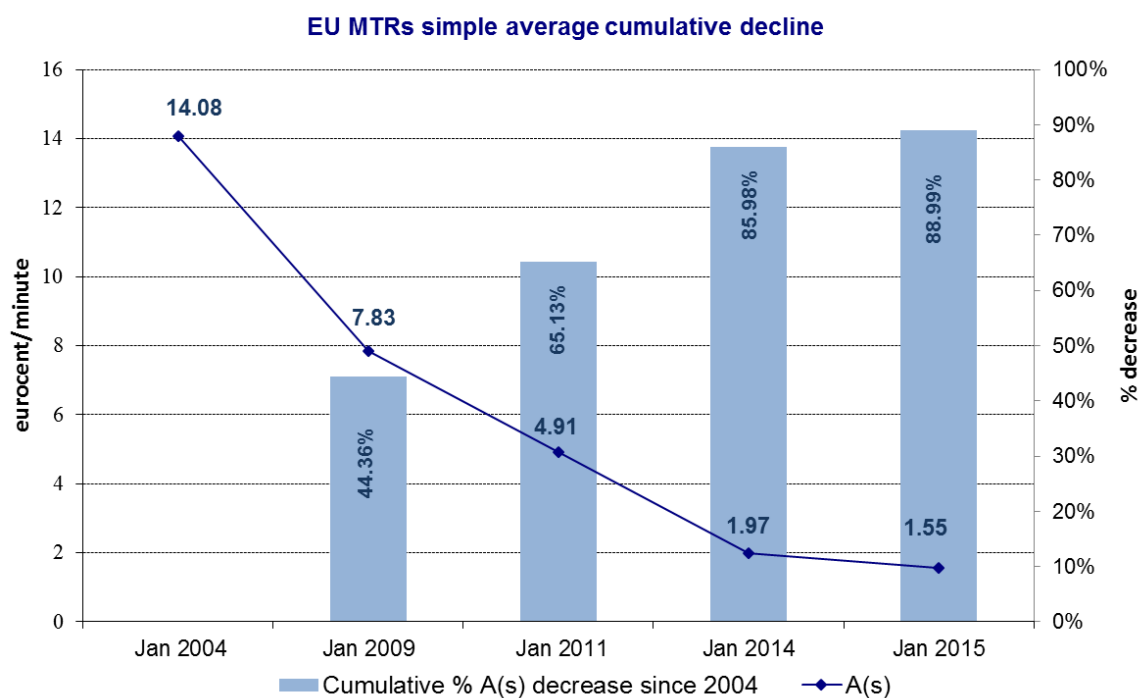
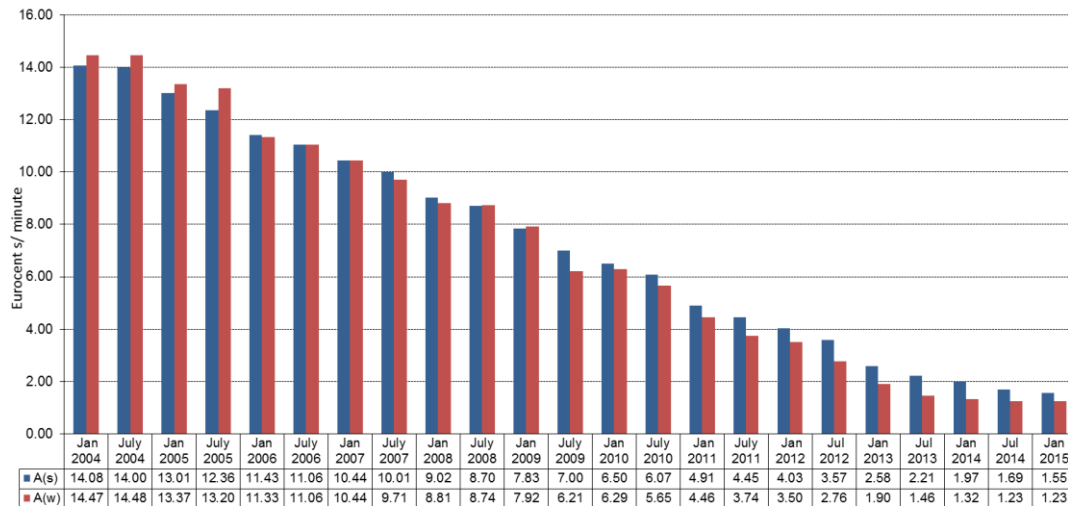
MTRs have been regulated based on cost-oriented pricing in all the EU-28 countries since the beginning of the decade. During the last three years NRAs have been implementing the Commission Recommendation on termination rates, which established the Long Run Incremental Cost as the cost standard to be applied to the interconnection service for voice in mobile networks at the wholesale level. In this report, Luxembourg, as the only Member State that regulated distinctively peak and off peak rates (it abandoned this differentiation in 2014) reported a single rate for each case. Now in all Member States the MTR are calculated as average rates.

