

International Roaming Regulation

BEREC Guidelines on

**Regulation (EU) No. 531/2012 as
amended by Regulation (EU) No.
2120/2015**

**(Excluding Articles 3, 4 and 5 on whole-
sale access and separate sale of ser-
vices)**

Executive Summary

1. On 26 November 2015, the Regulation (EU) No 2015/2120 of the European Parliament and of the Council of 25 November laying down measures concerning open internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation (EU) No 531/2012 on roaming on public mobile communications networks within the Union (hereinafter "Telecom Single Market Regulation", "TSM Regulation")¹ was published and came into force three days after publication.

2. These revised BEREC Guidelines present an update of the former BEREC Guidelines on the application of the third Roaming Regulation excluding those regarding Article 3 (BoR (12) 107) of 27 September 2012 and those on Articles, 4 and 5 (BoR (13) 82) of 5 July 2013. This is considered necessary as the third Roaming Regulation, amended by the TSM Regulation (hereafter "Roaming Regulation"), incorporates substantial changes to the existing provisions and leads to significant changes to the current roaming regime. The revised BEREC Guidelines are designed to explain the Roaming Regulation and are complementary to the provisions set out therein. As such, the revised Guidelines are not presented as an official legal interpretation of those provisions.

3. The changes in this update of the former BEREC Guidelines deal especially with the implementation of the transitional regime, where operators from 30 April 2016 until 14 June 2017 are only allowed to charge the domestic price plus a surcharge that shall not exceed the maximum wholesale charges for intra-EU roaming services. When the Implementing Acts on the Fair Use Policy and the sustainability of the abolition of retail roaming surcharges are adopted, new guidelines could be produced to clarify the implementation of the new provisions. The intention of the Regulation is to abolish retail roaming surcharges without distorting domestic and visited markets.

4. The other parts of the revised Guidelines mainly remained unchanged except some minor wording clarifications. On retail issues the revised Guidelines make clear that the Roaming Regulation still provides the possibility to offer and choose alternative roaming tariffs in addition to the regulated roaming tariffs. Moreover, the main provisions to protect customers from running up high bills are left unchanged. According to the Roaming Regulation, operators are obliged to provide basic and personalized detailed information to roaming customers and a cut-off limit. The Guidelines explain in detail how these transparency and bill-shock provisions are to be applied in practice and when the basic information is to be delivered to the customer.

5. The Guidelines also include some paragraphs to take account of inadvertent roaming close to bordering countries, addressing customer protection measures that operators are required to take in such cases. Finally, as set out in the former Guidelines, BEREC also recommends and considers as good practice the application of bill-shock measures to communication services on ships and planes, whereby handsets automatically connect to a mobile network, as well as to inform customers about any additional charges that may occur as a result of this.

¹ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2015:310:FULL&from=EN>

6. The Guidelines related to wholesale issues include an explanation on how to calculate the average wholesale charges for voice, SMS and data roaming which are subject to the maximum wholesale charges set out in the Regulation.
7. Furthermore, the Guidelines clarify uncertainties that may arise for calculating the maximum charging intervals with regard to retail voice and data and wholesale voice, SMS and data roaming services.
8. Finally, the BEREC Guidelines cover various general issues such as charges for voicemail messages, charges in currencies other than the Euro, the scope of regulated roaming calls, the scope of regulated data roaming, value added services, machine-to-machine communication (M2M) and the geographical scope of the Roaming Regulation.
9. Regarding charges for voicemail messages the Guidelines stress that those are prohibited within the EEA pursuant to the Roaming Regulation. In order to prevent the application of different algorithms for charging in countries where charges need to be converted to Euro, the Guidelines clarify which exchange rates should be applied.
10. The scope of regulated roaming calls and regulated data roaming services are set out clearly to define these services. Data roaming services do not include voice calls and SMS, but, according to the Roaming Regulation, do include MMS messages. The revised Guidelines point out that the definition is applicable irrespective of the spectrum used and is therefore technology-neutral.
11. Value-added-services that are premium rate services account for the maximum wholesale charges only for the tariff component corresponding to the connection to such services and not to the service of the content provider itself. Providers should ensure that consumers are informed about how any such service expenditure is tarified, charged and controlled.
12. The geographical scope of the Roaming Regulation covers the European Union and as soon as the third Roaming Regulation regime amended by the TSM Regulation is incorporated in the European Economic Area (EEA) Agreement, the amended obligations will apply to Norway, Liechtenstein and Iceland as well. Some transparency measures in Article 14 and 15 are also applicable for customers using roaming services outside the EEA.

Introduction

These revised BEREC Guidelines are designed to explain the Roaming Regulation. These Guidelines replace the BEREC Guidelines published in 2013 dealing with the third Roaming Regulation (BoR (13) 15).

As before, these revised Guidelines are complementary to the provisions set out in the Roaming Regulation, and are not presented as an official legal interpretation of those provisions.

These revised Guidelines are complementary to the BEREC Guidelines on Articles 3, 4 and 5 of the third Roaming Regulation (namely, BoR 12(107) and BoR 13(82)).

BEREC notes that both the retail and wholesale provisions of the Roaming Regulation apply to any undertaking that provides regulated retail roaming services to roaming customers.

