Body of European Regulators for Electronic Communications

BEREC

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Brief summary of the results from the 20th Plenary in Rome 25-26 September 2014

Documents approved for publication:

BoR/2014/2	BoR Decision on BEREC Expert Working Groups
BoR (14) 114	BEREC Regulatory Accounting in Practice Report 2014
BoR (14) 115	International Roaming BEREC Benchmark Data Report April 2013 – September 2013
BoR (14) 116	Consultation report for BEREC report Monitoring quality of Internet access services in the context of net neutrality
BoR (14) 117	BEREC Report on monitoring the quality of internet access services in the context of net neutrality
BoR (14) 122	BEREC Report "Case Studies on regulatory decisions regarding vectoring in the European Union"

Documents approved for public consultation

BoR (14) 119	Draft BEREC Strategy 2015-2017
BoR (14) 120	Draft BEREC Work Programme 2015
BoR (14) 123	Draft BEREC Guidance on the regulatory accounting approach to the economic replicability test (ex-ante margin squeeze tests)

Other relevant links:

Board of Regulators Agenda

Press release

Monitoring quality of Internet access services in the context of net neutrality

Monitoring quality of Internet access services in the context of net neutrality is important to improve NRAs' capacity to perform *regulatory assessments of potential degradation of service*, as pointed out in the BEREC Framework and Guidelines on Quality of Service in the scope of Net Neutrality.

Furthermore, transparency enables end users to compare Internet access service (IAS) offers and hence *strengthen the demand side of the market*. It is therefore essential to have appropriate quality monitoring tools to implement the recommendations drawn from the earlier studies in this area.

The main goal of this new BEREC report is to establish a basis for the creation of Internet access service quality monitoring systems covering *two main use cases*:

A. Providing transparency on the quality of the Internet access service for end users and

B. Regulatory supervision through monitoring of quality of the Internet access service with regard to potential degradation of service.

Main findings and recommendations from the BEREC report:

Quality metrics for Internet access services (IAS)

In order to assess the quality of IAS, BEREC recommends measuring actual performance of the service, taking into account as a minimum the following IP layer parameters: Upload and download speed, delay, jitter, and packet loss ratio. In developing measurement methodologies for IP-based communications, further development of technical specifications is also needed, primarily by the Internet Engineering Task Force (IETF).

Since connectivity to other networks (autonomous systems) is an essential part of the IAS offer provided by an Internet service provider (ISP), this connectivity should also be covered by the measurement methodology. BEREC recommends that measurements beyond the ISP leg, including the interconnection of the ISP, should be used to account for the connectivity of the ISPs towards the Internet.

The recommended IP layer metrics are applicable for fixed as well as wireless/mobile IAS. BEREC recommends consideration of the use of additional parameters, e.g. to reflect wireless/mobile network coverage aspects.

BEREC also recommends an emphasis on open source and open data solutions.

Transparency of IAS quality information (Use case A)

Average IAS performance (sub case A1) and *individual* IAS performance (sub case A2)

BEREC recommends implementing end user transparency measurements in a user-friendly manner. A software-based measurement agent downloaded to end user equipment can be sufficient given that measurement results are validated by collecting additional end user information.

Regarding aggregated results, BEREC recommends - for reasons of cost-effectiveness and user-friendliness - that averaging (based on data gathered from all participating users) should be done based on crowd-sourcing.

Regulatory supervision of IAS quality (Use case B)

Degradation of IAS *as a whole* (sub case B1) and *applications* using IAS (sub case B2)

Measurements for supervision of quality of IAS as a whole will typically be conducted in one of two ways. The National Regulatory Authorities (NRAs) could either use a controlled system, e.g. with hardware probes, covering a preselected panel, or a less controlled system with software agents and a crowd-sourced user base.

When evaluating potential degradation of IAS as a whole, BEREC recommends that such measurements are conducted over time to allow trend analysis. Measurement results need to be assessed in the light of technical progress and market evolution, with the goal of evaluating potential effects such as the provisioning of specialised services at the expense of IAS.

Regarding monitoring of applications using IAS, BEREC recommends the use of appropriate tools to measure the performance of individual applications (may also be used for transparency, use case A) and also exploring the use of passive measurements. Leveraging on information from the measurement systems of content and applications providers (CAPs) and other complementary methods could also be considered.