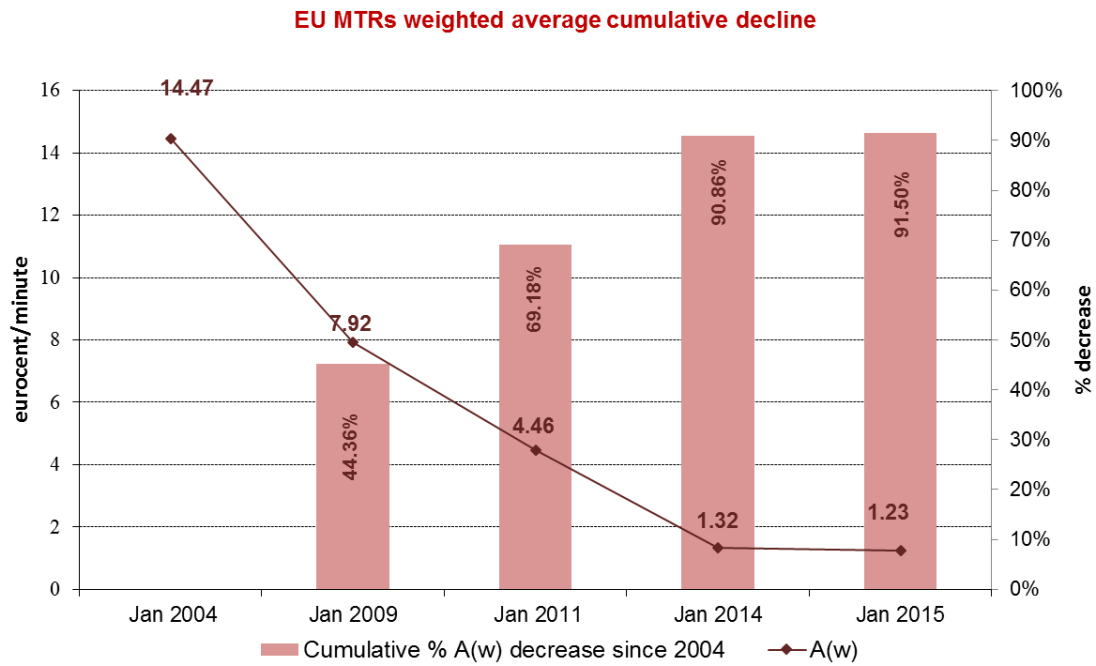
As shown in the graph below, wholesale interconnection rates for mobile telephony services in Europe fell markedly between January 2004 and January 2015: the simple average A(s) fell from 14.08 to 1.55 eurocents per minute, while the weighted average A(w) fell from 14.47 to 1.23 eurocents per minute.³⁶

³⁵ Referring to calls originated and terminated in the same EU country.

