

INTERNATIONAL ROAMING REGULATION

BEREC GUIDELINES ON ROAMING REGULATION (EC) NO 531/2012 (THIRD ROAMING REGULATION)

**(Excluding articles 3, 4 and 5 on wholesale access and separate
sale of services)**

March 2013

Executive Summary

1. The BEREC Guidelines on the third Roaming Regulation present an update of the former ERG Guidelines on the second Roaming Regulation. This was considered necessary as the new Roaming Regulation incorporates some changes. However, the most significant changes such as the wholesale access obligation and separate sale of roaming services are dealt with in two separate BEREC guidelines (BEREC Guidelines on Article 3 and BEREC Guidelines on Article 4 & 5).
2. The BEREC Guidelines on the new Roaming Regulation are designed to explain the Regulation and are complementary to the provisions set out in there. As such, the guidelines are not presented as an official legal interpretation of those provisions.
3. The changes in the update of the former ERG Guidelines were mainly editorial and to clarify wording for most of the guidelines. Substantive changes were only made to take account of retail data caps as well as the application of the transparency measures outside the EU EEA area. Both provisions were only just introduced in the third Roaming Regulation.
4. The guidelines now also include some provisions for inadvertent roaming, addressing customer protection measures that operators can consider in such cases. Finally BEREC also recommends to apply the bill-shock provisions for communication services on ships and planes when handsets automatically connect to a mobile network as well as to inform customers about any additional charges that may occur. These measures would not apply if customers need a specific handset that connects to a satellite network.
5. As set out above, the other parts of the guidelines mainly remained unchanged or were just clarified in wording. On retail issues the guidelines make clear that the Regulation still provides for the possibility of transferring between the Euro-tariffs and alternative tariffs as well as for bundling of regulated retail roaming tariffs with other retail tariffs, i.e. any Euro-tariff may be combined with another retail tariff. Moreover the main provisions to protect customers from running up high bills are mainly left unchanged. According to the 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. As mentioned above, a slight modification was included in the guidelines to take account of alternative tariffs that do not include a cut-off limit but an obligation to provide it upon request of the customer. This meets the spirit of the Regulation aiming at protecting customers from bill shocks.
6. 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 wholesale caps set out in the Regulation. BEREC makes reference to certain strategies aiming at preventing market entry by competing operators, and deems them not to be an acceptable commercial practice.
7. Furthermore the guidelines clarify any uncertainties that may arise for computing maximum charging intervals with regard to retail voice calls 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, scope of regulated roaming call, scope of regulated data roaming, inadvertent roaming, value added services, machine-to-machine communication (M2M) and geographical scope of the Regulation.

9. Regarding charges for voicemail messages the guidelines stresses that those are prohibited pursuant to the Regulation. In order to prevent the application of different algorithms for charging in countries where charges need to be converted in Euro, the guidelines clarify that the relevant exchange rates were the first published on 1 May of the relevant year in the Official Journal of the European Union (OJEU) or the ones first published after 1 May.

10. The scope of regulated roaming calls and regulated data roaming services are set out to clearly define these services. Roaming calls comprise voice calls only and as such do not include data calls via mobile internet connection. Data roaming services in turn do not include voice calls and SMS, but, according to the Regulation, do include MMS messages. The guidelines point out that the definition is applicable irrespective of the spectrum used and is therefore technology-neutral.

11. As outlined above, a new paragraph was included to take account of inadvertent roaming close to bordering countries, which was not covered in the previous guidelines. The BEREC guidelines set out some measures that can be undertaken by operators to reduce the chance of inadvertent roaming and to protect customers from unexpectedly high bills.

12. Value-added-services account for the wholesale caps only for the tariff component corresponding to the connection to such services and not the service of the content provider itself. Providers should ensure that consumers are informed about how any value-added service expenditure is tariffed, charged and controlled.

13. Roaming communication on ships of planes is not in the scope of the Regulation. As outlined above, the BEREC guidelines now recommends and consider a good practice that operators apply bill-shock measures and provide information on additional charges that may occur in cases that mobile handsets automatically connect to mobile networks on ships.

14. The ERG Guidelines on the cut-off limit notification for M2M is not included in the updated set of guidelines, as in the new Roaming Regulation, cut-off limit and transparency provisions does not apply to such services.