Retail issues

Regulated roaming services

1. The definition of regulated roaming calls pursuant to Article 2 (2) (h) of the Roaming Regulation refers to regulated roaming calls made or received from/to the visited network (i.e. a network situated in a Member State which is not the home country) from/to a Member State of the EEA, i.e. intra-EEA-calls, e.g. when an English customer is roaming in Spain and calls someone in Austria. The aforesaid applies analogously to regulated roaming SMS messages according to Articles 2 (2) (k). Regulated data roaming services, according to Article 2 (2) (m), are those data services consumed by a roaming customer whilst it is connected to a visited network.

Domestic retail price as basis for retail roaming prices

2. Article 2 (2) (r) of the Roaming Regulation defines the domestic retail price. This definition is the basis for the operators for the prices which apply for retail roaming communications intra-EEA, by virtue of Articles 6a and 6f of the Roaming Regulation. In the case of metered domestic retail prices, the domestic retail price considered as the basis for the price of a roaming service is at a maximum, the off-net price (price charged to a consumer for a call to a network other than the customers' network) for the domestic service. Since the policy objective of the Roaming Regulation is that the difference between the roaming and domestic tariffs should be eliminated, operators shall not apply a price for regulated roaming services which exceeds the price that would be incurred by the customer if it were consuming those services in the home country (assuming that the "Roam Like at Home" provision envisaged as from 15 June 2017 come into force) the domestic tariff plan in that customer's Member State. Regarding intra-EEA calls and taking into account Guidelines 1 and 2, operators are deemed to apply the same charging mechanism for calls that are terminated in their country.

3. In case there are different off-net prices in a subscription, operators shall be deemed to apply the same charging mechanism as in that customer's Member State.

4. The provisions stipulated in the Roaming Regulation do not require operators to increase the retail roaming prices up to the domestic price level, should the retail roaming prices be lower than the domestic prices as the Roaming Regulation only sets out maximum prices.

5. In situations where there are no specific domestic retail prices (e.g. in cases of domestic unlimited tariff plans or bundles or domestic tariffs which do not include data), the domestic retail price should be deemed to be the same charging mechanism as if the customer were consuming the domestic tariff plan in that customer's Member State (Recital 26).

6. For bundled tariffs (tariffs with a volume allowance), operators are deemed to apply the same charging mechanism as in their home country and therefore should be deducted from the domestic volume allowance. If that bundle has been exhausted (either in the customer's Member State or when roaming), the domestic retail price will be the domestic out of bundle tariff.

7. In some domestic tariffs, calls to limited groups (for example family members, a group of friends or business colleagues) may benefit from preferential tariffs. In this case, operators cannot charge more (for roaming calls made to that limited group) than the off-net domestic price (plus surcharge if any) applicable to calls to that group. In cases where these conditions contain a bundle or a package, operators can deduct as a maximum the off-net units from these allowances.

8. If operators apply a fee for each initial call (set-up fee) for domestic services, they could do so for the domestic charge for roaming services. If a surcharge is applied, operators have to comply with the provisions laid down in Article 6e (1) (b).

Transitional period

9. According to Article 6f (2), Article 6e of the Roaming Regulation also applies from 30 April 2016 until 14 June 2017 (the transitional period). This provision allows providers to add a surcharge for regulated roaming services in addition to the domestic price during the transitional period. Where a roaming provider applies a surcharge for the consumption of regulated retail roaming services, the sum of the domestic retail price and any surcharge applied must not exceed the price cap set out in Article 6e (1) (b). For calls received, which are not charged domestically, Article 6e (1) (c) provides that any surcharge applied shall not exceed the weighted average of the maximum mobile termination rates set out in the Implementing Act (Commission Implementing Regulation (EU) No. 2015/2352 setting out the weighted average of maximum mobile termination rates across the Union) by the Commission. For calls made, SMS sent and data used, Article 6e (1) (a) provides that any surcharge must not exceed the wholesale caps, which are currently 5 cents per minute, 2 cents per SMS and 5 cents per MB respectively. The prices do not include VAT.

10. In the case of bundled tariffs, there is no specific retail domestic price for volumes consumed within the allowance since the price is simply the deduction of volumes from the domestic allowance. When the roaming customer consumes units (whether or not they are covered by the bundle), the operator can additionally apply a per unit surcharge, which must not exceed the maximum price caps discussed in Guideline 9. If customers use more than their bundle allowance, the operator is allowed to charge as a maximum the out-of-bundle tariff (off-net) plus the surcharge, which in total shall not exceed the price caps set out in Article 6e (1) (b) and any surcharge applied for regulated roaming calls received according to 6e (1) (c). Should the operator not apply a surcharge, the price caps laid down in Article 6e (1) (b) do not apply.

11. Applying a surcharge is permitted for all regulated roaming services (voice, SMS, data) under the conditions stipulated in Article 6e (1) as well as for a single roaming service (e.g. only for data or outgoing voice calls). BEREC considers that the requirements set out in Article 6e (1) could be met separately by those roaming services subject to a surcharge. That means that if one operator applies a surcharge only for data and not for incoming calls, outgoing calls or SMS, the operator can charge a domestic retail price exceeding the price caps set out in Article 6e (1) (b) for the other regulated roaming services where only the domestic retail price is charged.