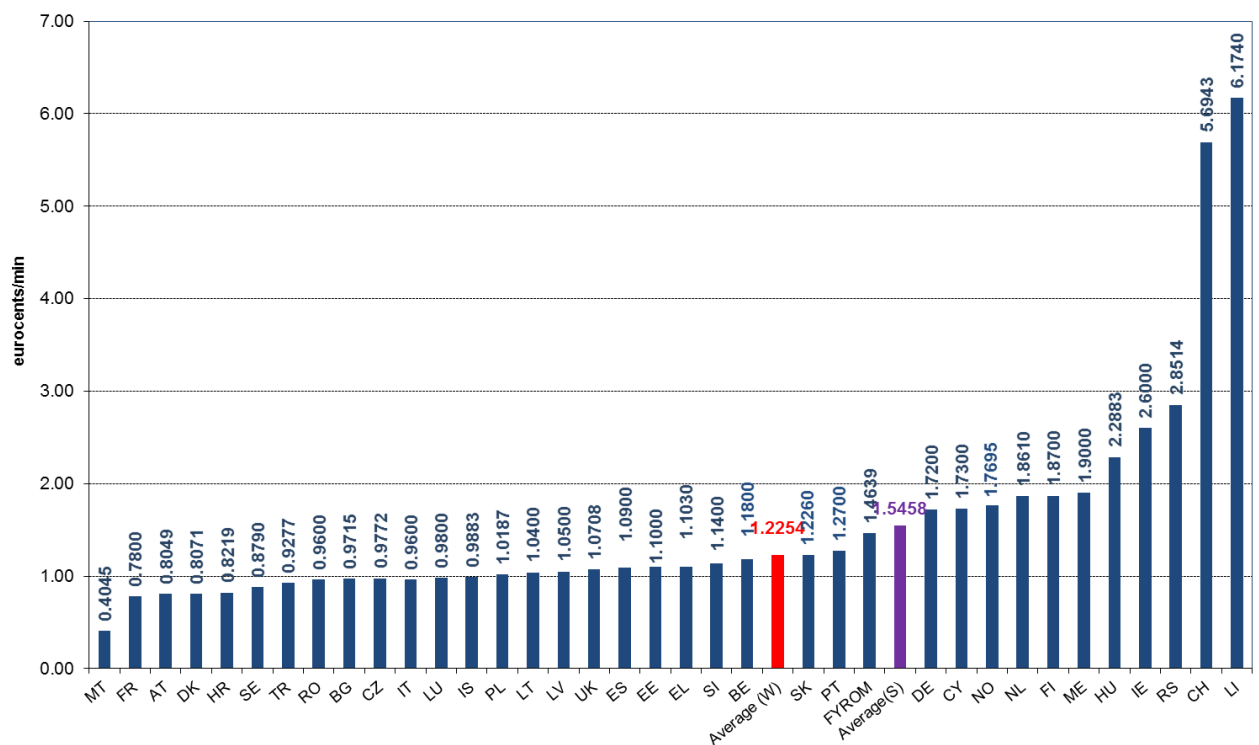
³⁶ In the BEREC periodic MTRs benchmarks, both a simple average and a weighted average are reported. The latter is calculated by weighting each country's average with the relative share of the country's subscribers (over all the subscribers).

In particular, the following two figures below describe the decreases for the simple average and the weighted average in cumulative terms from 2004: a) after 5 years, $A(s) = -44.36\%$ and $A(w) = -45.24\%$; b) after 7 years: $A(s) = -65.13\%$ and $A(w) = -69.18\%$; and c) after 10 years: $A(s) = -85.89\%$ and $A(w) = -90.86\%$, d) after 11 years $A(s) = -88.99\%$ and $A(w) = -91.50\%$.





For January 2015, the average rates³⁷ for all the countries for which MTRs have been collected, together with European simple and weighted averages, are shown in the figure below.



Source: BEREC Report on Fixed and Mobile Termination (as of January 2015)