15. The geographical scope of the Regulation was amended to take account of the EEA members Norway, Liechtenstein and Iceland applying the new Roaming Regulation as of December 2012.

Introduction

1. These BEREC Guidelines are designed to explain Regulation (EC) No 531/2012 of the European Parliament and the Council of June 13 2012 (the third Roaming Regulation) replacing Regulation (EC) No 544/2009 on roaming on public telephone networks within the Community (the second Roaming Regulation). For countries where Regulation EC No 531/2012 has entered into force, these Guidelines replace the ERG Guidelines published in 2009 dealing with the second Roaming Regulation.
2. As before, these Guidelines are complementary to the provisions set out in the Regulation, and are not presented as an official legal interpretation of those provisions.
3. These Guidelines are complementary to the BEREC Guidelines on the Application of Article 3 of Regulation EC No 513/2012 and the forthcoming BEREC Guidelines on the Application of Article 4 and 5 of Regulation (EC) No 531/2012.
4. BEREC notes that both the retail and wholesale provisions of the Regulation apply to all mobile operators that offer retail roaming services.

Retail issues

Transfers between tariffs

5. Article 8(5), Article 10(6) and Article 13(5) grant the right to all customers - including those subscribing to alternative roaming providers - to request to switch to or from the Euro-voice tariff, to or from the Euro-SMS tariff, or to or from the Euro-data tariff, respectively. The switch must be made within 1 working day of the request and free of charge without changing the conditions of other elements in the domestic subscription. In case a customer has previously subscribed to a special roaming package which includes more than one regulated roaming service, the roaming provider may require the switching customer to forego the benefits of other elements of that package. The service provider is permitted to enforce a minimum specified period of use for the customer's previous roaming tariff before granting such a request, provided that it does not exceed 2 months.

Bundling of regulated retail roaming tariffs and other retail tariffs

6. Article 8(1), Article 10(1) and Article 13(1) provide that a Euro-voice tariff, Euro-SMS tariff and Euro-data tariff, respectively, may be 'combined with any retail tariff'. Therefore retail tariffs for services other than regulated voice roaming calls, regulated roaming SMS or regulated roaming data services (e.g. tariffs for domestic and international voice calls, for domestic and international SMS and for mobile data services) must not be offered on the basis that they cannot be combined with the Euro-voice tariff, the Euro-SMS tariff or the Euro-data tariff.

7. In addition to the separate sale of roaming services pursuant to Article 4, it is not the intention of the Regulation to prohibit the sale of special roaming tariffs by the roaming provider that may be advantageous to certain customers. The continuation of such tariffs offered by the roaming provider is explicitly provided for in Article 8(3) for voice, Article 10(4) for SMS and Article 13(3) for data.

Basic personalised pricing information: voice, SMS and data

8. Unless they have opted not to receive such information, all customers including those that have chosen an alternative roaming provider are entitled to receive at least one automatic message providing basic roaming information for the visited country, which is personal to that customer (Articles 14 and 15).

9. For data roaming, the information must be sent to the customer's mobile phone or other device, for example if they use a 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 or any other means. BEREC considers it important that the information should be delivered 'by an appropriate means adapted to facilitate its receipt and easy comprehension' (Article 15(2) and 'in such a manner as to enable easy access to it at a later date' (Recital (85)). BEREC considers it good practice to provide the information 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.

10. The following basic information must be provided to roaming customers:

- a) the maximum charges while in the visited country for regulated roaming voice calls made back to the subscriber's home country and within the visited country, as well as for regulated voice calls received, for sending regulated roaming SMS, for using regulated data roaming services (including metered MMS) and for sending non-metered MMS services. This also applies for services used by customers travelling outside the EU. Providers must also send information on maximum charges for MMS received (when provided as a non-metered service) that the customer will pay under his or her tariff scheme;
- b) the possibility of accessing the emergency services by dialling 112 free of charge (only within the EU); and
- c) 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 Regulation, by means of a voice call or an SMS.

11. Customers have the possibility to opt-out of receiving information on the maximum charges for regulated roaming services.

12. In addition, BEREC considers that it would be good practice to, where necessary, distinguish between charges that differ according to the host network used in the visited country if applicable.

When should the basic information be provided?

13. Providers are required to send information on voice, SMS, 112 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 his home provider when travelling abroad (Article 14). This ensures that customers get knowledge of 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 maximum prices are the same.