12. According to Article 6e (1) third subparagraph, the limit on the surcharge for data roaming services in Article 6e (1) (a) is also applicable to MMS when they are charged on a per-unit basis or a per kilobyte basis.

Implementation of RLAH (Roam Like at Home) + and RLAH

13. RLAH (Roam Like at Home) tariff plans include roaming services in the domestic bundle. RLAH + allows the roaming provider to apply a surcharge in addition to the domestic retail price during the transitional period.

14. According to Article 6e (3) of the Roaming Regulation, roaming providers must apply the tariffs set out in Articles 6a, 6b and 6c and Article 6e (1) to all existing and new roaming customers automatically. Similar to the provisions set out in the third Roaming Regulation, roaming providers may however offer alternative roaming tariffs as an alternative to RLAH and RLAH+ and customers may deliberately choose those alternative tariffs. Past experience shows that this is common practice for both the roaming providers and their customers. It follows that customers who have deliberately opted for an alternative tariff must be informed sufficiently about the regulated roaming tariff set out in Articles 6a, 6b, 6c and 6e (1). Therefore, BEREC considers that customers may keep their alternative tariffs, provided that the customers are duly informed about the available options and that they also deliberately choose to remain on those tariffs. Should a customer wish to switch between an alternative tariff and the regulated roaming tariff, operators must provide this possibility at any point in time within one working day and free of charge (see Guideline 23 'Transfer between tariffs'). Roaming providers shall inform (e.g. via SMS, via the monthly bill,...) customers with alternative tariffs plans of the nature of the roaming advantages which would thereby be lost.

15. Should operators make changes to their roaming tariffs which are not required to comply with the provisions of the Roaming Regulation, the customers may be entitled to withdraw from their contracts under national law depending on the individual case and the national legal provisions in the Member State concerned.

Fixed periodic roaming tariffs complying with the Roaming Regulation

16. The Roaming Regulation allows tariff packages which provide roaming customers with a per diem, or any other fixed periodic roaming charge (hereinafter "fixed periodic roaming tariff") and which contain a certain volume of regulated roaming services (Article 6e (1), subparagraph 4). Therefore, operators can offer fixed periodic roaming tariffs with a volume allowance as an option to their customers during the transitional period in addition to the regulated roaming tariffs. This means that these fixed periodic roaming tariffs cannot be the only tariff option available to roaming customers. BEREC considers that roaming providers which offer fixed periodic roaming tariffs during the transitional period must, before they enter into any agreement on such tariffs, inform their customers duly about the possibility of choosing a regulated tariff under Articles 6a, 6b, 6c and 6e (1) and of the advantages which would thereby be lost if they chose that fixed periodic tariff (Article 6e (3)).

17. A fixed periodic roaming tariff complies with Article 6e (1) Roaming Regulation - and should not be treated as an alternative tariff - on condition that the consumption of the full amount of that volume leads to a unit price for regulated roaming calls made, calls received, SMS messages sent and data roaming services which does not exceed the sum of the domestic retail price and the maximum applicable surcharge as set out in 6e (1) first subparagraph. To assess whether a fixed periodic roaming tariff complies with the Roaming Regulation, the sum of the domestic retail price and the maximum surcharge for the included volumes has to be calculated. For example, a fixed periodic roaming tariff consisting of 25 minutes calls made, 25 minutes calls received, 25 SMS messages and 25 MB could be charged a maximum surcharge of 3.285 Euro (25 minutes calls made * 0.05 Euro + 25 minutes calls received * 0.0114 + 25 SMS * 0.02 Euro + 25 MB * 0.05 Euro) in addition to the domestic price. For bundled domestic tariffs, this means a fixed periodic roaming tariff of up to 3.285 Euro for these roaming volumes would comply with Article 6e (1) Roaming Regulation. For metered domestic tariffs, a fixed periodic roaming tariff of 3.285 Euro plus the domestic retail price for 25 minutes calls made, 25 minutes calls received, 25 SMS messages and 25 MB would comply with the Regulation. In these cases no changes would have to be made during the transitional period. As of 15 June 2017, customers using these fixed periodic roaming tariffs must be transferred automatically to the regulated RLAH tariffs in accordance with Articles 6a, 6b, 6c and 6e (1). However, BEREC considers that fixed periodic roaming tariffs which are allowed during the transitional period, in accordance with last subparagraph of Article 6e (1), can be offered after the transitional period when the RLAH regime comes into force as alternative tariffs instead of the regulated tariff.

18. If the allowance of the fixed periodic roaming tariff is fully used up, the off-net domestic retail price plus any applicable surcharge would then apply (see Guideline 3).

Alternative tariffs

19. Alternative tariffs are tariffs that can be offered in addition to the regulated tariffs set forth in Article 6a, 6b and 6c and 6e (1).

20. According to Article 6e (3) of the Roaming Regulation, roaming providers can offer alternative tariffs in addition to the regulated roaming tariff both during the transitional period as set out in Article 6f (1) and beyond.

21. BEREC considers that Article 6e (3) gives any customer the option to benefit from a different tariff for regulated roaming services. If a roaming customer explicitly decides to opt for an alternative tariff, the roaming customer has to be informed (e.g. via SMS, via the monthly bill,...) about the nature of the roaming advantages which would thereby be lost.