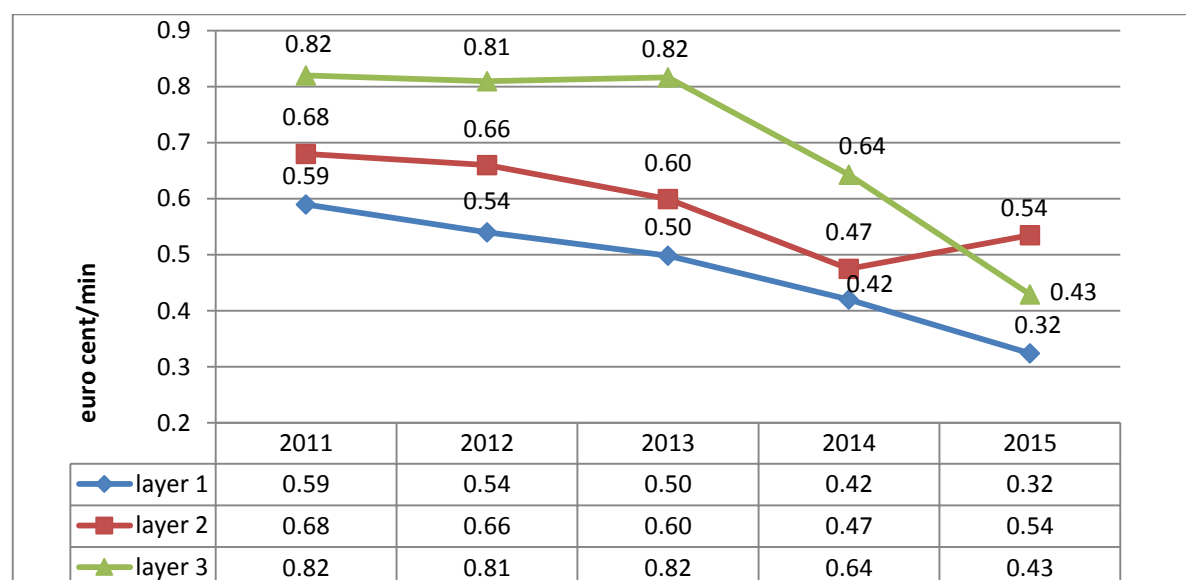
³⁷ Average MTR per country is obtained by weighting the average MTR of each operator by its market share, measured in terms of subscribers.

6.2 Fixed termination rates

Since the beginning of the liberalisation period, when the incumbent operators had all the end customers of fixed network services, the termination service has been regulated not only in terms of price, but also in terms of the service characteristics and quality parameters. From the beginning, the regulation of voice termination in fixed networks has resulted in a clear overall decrease in FTR over the last decade, although of a smaller magnitude than MTR. In the last year, however, a significant reduction in this regulated price has taken place in the EU-28 countries due to the increasing implementation of the Commission Recommendation on termination rates, although it remains less advanced than for MTR. In this report FTRs have been collected from a total of 30 countries.

Fixed interconnection services may be supplied at different levels of the incumbents', or any other fixed rival's, network. BEREC's analysis is based on a differentiation of network hierarchies and, in particular, on three different network layers for the relative distance of the interconnection level to the termination point. Although some countries have more layers, a three-layer model is usually offered: local transit (layer 1), single transit (layer 2) and double transit (layer 3). As of 2013, not all NRAs regulate all three layers, but at least one is most commonly found.

Compared to MTRs, the fall in FTRs is smaller, as the level of tariffs has been significantly lower and the state of implementation of the LRIC cost standard is less advanced than for MTR. As shown in the figure below, the simple average of wholesale interconnection rates for a fixed telephony service terminated in the network of European incumbent operators decreased between January 2011 and January 2015: from 0.59 to 0.32 eurocents per minute (layer 1)³⁸; from 0.68 to 0.54 eurocents per minute (layer 2)³⁹; and from 0.82 to 0.43 eurocents per minute (layer 3)⁴⁰.



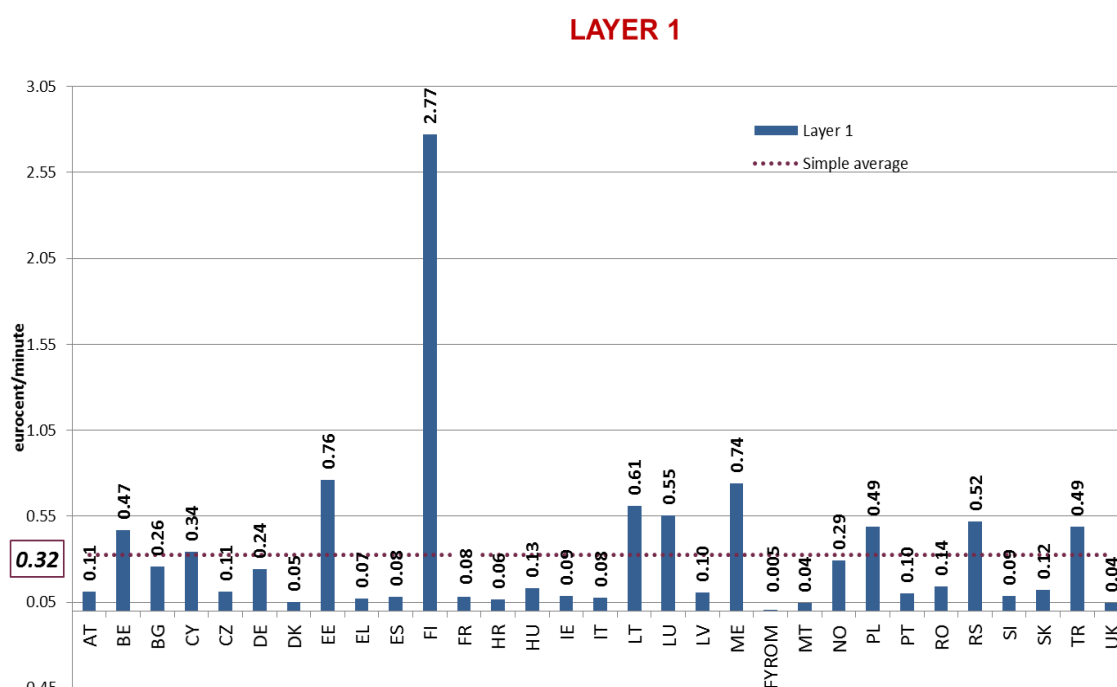
³⁸ The average Layer 1 rate calculated for 2014 increased from 0.41 to 0.42 €cents due to retroactive changes regarding FTRs in some of the countries.