Measurement results obtained by these methods will need to be assessed by experts regarding reasonable and unreasonable traffic management, in order to detect degradation of individual applications using IAS.

IAS quality measurement methodologies

Quality assurance of measurement results and regulatory assessment of the results require deep understanding of the underlying complexities of Internet communications, and of monitoring methodologies. It is expected that this understanding will need to further develop over time, and the exchange of experience among NRAs to foster convergence of practices, and participation in and contribution to standardisation activities, are good strategies for convergence in this area.

In particular when it comes to gaining experiences with assessment of degradation of service, BEREC recommends that NRAs collaborate to develop a common regulatory practice. A common understanding of evaluation of potential degradation of IAS as a whole, typically at the expense of specialised service, as well as assessment of degradation of individual applications, should be emphasised.

Relevant links:

BoR (14) 117 BEREC, Monitoring quality of Internet access services in the context of net neutrality

BoR (12) 131 BEREC, Guidelines for quality of service in the scope of net neutrality.

BoR (11) 53 BEREC, A framework for quality of service in the scope of net neutrality

BEREC report on regulatory decisions regarding vectoring in the EU

BEREC has analysed regulatory decisions regarding vectoring of the following four Member States: Austria, Belgium, Denmark and Germany. The analysis is descriptive and does not aim at being normative. It is not intended to recommend a best practice.

With vectoring the achievable bandwidth of VDSL2 subscriber access lines can be increased significantly based on a further use of the existing copper access network infrastructure. According to vendors downstream speeds of roughly 100 Mbps can be achieved at distances of up to 400 m and 50 Mbps on loops as long as 800 m. Vectoring enables this increase in bandwidth by cancelling interference between VDSL2 access lines of a cable (binder), which is one of the most significant factors limiting the achievable bit rate. This is achieved through the continuous monitoring of crosstalk coupling within a cable, and the real-time generation of "anti-noise" that cancels out this crosstalk between all pairs. Furthermore, the benefits of vectoring can be achieved with comparatively low investments, e.g. if VDSL2 is already deployed at street cabinets only the investments in vectoring capable equipment is necessary. Therefore, several operators in EU Member States – mainly incumbents – are interested in the introduction of vectoring in their networks.

Unfortunately, vectoring also has a significant drawback. Vectoring requires that all VDSL2 lines of a cable (binder) are controlled by only one vectoring system. This means, at least currently, that only one operator can use vectoring on VDSL2 lines of a cable (binder) and therefore an appropriate regulation is needed. This is a significant drawback insofar as it may have a negative impact on current competition based on local loop unbundling (LLU) and/or sub-loop unbundling (SLU).

The BEREC report on regulatory decisions regarding vectoring revealed the following findings. The four countries analysed promote the rollout of vectoring by ensuring that the operator deploying vectoring can do so exclusively. 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 ANO can also use vectoring exclusively (DE)

The regulation which enables a single operator to use vectoring exclusively on the (full) loop is only established if demanded by an operator (AT, BE) and depends on the use of VDSL2 systems on unbundled (full) loops:

- VDSL2 systems are not used on unbundled (full) loops: the obligation to unbundle loops for the use of VDSL2 is lifted on the national market (BE)
- The use of VDSL2 systems on unbundled (full) loops is relevant: the local loop unbundling (LLU) obligation is lifted on a case-by-case basis and only in areas with no LLU (AT).

In both cases, the regulatory decision regarding vectoring on the full loop is asymmetric which reflects that only the SMP operator demanded the exclusive use of vectoring. In the two other Member States no operator has the possibility to use vectoring exclusively on the full loop because either the according regulatory decision is still in development (DK) or no operator demanded the exclusive use of vectoring on the full loop (DE).

If a case-by-case approach applies, SLU/LLU can be refused if the following conditions are fulfilled:

- The (SMP) operator has either already implemented vectoring or plans to implement vectoring within a certain time period.
- The (SMP) operator has to offer as a substitute to SLU/LLU a VULA/layer 2 access service.
- The (SMP) operator has also to inform the other operators where it already has implemented vectoring and to some extent also on its plan to implement vectoring.

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 work in practice.