22. According to Article 14 (3), subparagraph 2, Roaming providers must send a reminder at reasonable intervals thereafter to all customers who have opted for another tariff. BEREC considers that every 12 months would constitute a reasonable interval, or any other shorter period associated with an earlier contract renewal or revision.

Transfer between tariffs

23. BEREC considers that a switch from or to the regulated tariff (default tariff) is covered by Article 6e (3), subparagraph 3 and has to be made free of charge within one working day. This provision also applies in the transitional period.

Basic personalised pricing information: voice, SMS and data

24. Unless they have opted not to receive such information, all customers are entitled to receive an automatic message providing basic roaming information when the customer enters the visited country (Articles 14 and 15). The automatic message including basic roaming information should be personalized to that customer (Articles 14 and 15).

25. Even if the operator does not apply a surcharge, BEREC considers that the customers must receive a personalized automatic message. For data roaming, the information must be sent to the customer's mobile device, irrespective of type and form factors (legacy phone, smartphone, tablet or a laptop with a dongle). The means of sending the information can be for example via SMS, e-mail or a pop-up window when the customer enters a Member State other than that of his domestic provider. The information should be delivered 'by an appropriate means adapted to facilitate its receipt and easy comprehension' (Article 15 (2)) and BEREC considers it important that such information should be delivered 'in such a manner as to enable easy access to it at a later date' (Recital (85) of the Roaming III Regulation). The information must be provided in a way that does not require the customer to use a paid data roaming service in order to access it. This could be managed via SMS or a free-of-charge landing page or any other means (see Guideline 31).

26. The following basic information must be provided to roaming customers in the currency of the home bill:

- i. until 14 June 2017 the applicable roaming charges including the fact that the domestic charging mechanism applies plus the surcharge if any (including VAT);
- ii. as of the date of application of Article 6a, information on the fair use policy the roaming customer is subject to within the EEA and any surcharges which apply in excess of the fair use policy (only within the EEA);
- iii. as of the date of application of the fair use policy any surcharge which may be applied in excess of any limits under that fair use policy (including VAT);
- iv. a free phone number from which the customer can obtain more detailed personalised information on regulated and unregulated voice calls, SMS, or data roaming services (including MMS) and information on the transparency measures in the Roaming Regulation, by means of a voice call or an SMS;
- v. the possibility of accessing the emergency services by dialling 112 free of charge (only within the EEA).

It would be good practice to include the domestic charge which applies to the specific customer depending on the applicable tariff plan. BEREC notes that roaming providers will also continue to be required to provide certain basic information to customers roaming outside the EEA. BEREC considers it good practice that roaming providers inform customers if the receipt of voicemail messages outside the EEA incurs a charge.

27. Customers have the possibility to opt-out of receiving information on the charges for regulated roaming services as well as the right, at any time and free of charge, to require the roaming provider to provide the information again.

When should the basic information be provided?

28. Providers are required to send information on voice, SMS, the possibility of accessing emergency services by dialling the European emergency number 112 free of charge and the free phone number for detailed information to the customer '*without undue delay and free of charge*' when he connects for the first time, to a network other than that of their home provider when travelling abroad (Article 14).

29. This ensures that customers are informed of the roaming charges before they use those roaming services. New information is not required to be sent when the customer continues travelling to another country if the prices are the same. Full information on the applicable roaming charges for voice and SMS must be provided to all roaming customers by roaming providers when subscriptions are taken out. Roaming providers must also provide their roaming customers with updates on applicable roaming charges without undue delay each time there is a change in these charges in accordance with Article 14 (3). This means that the full information on applicable charges must be provided before a contract commences and each time a roaming provider makes changes to its roaming pricing, including when it is required by national law.

30. In addition, pursuant to Article 15 (2), information on data roaming, which includes MMS, should be delivered every time the roaming customer connects to a visited network and, for the first time, initiates a data roaming service in that visited country, i.e. when the customer continues travelling from one visited country to another, such tariff information is required to be sent to the customer again unless the prices are the same. BEREC understands that this provision requires only notifying the customer once when the customer enters another visited country.

31. For users of laptops with dongles or similar devices, connection to the visited network and initiation of the data roaming session are simultaneous. The domestic network is only able to tell that the user has connected to a visited network when the data roaming session is started. Therefore, the roaming provider should send one message to provide all of the required information. This could for instance be provided free of charge on a landing page (displaying price information) that opens when a data roaming session is initiated and before any data transfer takes place.

32. A connection to the visited network and initiation of a data roaming session are not necessarily simultaneous as customers may use voice and SMS services but connect to data roaming at a later stage, if at all. In all cases, customers have to be informed as soon as their handsets connect to a visited network and subsequently as soon as they initiate data roaming.

33. There is no requirement for further messages to be sent if, during a visit, the network the customer connects to changes but is in the same Member State.

34. BEREC considers that the information specified in Article 6e (4), subparagraph 1, should be provided in a contract, which includes any type of regulated retail roaming service, in a clear and understandable way taking into account obligations in national legislation regarding communications services contracts. BEREC considers that the above mentioned information should be personal and indicate clearly the pricing of the regulated retail roaming services which are applied to the customer and which the customer has subscribed to. It should also be published according to Article 6e (4) (b). Additionally, roaming providers should publish the information set out in Article 6e (1) about the maximum charges in excess of the fair use policy, which are also applicable during the transitional period *mutatis mutandis* (Article 6e (4)).