³⁹ The average of Layer 2 is slightly higher in January 2015 compared to January 2014, due to the inclusion of additional countries that did not provide information for January 2014.

⁴⁰ An average call duration of three minutes is assumed according the standard formula = (fixed set-up charge + price per minute*3)/3.

Source: BEREC Report on Fixed and Mobile Termination (as of January 2015)

Individual Member States' average FTRs for incumbent operators' layer 1 as of 1 January 2015 are shown in the table below



Source: BEREC Report on Fixed and Mobile Termination (as of January 2015)

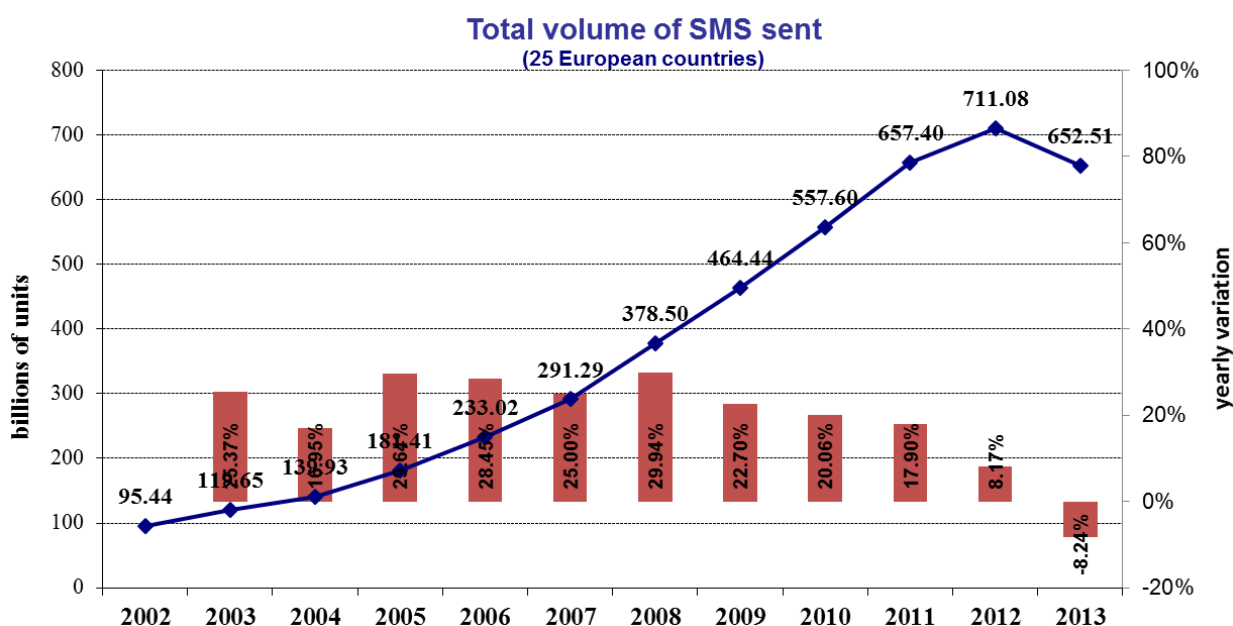
6.3 SMS termination rates

A traditionally important service in terms of the revenues generated is the messaging (or SMS/MMS) service. SMS, as well as a minute of voice that originates in one network and finishes in a different network, needs an interconnection, and therefore a termination service, to reach the end user. In general, off-net wholesale SMS services have not been subject to price regulation in the majority of the EU-28 countries; i.e. they have been freely set by commercial agreements among operators.