Literature

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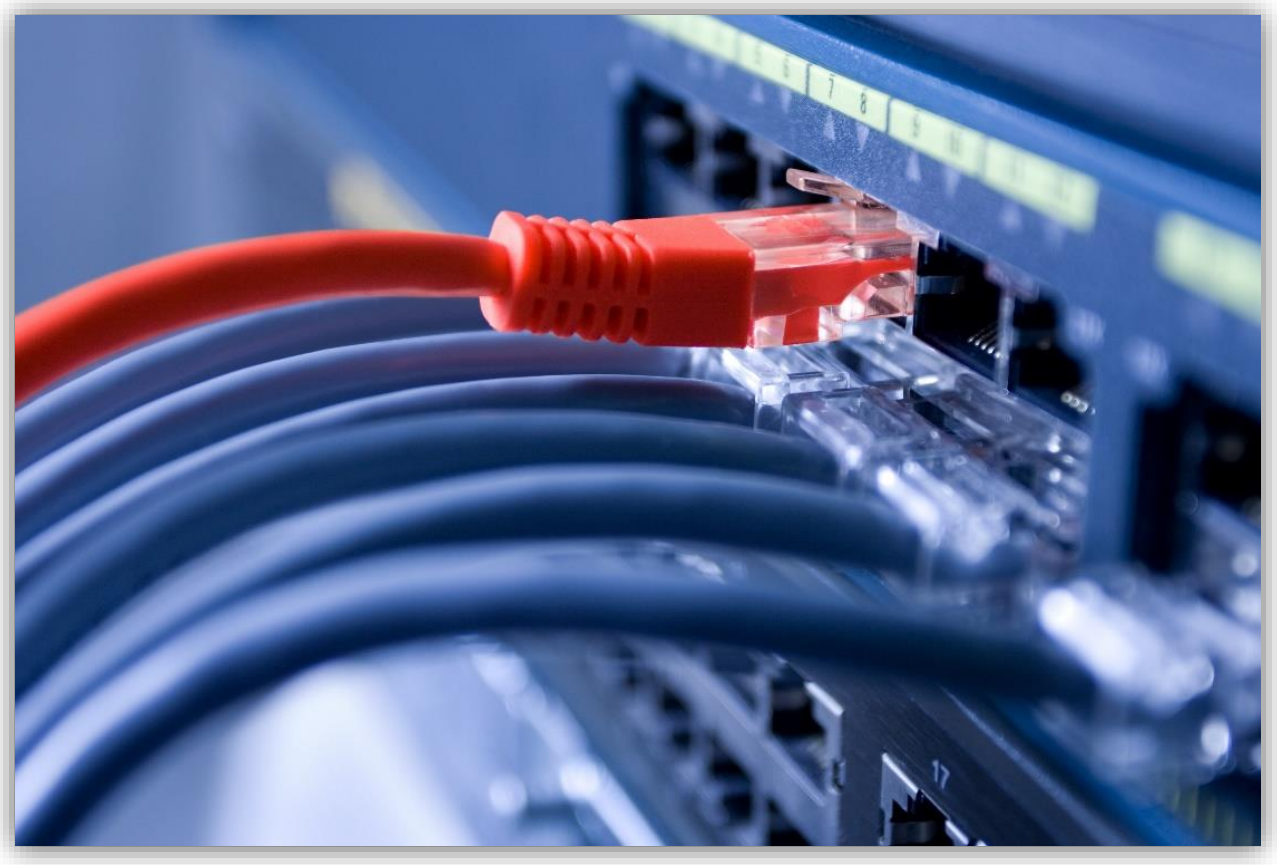


Ongoing BEREC Public Consultations

Public Consultation No 3 on the draft BEREC Strategy 2015-2017

To run from 29 September to 24 October 2014, with an oral hearing on 16 October 2014

The draft BEREC Strategy 2015-2017 aims to enhance BEREC's effectiveness by setting a clear direction for all BEREC activities during the period 2015-2017, in view of the challenges ahead.

In this context, the document outlines the 3 strategic pillars for BEREC's activities, as follows:

1. Promoting competition and investment;

2. Promoting the Internal market;

3. Empowering and protecting end-users;

The document emphasised the importance of the quality of BEREC output and the operational efficiency, which could contribute directly to achieving BEREC's strategic vision. BEREC will reflect its vision in its work programmes, and seek to improve its work planning in order to optimise the use of its resources.

The achievement of this objective will be developed at three levels : by working to improve the quality and consistency of individual NRA decisions through guidelines and best practices, by engaging and cooperating effectively in particular with the Commission and other stakeholders and by improving working methods and the quality of the output.