35. Where a customer contacts their home provider requesting further detailed information, the provider should ensure that the information on the prices of roaming voice calls and SMS (Article 14 (2)) for that customer is immediately available, regardless of the time of day. If using automated machines to comply with the obligation, the home provider should ensure that the customer can access the required personalised information speedily and easily.

36. Furthermore, if contacted via SMS, it would be reasonable for the roaming provider to send only essential personalised pricing information, applying to voice calls, SMS and data services (including MMS), to its customers where the details of charges are complex. In this case, the roaming provider should make reference in its SMS message to the free-of-charge number designated for voice calls to get additional information.

37. Customers should be able to monitor, control and give their consent to any expenditure. With regard to data roaming, Article 15 (1) requires providers to ensure that their roaming customers are kept adequately informed of data roaming charges both before and after the conclusion/agreement of a contract in ways that facilitate the customers' understanding of the financial consequences of their use and enable them to monitor and control their expenditure on regulated data roaming services. BEREC considers that every 12 months would constitute a reasonable interval, or any other shorter period associated with a contract renewal or revision. The Roaming Regulation also provides that, where appropriate, providers shall inform their customers before the conclusion/agreement of a contract, and on a regular basis thereafter, of the risk of automated and uncontrolled data roaming connections and downloads. They must also explain, free of charge and in a clear and easily understandable manner, how to switch off automatic data roaming to avoid uncontrolled consumption of data roaming services. Operators may meet these requirements by providing clear and easily accessible information in their terms and conditions for the service, on their website or in other literature.

Financial or volume limit on data roaming consumption

38. Article 15 (3) of the Regulation requires providers to make available to their customers one or more maximum financial or volume limits on data roaming use during an agreed specified period, subject to the customer's consent to continue ("cut-off mechanism"). This is intended to enable customers to avoid running up bills that are

higher than intended or expected. 'Customer' is not defined in the Regulation. BEREC considers providers may construe it to mean the contracting party or an individual SIM-holder (these may not be the same person in the case of corporate or family contracts, for example). Providers must make clear (e.g. in the contract, website...) who the cut-off limit applies to, i.e. the contracting party or individual SIM-holders.

39. According to Article 15 (6) of the Regulation, these safeguard mechanisms also apply to data roaming services used by roaming customers travelling outside the EEA.

40. Roaming providers must apply the default financial limit or default volume limit automatically to all customers who have not already chosen a specific limit. It is considered good practice that providers explain, on their website, in other literature or by other means, how the cut-off mechanism will work including how to consent to use in excess of the limit if wished, and what will happen to any data in the course of being downloaded if the customer does not wish to continue use when the limit is reached. BEREC considers it good practice that customers who have opted out of the cut-off limit are provided with information on their consumption on a regular basis to prevent them from bill shocks.

41. The default financial limit must be close to, but not exceed € 50 of outstanding charges per monthly billing period (excluding VAT). The default volume limit must have a corresponding financial limit not exceeding € 50 of outstanding charges per monthly billing period (excluding VAT). For the default financial limit, providers must make the customer aware of the corresponding amount in volume terms in advance. Note that the limit relates to the accumulated expenditure per specified period, and not per data session.

42. BEREC understands that 'monthly billing period' may refer to a calendar month or another specified monthly period in which the service gets billed.

43. This financial limit € of 50 excluding VAT of outstanding charges per monthly billing period should be calculated cumulatively by the roaming provider in the case the roaming customer travels several times within the same period and potentially in different countries, including countries outside the EEA.

44. BEREC understands that the European institutions intended that the financial or volume limit must be made available to both post-pay and pre-pay customers.

45. Some customers pay for data roaming services according to a tariff where data access is bought separately from other mobile services, paid for in advance and for a fixed, pre-defined non-recurring sum and non-recurring duration, after which the data session ends unless and until the customers give their express consent to resume data access. These customers are automatically protected from bill shock and there is no need to make special arrangements for them. This meets the policy intention behind the Article, because consumers are unable to spend more than they have consented to before starting the connection, thus giving them control. This exception does not apply to any data tariffs that are partly fixed and partly variable or that recur automatically in price and/or duration, for example a fixed sum for an initial period and/or volume and a variable rate thereafter, or a daily tariff that recurs until the customers withdraw their consent. As it is the objective of the regulation to protect the customer from bill shock, a cut-off limit should in principle be made available for all tariffs by default. However, when customers opt to remove a cut-off limit, they are given the right to be provided with a cut-off limit within one working day at their request (Article 15 (3) last paragraph), free of charge and without conditions or restrictions to other elements of the subscription.

46. In addition, providers may make available one or more other, higher or lower, financial or volume limits for other specified periods of use (i.e. not necessarily per month, for example a daily or weekly limit could be offered); again providing the customer is made aware in advance of the corresponding volume or financial amount, respectively.