In 2013, the SMS volume decreased for the first time, after the trend for a slowing-down of the SMS volume increase was encountered in most EU countries in recent years, in parallel with reductions in the price paid for each SMS sent.

In this regard, the graph below shows the long-term trends for the total volume of SMS sent at European level⁴¹.

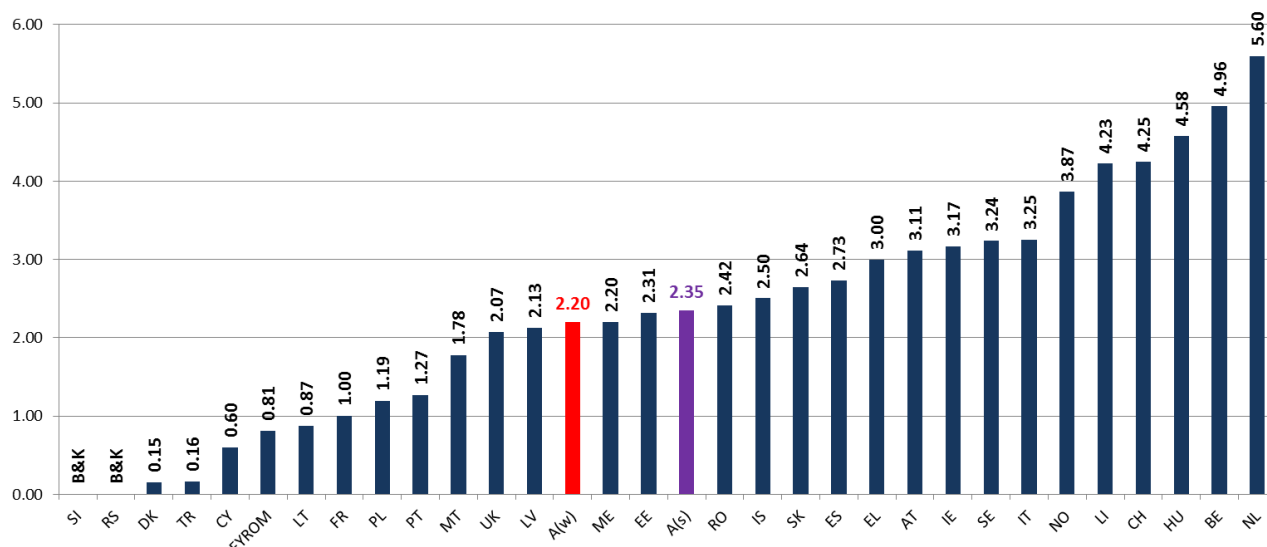
⁴¹ The graph is based on the time periods of the countries for which information was available for the entire period from 2002 to 2013, namely: Austria, Belgium, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Lithuania, Malta, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland and the UK.



The emergence of OTT messaging services, usually at zero marginal unit prices, has had a clear impact on the traditional SMS services offered by the traditional operators as long as they had not switched to unlimited SMS bundles, which may have been hampered by high SMS TRs. The general trend, as detailed in the BEREC report for those countries which report on the SMS TRs, is now one of reductions in the wholesale prices of SMS.

From January 2014 to January 2015, for those countries which report on the SMS TRs, wholesale SMS termination rates decreased from 2.54 to 2.35 eurocents per minute in terms of a simple average, and from 2.29 to 2.20 eurocents per minute in terms of a weighted average. Individual Member States' average rates, together with simple and weighted averages as of 1 January 2015, are shown in the table below⁴².

⁴² B&K means that 'Bill & Keep' agreements are in place for traffic between all domestic operators: termination rates are reciprocally set to zero.