Further information here

Public Consultation No 4 on the draft BEREC Work Programme for 2015

To run from 29 September to 24 October 2014, with an oral hearing on 16 October 2014

The draft BEREC Work Programme 2015 was discussed and agreed at the 20th BEREC Board of Regulators meeting in Rome on 25 September 2014. The draft BEREC Work Programme for 2015, based on the draft BEREC Strategy 2015-2017, maintains BEREC's commitment to the development of regulatory best practice amongst National Regulatory Authorities (NRAs), leading to independent, consistent, high-quality regulation of electronic communications markets for the benefit of Europe and Europe's citizens. The 2015 Work Programme aims to respond to the current regulatory challenges and to prepare BEREC to confront future challenges resulting from market and technological developments, and from the most important European policy objectives.

According to Article 5 (4) of the BEREC Regulation, the BEREC Work Programme is subject to a public consultation and has to be approved before the end of this year. The role of the public consultation is to increase transparency and to provide BEREC with valuable feedback from all interested parties

Further information here

Public Consultation No 5 on the Draft BEREC Guidance on the regulatory accounting approach to the economic replicability test

To run from 29 September to 24 October 2014, with an oral hearing on 16 October 2014

The draft BEREC Guidance on the regulatory accounting approach to the economic replicability test (i.e. ex-ante/sector specific margin squeeze tests) was discussed and agreed at the BEREC Board of Regulators meeting in Rome on 26 September 2014. In accordance with Article 5 of the BEREC Regulation, the draft BEREC Guidance document is subject to consultation.

Further information here

BEREC Benchmark Data Report on IR Q4 2013 – Q1 2014

Background

This BEREC Benchmark Report on International Roaming (the "Report") presents the results of the 13th round of data collection on European international roaming services undertaken by the Body of European Regulators for Electronic Communications (BEREC). The Report covers the period 1 October 2013 – 31 March 2014, i.e. quarters 4 for 2013 and 1 for 2014. The Report also includes data from previous rounds of data collection conducted by BEREC and its predecessor, the European Regulators Group (ERG), to provide context for the current figures. The earliest data is from quarter 2nd 2007, when the Roaming Regulation was about to enter into force.

Evolution of prices

The information gathered by BEREC continues to show a good level of compliance with the Roaming Regulation in all EU Member States. At the retail level, all consumers have access to a Euro-Voice-, Euro-data- and a Euro-SMS-tariff. At the wholesale level, the voice, SMS and data roaming charges set between operators are in line with the declining regulated average caps in most of the Countries

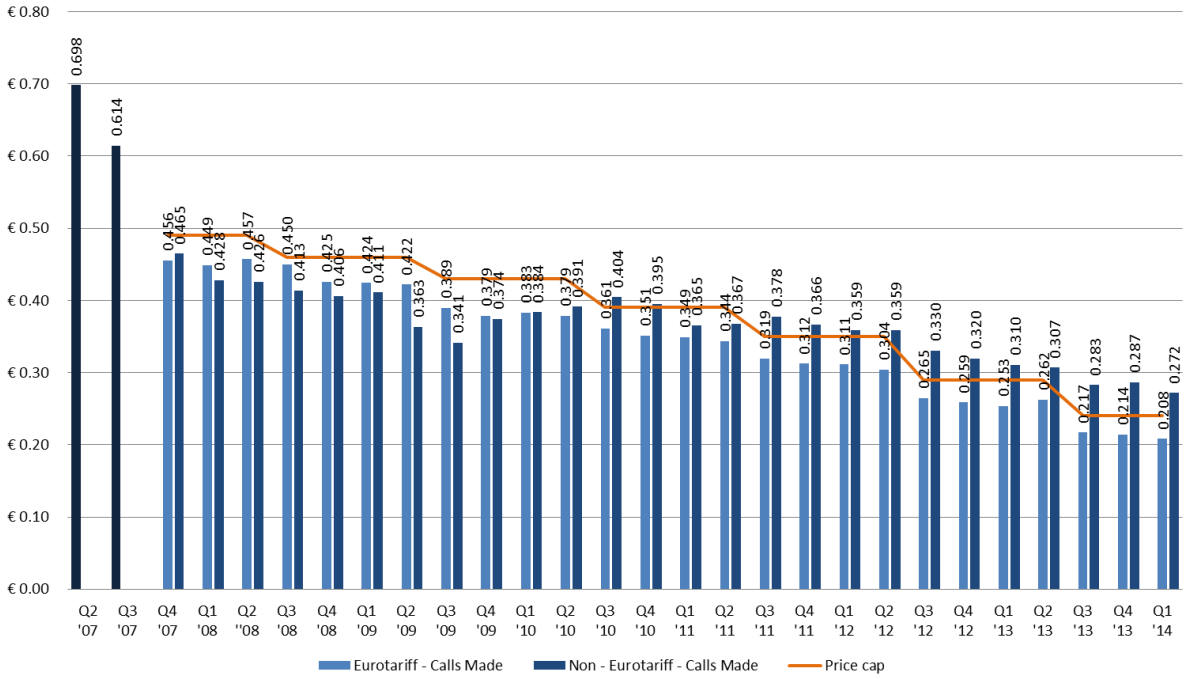
The applicable caps and the related Economic European Area (EEA) average prices, during the data collection period, were:

Service at Retail level (no VAT)	Q4 2013		Q1 2014	
	Price Cap	EEA Average	Price Cap	EEA Average
Eurotariff voice (making call) (€c/min)	24	21.4	24	20.8
Eurotariff voice (receiving call) €c/min)	7	5.9	7	5.7
Euro-SMS sent (€c/SMS)	8	7.3	8	7.2
Data transfer (€c/MB)	45	17.4	45	16.7

Service at wholesale level (no VAT)	Q4 2013		Q1 2014	
	Price Cap	EEA Average	Price Cap	EEA Average
Wholesale voice (€c/minute)	10	9.4	10	6.8
Wholesale SMS (€c/SMS)	2	1.9	2	1.7
Wholesale data (€c/MB)	15	6.1	15	4.2

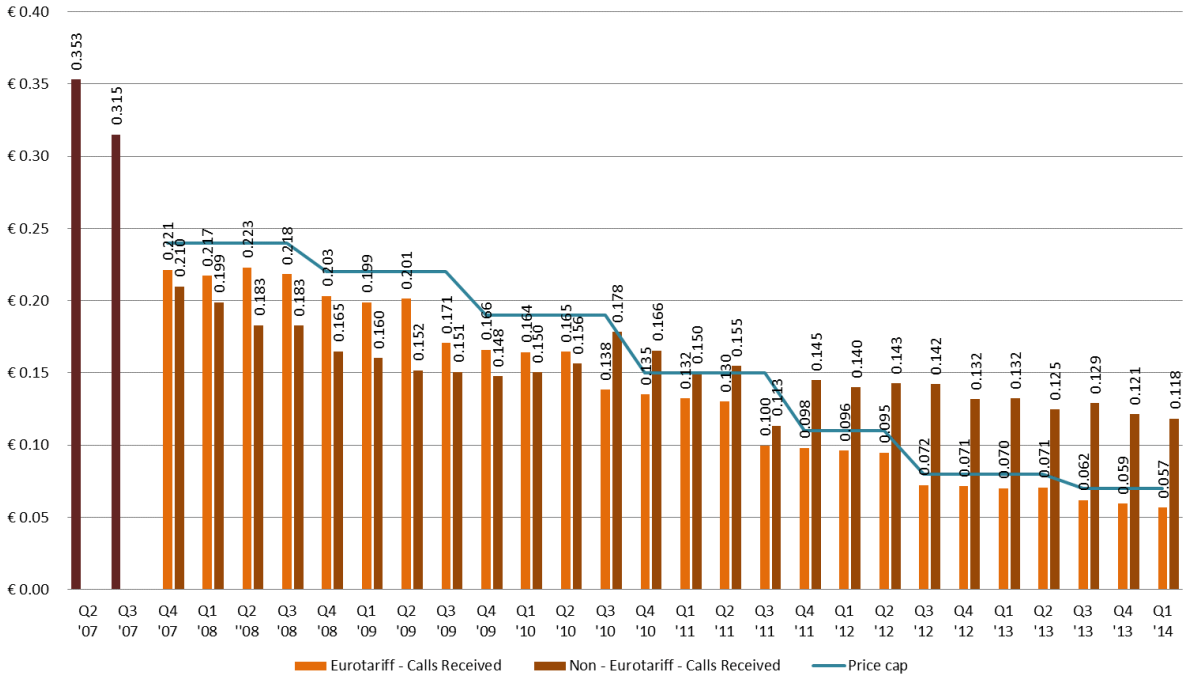
In general, **average Eurotariff retail voice roaming rates** remained fairly below the regulated caps in most EU Member States during the data collection period. For calls made, the EU average Eurotariff was €0.214 in Q4 2013 and 0.208 in Q1 2014 compared to a cap of €0.24. The EU average unregulated voice tariff for calls made (Figure 3) was lower than during the equivalent period one year ago: € 0.287 and 0.272 respectively in Q4 2013 and Q1 2014 compared to 0.320 and 0.310. For calls received, the EU average Eurotariff rate was nearer the cap at €0.059 during Q4 2013 and €0.057 in Q1 2014, compared to a cap of €0.070.