47. BEREC notes that MMS are included in the definition of '*regulated data roaming service*' according to Article 2 (2) (m), and are not explicitly excluded from the scope of Article 15 (3), when provided as a metered service. Providers should ensure that consumers are informed about how any MMS expenditure is charged and controlled.

48. When a financial or volume limit is in operation, the Regulation requires providers to send the customer a warning when they have consumed 80% of that limit. The overall policy aim of the limit is to enable customers to monitor and control their expenditure. BEREC understands that the type of handset or other device, data service, and content can all affect the speed with which the notification can be sent, and with which it can be received and acted upon by the customer. BEREC considers that providers should set up the sending of notifications so that the customer has time to use the notification to make an informed decision about their expenditure before the final limit is reached. In cases where there is a variation from 80%, providers should seek as a matter of good practice to ensure that the customers receive the message before they reach 80% of their limit rather than after.

49. Although the Regulation does not prescribe how the warning has to be sent to the customer's handset or other device, it must be 'appropriate' for example by an SMS message, an e-mail or a pop-up window on the computer' (Article 15 (3)). BEREC considers that customers should be provided with the means that will maximise their chances of receiving and being able to act upon the notification if they wish to continue to use data beyond the limit bearing in mind the device and type of data service used.

50. BEREC expects that providers will wish to provide customer information on how to continue using data services when the 80% warning notification is sent, in order to give consumers more time to plan and control their use and expenditure. Providers

may also wish to indicate what would happen to any data in the course of being downloaded when the time limit is reached, if the customer does not wish to continue use beyond that point. If the customer decides to authorise data use beyond the financial or volume limit, in response to the 80% notification, the original limit will be superseded and it is no longer relevant to send a notification at the end of the original limit for the applicable specified billing period. BEREC considers that the consent of a customer is given only for the specified billing period.

51. Customers can require their provider to stop sending such notifications, and to start again, free of charge.

52. When the agreed financial or volume limit is reached, the provider is required to send another notification to the customer's mobile handset or other device. The notification must indicate how to continue using data services, if the customer wants to, and the cost of any additional data units consumed in the specified billing period. If the customer does not respond as indicated, the provider must immediately *'cease to provide and to charge the roaming customer for regulated data roaming services, unless and until the customer requests the continued or renewed provision of those services'* (Article 15 (3)) for the specified billing period.

53. Some providers have expressed concern that this provision requires them to de-authorise all data roaming services for the customer concerned. The customer would then be required to contact customer services to request re-authorisation of data roaming, which could take a short or a significant amount of time to process. All data in the process of being downloaded or uploaded when the limit was reached would be lost. BEREC considers that the policy intention is not for data roaming services to be de-authorised or for consumers to have to enter into a burdensome or lengthy process to resume data roaming use.

54. In all cases, charging should cease when the limit is reached, unless the customer has responded in due time that they do not wish the cut-off to be activated. Regarding the data connection, BEREC encourages providers, where possible, to maintain this for a reasonable period after the limit is reached, to give most customers adequate time to receive and respond to the notification, for example by suspending the connection or slowing speed down significantly. Depending on the type of device, data service and content, there may be a delay in the customer's reply, especially where the means of sending the notification does not interrupt the data session itself, for example where an SMS is sent to a mobile handset, as opposed to a pop-up window. If the customer indicates that he or she does not want to continue the data session or remains silent throughout the "reasonable period" for a response, BEREC encourages operators to facilitate any subsequent connection to the greatest extent possible, once the customer gives their consent to resume use. BEREC also expects that providers will make technically feasible efforts to preserve any data that was in the course of being downloaded for a reasonable period after the limit is reached, so as to allow the customer to resume the download.

55. Lastly, Recital 88 says that the above measures should be seen as 'minimum safeguards for roaming customers', and do not prevent providers from offering additional transparency and bill control measures like flat-rate offers or real-time information on data consumption, which BEREC also encourages.

Wholesale issues

Wholesale voice, SMS and data roaming charges

56. The maximum charges on wholesale voice and data apply to the average charges levied by any one network operator on any other. Charges may differ by time of day, and at different times of the year, but must be compliant when assessed on a one-year basis.

57. This maximum is an average charge to be calculated over the period of application of the maximum charge. This is usually a 12-month period, but may be a shorter period depending on the time remaining before a new maximum charge enters into force or the Regulation expires (Article 7 (2) and Article 12 (2)).

58. The necessary adjustments should therefore be made to existing wholesale voice, SMS and data charges to ensure that they do not exceed the maximum wholesale charges by the end of the relevant period. The result of such negotiations should provide assurance on both sides that the limits in the Regulation will be respected over the applicable compliance period.

59. Maintaining wholesale charges at their existing level throughout the year with the intention of making a reduction at a later stage of the same year to bring the annual average charge into line with the Regulation could have an adverse effect on the other operators and could prevent them from offering more competitive or innovative tariffs to consumers. BEREC therefore considers this to be an unacceptable commercial practice, notwithstanding that it is not explicitly prohibited by the Regulation.

Charging intervals

60. The Regulation provides maximum charging intervals for regulated wholesale and retail voice roaming calls and regulated wholesale and retail roaming data sessions.