Source: BEREC Report on Fixed and Mobile Termination (as of January 2015)

7 Machine to Machine communications

We increasingly see applications involving a large number of devices communicating with one another primarily across the Internet in an automated way with little or no human interaction between 'smart' devices and/or applications. They are described by terms such as "Machine-to-Machine Communications" (M2M) or "Internet of Things" (IoT).

Starting from simple M2M devices, M2M applications have grown rapidly over the last few years and are already influencing large parts of our daily life. Services such as real-time traffic management or push information on train delays have become normal for most citizens. However, a variety of forecasts predict that this is only the beginning of the development of this phenomenon and that billions of objects will be connected by 2020. Due to the fact that, in theory, almost each (electronic) device can become a 'smart' device, enabling the development of a very broad variety of services, M2M will probably become an everyday feature.

As of today, the main M2M applications are:

- automotive/Telematics ('connected cars'),
- e-health services,
- energy and utilities (smart metering'; smart grids),
- smart cities and smart homes,
- travel and transportation,
- other (mobile payment, agriculture etc.).

The main characteristics for these applications of M2M services are:

- An M2M device is addressed via an identifier (e.g. number(s), IP-address);
- M2M services can involve different ways of data transmission such as SMS and/or automatic calls, and can also be based on the IP protocol;
- Different access technologies are used. With regard to wireless transmission technologies, different spectrum bands are used;

- M2M devices can be either static (e.g. smart metres) or mobile (e.g. cars);
- Generally, traffic patterns, and consequently cost patterns, of M2M communications are very different from the traffic patterns of human communications, both in terms of type (usually data and, only in exceptional cases, voice) and volume: certain M2M devices generate a very limited amount of traffic at periodic intervals and in some cases no traffic at all, but only signalling. However, the value of these services goes far beyond the mere traffic generated, being used as enablers of various services provided to the customers by other subjects acting in different markets;
- M2M services require connectivity, but connectivity is only a small part of the M2M service/value chain. The role of telecommunications companies in the M2M value chain is initially only to transport the 'bits' for the M2M partner who provides the M2M service to the client. M2M services generally imply low data volumes and a low average return per unit (ARPU), however, with the exception of services involving, above all, video transmission. Therefore, according to some stakeholders, the provision of M2M services is only economically viable in cases of large-scale production. To achieve these economies of scale, products are often manufactured for the world market;
- In the case of products designed for the world market and/or intended to be moved across borders (e.g. automotive, e-readers, appliances, etc.), M2M services are global by nature. Devices and, if necessary, SIMs are provided from manufacture and then distributed/shipped globally. In the case of mobile M2M connections, connectivity is based on the international roaming agreements of the mobile network operator (MNO). Many M2M devices are in a state of permanent roaming. In these devices a SIM card with a national international mobile subscription identity (IMSI) is usually incorporated. More and more mobile network operators (MNOs) also use ITU-resources, i.e. IMSIs from a mobile network code (MNC) from the shared mobile country code (MCC) 901;
- Most M2M devices are designed to be used for several years and the cost of their replacement is very high. In most cases, the business model is B2B, even if devices may be related to consumers (B2B2C).

Looking to the future, according to some publicly-available sources, it is already estimated that in 2018 the amount of M2M devices (connections) will grow to about two billion in 2018, representing a share of around 19.7% of all mobile devices worldwide. This means that M2M devices will outnumber laptops, tablets and all other portable devices (phones excluded)

In parallel, the amount of data transferred is also expected to rise, leading to a change in the technology used: whilst today most mobile M2M devices only transfer a low amount of data and therefore mostly use 2G connections, in 2018 M2M applications, such as on-board car navigation or healthcare devices, will probably start to transfer larger data packages, which need a faster connection, pushing 3G to become the leading technology in the sector.

The data consumption of M2M applications will probably remain a small percentage of the mobile data traffic for a few years. However, according to CISCO's publicly

available estimates, the average traffic of an M2M device will quintuple, rising from about 64 MB per month in 2012 to about 330 MB per month in 2017.

The forecast growth of M2M communications in the coming years will lead to an enormous growth of M2M-related revenues: in August 2013, Analysys Mason estimated that worldwide M2M connectivity-related revenues from SMEs, large enterprises and the public sector would rise from under USD 10 billion in 2013 to more than USD 80 billion in 2023. While in 2013 SMEs generated about 8% of the revenue made with M2M connections, this share would rise to about 11% in 2023.