14. 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. BEREC understands that this provision requires only one message to be sent when both conditions of Article 15(2) are met (entry into another visited country plus initiation of a data roaming service).

15. 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 may send one message to provide all of the required information. This could for instance be provided free of charge on a landing page that opens when a data roaming session is initiated before any data transfer takes place.

16. For traditional mobile handsets 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 any case customers have to be informed as soon as their handsets connect to a visited network. Roaming providers may consider it necessary to send a second message when customers initiate data roaming sessions at a later time.

17. There is no requirement for further messages to be sent if the visited network changes during a visit to a country.

Additional detailed personalised pricing information and information on transparency measures

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

19. Furthermore, if contacted via SMS, it would be reasonable for the roaming provider to opt to send only essential personalised pricing information applying to voice calls, SMS and data services (including MMS) to its customers where the detail of charges is 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.

20. 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 of a contract in ways that facilitate the customer's understanding of the financial consequences of their use and enable

them to monitor and control their expenditure on regulated data roaming services. BEREC considers it good practice that customers who have opted out of the cut-off limit be provided with information on their consumption on a regular basis to prevent them from bill shocks. The Regulation also provides that, where appropriate, providers shall inform their customers before conclusion of a contract and on a regular basis thereafter, of the risk of automated and uncontrolled data roaming connection and download. They must also explain 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 the terms and conditions for the service, on their website or in other literature.

Financial or volume limit on data roaming consumption

21. 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 who the cut-off limit applies to, i.e. the contracting party or individual SIM-holders.

22. According to Article 15(6) of the Regulation, these safeguard mechanisms also apply to data roaming services used by roaming customers travelling outside the EU except when the visited network operator in the visited country outside the EU does not allow the roaming provider to monitor its customer usage on a real-time basis. In this case customers should be made aware explicitly by a message free of charge and without undue delay that they are not protected by these safeguard mechanisms.

23. 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 as good practice that providers explain, on their website or in other literature or by other means, how the cut-off mechanism will work including how to re-authorize use past 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.

24. 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 in advance of the corresponding amount in volume terms. For the default volume limit, providers must make the customer aware in advance of the corresponding amount in financial terms. Note that the limit relates to the accumulated expenditure per specified period, and not per data session.

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

26. 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 that the roaming customer travels several times within the same period and potentially in different countries, including countries outside the EU.

27. 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.

28. 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 customer gives 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 part fixed and part variable or that recur automatically in price and/or duration, for example a fixed sum for initial period and/or volume and a variable rate thereafter, or a daily tariff that recurs until the customer withdraws their consent. As it is the objective of the regulation to protect the customer from bill shocks, a cut-off limit should in principle be made available for all tariffs by default. However when a customer opts for an offer without a cut-off limit, customers are given the right to be provided with a cut-off limit within one working day at their demand (Article 15(3) last paragraph), free of charge and without conditions or restrictions to other elements of the subscription.

29. 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.

30. 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.

31. 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. Where there is variation from 80%, providers should seek as a matter of good practice to ensure that the customer receives the message before they reach 80% of their limit rather than after.

32. 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 the customer should be provided with the means that will maximise his/her chances of receiving and being able to act upon the notification bearing in mind the device and type of data service used.

33. BEREC expects 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 authorize data use after 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 where a customer did not opt out of the financial or volume limit in his subscription.

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

35. 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.

36. 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.

37. In all cases charging should cease when the limit is reached, unless the customer has responded in due time that he does 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.

38. 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 and data roaming caps

39. The caps on wholesale voice and data charges 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 and must be compliant when assessed on a one-year basis.

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

41. The necessary adjustments should therefore be made to existing wholesale voice, SMS and data rates to ensure that the average price cap is met by the end of the relevant period. Network operators should enter into early bilateral negotiations in good faith with a view to adjusting the contractual pricing provisions as soon as possible. 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.

42. 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.

Maximum charging intervals

43. The Regulation provides for a maximum charging interval for regulated wholesale and retail voice roaming calls and wholesale data sessions.

Retail voice calls

44. Regulated roaming retail voice calls made and received must be charged on a per second basis. An exception is provided for calls made pursuant to Article 8(2), which allows operators to extend the initial charging period up to a maximum of 30 seconds. This is intended to enable providers to recover any reasonable set-up charges and to compete by offering shorter initial charging periods. The initial charging period of maximum 30 seconds does not apply to calls received, i.e. they must be charged per second only. That is because any set-up costs are considered to be covered by mobile termination rates.