61. Article 6e (1) subparagraph 3 may not be clear as to whether operators must apply the per-second and per-kilobyte charging interval for both the domestic price component and the roaming surcharge or only for the roaming surcharge. The intention of the Roaming Regulation is to have the same prices for roaming and domestic services. However, applying the regulated charging interval for the domestic price component of a roaming tariff may force operators to apply different charging intervals for roaming services and domestic services. BEREC therefore considers that operators should be allowed to apply the charging intervals laid down in Article 6e (1), third subparagraph, only to the roaming surcharges in order to achieve RLAH (or RLAH+) pricing. Nevertheless, operators could also apply the same charging intervals according to Art 6e (1) on the domestic prices component for the roaming service.

62. However, operators can decide to apply the charging intervals according to Article 6e (1). third subparagraph also on the domestic price component of the roaming service, even where no surcharge is applied.

Wholesale voice calls

63. Pursuant to Article 7 (3), operators must bill regulated wholesale voice calls on a per second basis, subject to a minimum initial charging interval of up to 30 seconds, where applicable.

SMS

64. SMS must be billed per message at the wholesale and retail levels. According to Article 11 and Recital 70, a roaming SMS message must have the same technical parameters as a domestic SMS. A message consists of up to 160 characters.

General issues**Charges for voicemail messages**

65. Article 6e (1) subparagraph 2 of the Roaming Regulation prohibits charges for voicemail messages that are deposited in the roaming customer's network mailbox by another caller.

66. The home operator is not prevented from levying 'other applicable voicemail charges', for example when the roaming customer listens to a message left in their network mailbox. The transfer of any voicemail messages that have been left in that customer's non-network mailbox to the roaming customer's network mailbox, for example if the customer uses personal numbering, should be considered as a different service to the one described in Article 6e (1), subparagraph 2.

Charges in currencies other than the Euro

67. The relevant exchange rates for regulated wholesale charges in currencies other than the Euro for a year (i.e. 1 July to 30 June) is the one published by the European Central Bank in the Official Journal of the European Union (OJEU) on 1 May preceding that year. In case there is no publication on this date, the first exchange rate after 1 May should be used. Those charges must be revised annually as from 1 July applying the exchange rate published on 1 May of the same year (Article 1 (6) Roaming Regulation). The relevant exchange rates for the caps set out in Articles 6e (1) (a), (b) and (c) are as follows.

68. The caps set out in Article 6e (1) (a) Roaming Regulation incorporate the wholesale caps set out in Articles 7 (2), 9 (1) and 12 (1) Roaming Regulation. In calculating the relevant exchange rates for these caps, operators should use the method as is set out in Article 1 (6) Roaming Regulation as there were no changes due to the TSM Regulation. Therefore, from 30 April 2016 to 30 June 2016, operators should use the exchange rate published by the European Central Bank in the OJEU on 1 May 2015. From 1 July 2016 until 30 June 2017, the caps set out in Article 6e (1) (a) Roaming Regulation should be converted using the exchange rate published by the European Central Bank in the OJEU on 1 May 2016.

69. When determining the cap set out in Article 6e (1) (b) Roaming Regulation in currencies other than the Euro, the methodology used for converting retail charges described in Article 1 (7) Roaming Regulation should apply as the limit is related to retail price regulation, i.e. an average of the exchange rates of the same year published on 1 March, 1 April and 1 May by the European Central Bank in the OJEU should be used including the transitional period.

70. The surcharge cap in Article 6e (1) (c) Roaming Regulation is the weighted average of maximum mobile termination rates across the EU ('average MTR'). The exchange rates set out in Article 1 (6) Roaming Regulation should apply as well (see Guideline 68.).

71. The maximum retail surcharges in the transitional period set out in Article 6e (1) and the wholesale average charges for voice, SMS and data may be calculated to the maximum number of decimal places permitted by the official exchange rate. This sets the maximum that can be charged in the national currency. Providers may wish in practice to quote charges in whole numbers of currency units, especially at the retail level, although this practice is not compulsory. In this instance, the numbers should be rounded down. Rounding up of these numbers to above the level of the relevant cap is not permitted under any circumstances. VAT could be included based on the maximum number of decimals before rounding down the total charge (including VAT).

72. When determining the financial or volume limit on data roaming use (Article 15(3)) in currencies other than the Euro, the methodology used for converting retail charges described in Article 1 (7) should apply as the limit is related to retail price regulation, i.e. an average of the exchange rates published on 1 March, 1 April and 1 May should be used.

Scope of regulated roaming call

73. For the purposes of Articles 6e, 7 and 14 of the Regulation, a "regulated roaming call" comprises only voice calls and does not include data calls (e.g. using VoIP over a mobile Internet connection), which would be considered to be data usage).

Scope of regulated data roaming services

74. A "regulated data roaming service" in turn does not include voice calls or SMS messages, but does include transmission and receipt of MMS messages (Article 2 (2) (m)).

75. The transmission and receipt of all different types of data services should be included in "regulated data roaming services" when they are provided to a roaming customer on a visited network.

76. For video calls charged by the roaming provider per minute or included in bundles, it is permitted to charge the domestic tariff per minute and in cases where a surcharge is applied, calculate the surcharge according to the MB/minutes consumed for

the video calls. Respectively, when receiving a video call free of charge, only a surcharge can be charged in instances of roaming based on the MBs/minutes consumed for the video call received. The limits laid down in Article 6e (1) also apply in this case.