Figure 3: EEA average retail price per minute for intra-EEA roaming voice calls made



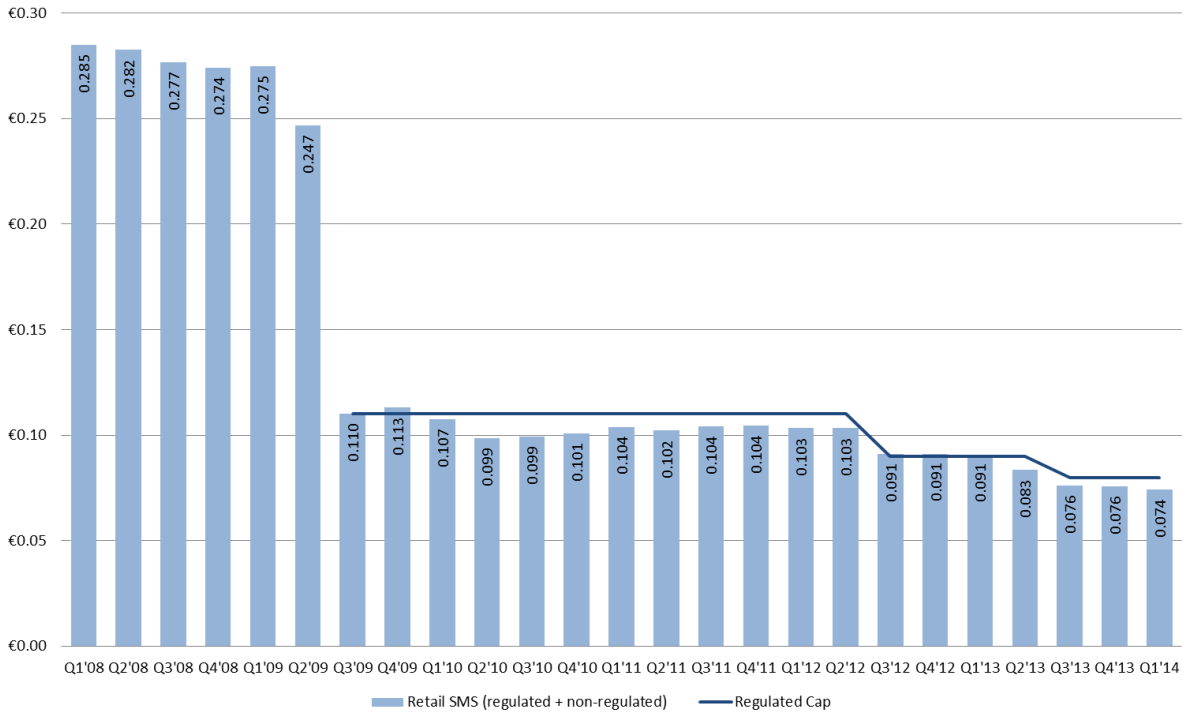
For **calls received**, (Figure 6), unregulated prices are lower than during the equivalent period one year ago (€0.121 during Q4 2013 and €0.118 in Q1 2014 compared to €0.132 in both Q4 2012 and Q1 2013).