45. The Regulation does not prescribe a minimum or maximum charging interval for other roaming retail voice calls made or received.

Wholesale voice calls

46. Pursuant to Article 7(3) operators must also 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

47. 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 is up to 160 characters.

Data

48. The Regulation provides that the consumed wholesale data roaming services during the relevant period must be aggregated on a per kilobyte basis (Article 12(3)). Providers may round up the volume of a given session to the nearest kilobyte. A sum of data during the relevant period of less than one kilobyte may be charged as a single one kilobyte session.

49. For clarity, BEREC considers that:

1 megabyte = 1024 kilobyte.

50. Retail data roaming services that account for the Euro-data tariff must be charged on a per kilobyte basis, except for MMS which may also be charged on a per unit basis (Article 13(2)). MMS shall be billed per session. The maximum price per MMS, when charged on a per unit basis, shall not exceed the price for one MB (Article 13(2)).

General issues

Charges for voicemail messages

51. Article 8(2) prohibits charges for voicemail messages that are deposited in the roaming customer's network mailbox by another caller.

52. 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 to the roaming customer's network mailbox of any voicemail messages that have been left in that customer's non-network mailbox, for example if the customer uses personal numbering, should be considered as a different service to the one described in Article 8(2).

Charges in currencies other than the Euro

53. The relevant exchange rates for regulated wholesale charges in currencies other than the Euro for the first 12 months is the one published by the European Central Bank in the Official Journal of the European Union (OJEU) on 1 May 2012. For following years, the relevant exchange rate for all regulated wholesale roaming charges is the one published in the OJEU on 1 May of the relevant calendar 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 2015 applying the exchange rate published on May 1 of the same year.

54. The relevant exchange rates for regulated retail charges of the Euro-voice, Euro-SMS and Euro-data services in currencies other than the Euro for the first 12 months is the average of the exchange rates published on 1 March, 1 April and 1 May by the European Central Bank in the OJEU. The revised values for the following years are calculated using the exchange rates published on 1 March, 1 April and 1 May of the relevant calendar year. In case there is no publication on these dates, the first exchange rate after 1 March, 1 April and 1 May should be used. Those charges are to be revised annually as from 2015 applying the exchange rates published on 1 March, 1 April and 1 May of the same year.

55. The maximum retail caps for the Euro-voice tariff and the Euro-SMS and the wholesale average caps 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 in practice is not compulsory. In this case, 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. The same applies when including the VAT.

56. 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

57. For the purposes of Articles 7, 8 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).

Scope of regulated data roaming services

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

59. Applications like "*email, pictures or web-browsing*" should be considered as data roaming applications. Therefore, the transmission and receipt of such data should be covered as "regulated data roaming services" when they are provided to a roaming customer on a visited network. BEREC also considers VoIP calls over a mobile network a regulated data roaming service.

60. This definition is technology-neutral as it applies irrespective of the radio spectrum 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". Recital 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

61. 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, 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.

Value-added services

62. 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.

63. According to Recital 43 the Regulation does not apply to the whole tariff that is charged for the provision of value-added services but only to the tariff component corresponding to the connection to such services. This would allow for applying the maximum charges set out in Articles 7, 8, 9, 10, 12 and 13 of the Regulation for voice calls, SMS and data services that are solely limited to the connection to value-added services and not the service of the content provider itself. Providers should ensure that consumers are informed about how any value-added service expenditure is tariffed, charged and controlled.

Roaming calls made to/from ships or planes

64. The 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 EU since the transparency measures set out in the Regulation also apply when customers use visited networks outside the EU. 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 such a network would require the use of a special device.

65. This also applies to calls made to/from ships using GSM 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 this case, BEREC considers it good practice that according to the relevant transparency measures in the 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 when customers automatically connect to a mobile network when being on a ship or plane.

Machine to machine communications

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

Geographical scope of the Regulation

67. The 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. The transparency measures including the cut-off limit apply to roaming services within the EU as well to roaming services outside the EU.

68. The scope of the Roaming Regulation also applies to the European Economic Area (EEA) Member States Norway, Iceland and Liechtenstein as from 7 December (Norway and Liechtenstein) and 21 December (Iceland) 2012.