77. This definition is technology-neutral as it applies irrespective of the technology used (3G, 4G,...). Nevertheless, regulated data roaming services should not include services provided through a WiFi connection, as a WiFi network is not a *mobile* network. According to the above definition, the Regulation applies when a roaming customer is connected to a visited “*terrestrial public mobile communications network*”. Recitals 84 and 98 also make a distinction between roaming services and WiFi, as the latter might be “*a substitute for, or alternative to, roaming services*” (Recital 84).

Inadvertent roaming

78. Inadvertent roaming is when the signal from a mobile device is picked up by a different network without action by the subscriber. MNOs should take steps to reduce consumer harm of higher bills associated with inadvertent roaming. These steps can include cross border co-ordination on power levels, emission masks and receiver sensitivity. Recognising that radio signals do not respect land borders, and in the event that technical measures alone cannot mitigate the effects of inadvertent roaming particularly in border areas, then MNOs can also consider implementing special tariffs, or Operator Determined Barring Mechanisms, for those subscribers living close to border areas and/or SMS notification, or consent being given perhaps via device menu selection, before allowing roaming for those subscribers affected. In any case, mobile operators should inform their customers about the measures for preventing inadvertent roaming (e.g. the manual selection of the operator when using the device near the border).

Value-added services (Premium rate services)

79. BEREC considers that a value-added service is a premium rate service (PRS) where the charge for the voice call, or SMS, or data transmission is bundled with the price of a specific service being purchased, e.g. a ring tone, and that bundled price is fully billed by, and paid to, the roaming customer's roaming provider.

80. According to Recital 43 of the third Roaming Regulation, it does not apply to the whole tariff that is charged for the provision of PRS but only to the tariff component corresponding to the connection to such services. This would allow for applying the charges set out in Articles 6a, 6b, 6c or Article 6e (1) of the Roaming Regulation for voice calls, SMS and data services that are solely limited to the connection to PRS and not the service of the content provider itself. If they offer PRS services, operators should ensure that consumers are informed about how any PRS expenditure is tariffed, charged and controlled.

Tariffs without roaming services

81. BEREC considers that the Roaming Regulation does not oblige operators to offer roaming services in their tariff plans. If any domestic offer is paired with alternative roaming offers, this should comply with Guidelines 19 to 22.

Roaming calls made to/from ships or planes

82. The Roaming Regulation does not apply to calls made to/from ships or planes using satellite networks. The definition of a visited network in Article 2(2) (e) explicitly refers to a terrestrial public communications network situated in a Member State. BEREC understands that this definition also includes terrestrial public communications networks outside the EEA since the transparency measures set out in the Roaming Regulation also apply when customers use visited networks outside the EEA. The visited network is always the network being used when a customer is roaming outside his home network. As soon as the mobile device of a roaming customer connects to a network other than a visited network referred to in the Regulation, e.g. a satellite network, roaming services offered by such a network are not covered by the provisions of the Regulation as it is not a terrestrial network and would thus require the use of a different device. This also applies to calls made to/from ships or planes using GSM/UMTS pico-cells as access technology combined with a satellite backhaul in order to provide services to passengers and crew. However, according to the EC Recommendation of 19 March 2010 on the authorisation of systems for mobile communication services on board vessels (MCV services), Member States should take any appropriate measures in order to ensure that consumers and other end-users are adequately informed about the terms and conditions for the use of MCV services. In the case of aircrafts, the Commission Decision of 7 April 2008 on harmonised conditions of spectrum use for the operation of mobile communication services on aircraft (MCA services) considers that the authorisation terms and conditions for MCA services are also outside the scope of this Decision and that the coordination of national authorisation conditions for MCA services is addressed by Commission Recommendation 2008/295/EC pursuant to Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive). In these cases, BEREC considers it good practice that, according to the relevant transparency measures in the Roaming Regulation, customers are informed by the roaming providers about any additional charges for such connections and provided with the bill-shock provisions when using mobile devices, particularly in cases where customers automatically connect to a mobile network when being on a ship or plane.

Machine-to-machine communications

83. The Roaming Regulation makes reference to customers that travel periodically. However, it is common for devices for M2M communications to be used on a permanent roaming basis. To that end, it may make sense to assess M2M communications on a case-by-case basis taking account of standard scenarios. Reference is

made to the BEREC Report on “Enabling the Internet of Things” (BoR (16)/39) for a more detailed analysis.

84. Pursuant to Article 15 (4) the transparency provisions do not apply to machine-to-machine (M2M) devices that use mobile data communication.

Geographical scope of the Roaming Regulation

85. The Roaming Regulation applies to communication made and received within the EU including the outermost regions referred to in Article 349 of the Treaty on the Functioning of the European Union. Market players are strongly advised to consult the EU Treaty in this regard. Some transparency measures, including the cut-off limit, apply to roaming services within the EU as well as to roaming services outside the EU.

86. The scope of the Roaming Regulation (No. 531/2012) also applies to the EEA Member States Norway, Iceland and Liechtenstein. As soon as the amended obligations in Regulation (EU) No. 2015/2120 are incorporated in the EEA agreement, they will apply to these three countries also.