Figure 6: EEA average retail price per minute for intra-EEA retail roaming voice calls received:



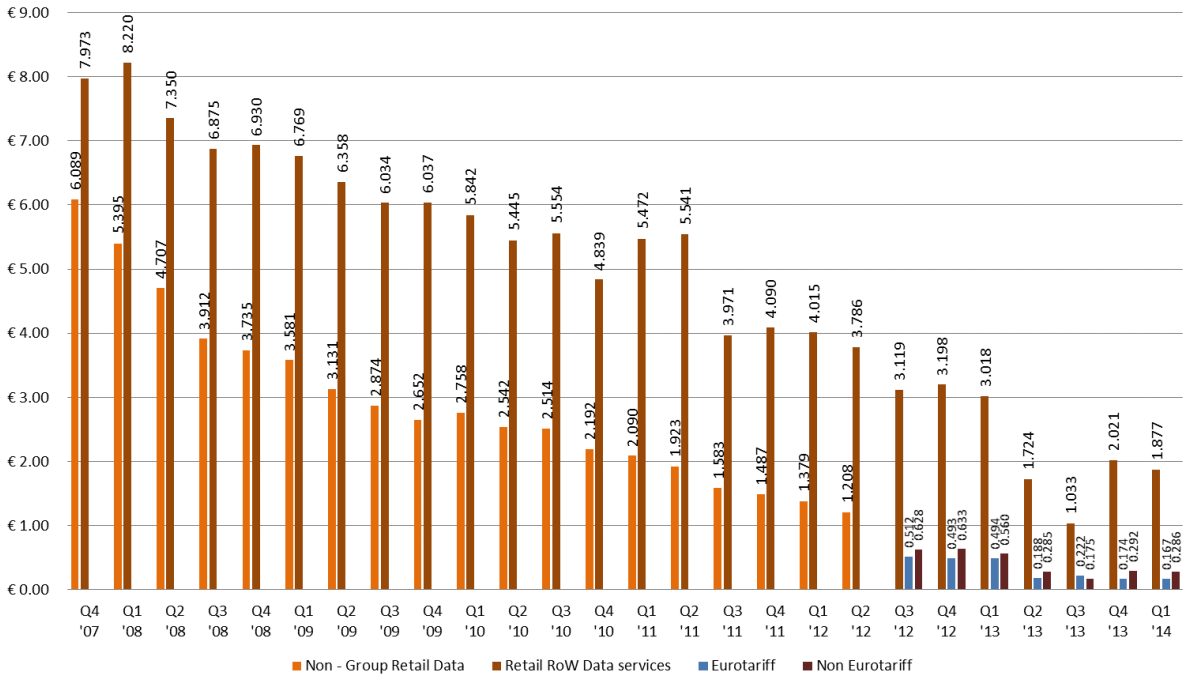
The introduction of the **Euro-SMS** in the EU in accordance with the 2009 Regulation continued in the 2012 Regulation and has led to an EU average Euro-SMS price (of around €0.072 both in Q4 2013 and in Q1 2014, compared to a regulated cap of €0.08. The EU average price for unregulated SMS is higher, at €0.102 in Q4 2013 and €0.094 in Q1 2014. Before the 2009 Regulation, the EU average SMS price was around €0.27 - €0.24 (at Q1 – Q2 2009).

Figure 27: Average EEA price per retail SMS (Euro + Non Euro SMS tariffs)



The 2012 Regulation introduced new retail **price caps for data services** (€0.45 in both Q4 2013 and Q1 2014). This has led to a progressive drop in retail prices. There is a significant difference between the prices for non-group retail data services in 2011/2012 and the data Eurotariff for the relevant period: €1,487 in Q4 2011, €1.379 in Q1 2012 comparing to €0.174 and € 0.167 in the same quarters Q4 2013 and Q1 2014 for the Eurotariff.

Figure 35: EEA average price per Mb for retail EU/EEA and RoW data (Eurotariff and Non Eurotariff: prepaid + postpaid)



Evidence of market forces at work

For voice roaming services, **average EEA prices are close to the regulated caps**. This suggests that providers see little attraction in competing on Eurotariff rates, despite the fact that there is a significant margin between typical wholesale prices and retail caps.

On the other side the, as also reported in the previous Benchmark Reports, the European average alternative price for calls made remains significantly above the Eurotariff average price.

Calendar of the future meetings and events

2nd BEREC Stakeholder Forum Meeting	16.10.2014	Information
4th Contact Network meeting for 2014 in Finland	13.11.2014	Information
21st BEREC Plenary Meeting in Brussels	04.12.2014	Information
Public debriefing from the 21st BEREC plenary	11.12.2014	Information

For further information:

www.berec.europa.eu

press@berec.europa.eu

paola.calestani@berec.europa.eu

BEREC Office:

Z. A Meierovica bulvāris № 14
LV-1050 Rīga
Republic of Latvia