



Europe

GSMA Europe Response to CEPT Public Consultation on Numbering and Addressing in M2M Communications

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About GSMA Europe

The GSMA represents the interests of the worldwide mobile communications industry. Spanning 219 countries, the GSMA unites nearly 800 of the world's mobile operators, as well as more than 200 companies in the broader mobile ecosystem, including handset makers, software companies, equipment providers, internet companies, and media and entertainment organisations. The GSMA is focused on innovating, incubating and creating new opportunities for its membership, all with the end goal of driving the growth of the mobile communications industry. In the European Union the GSMA represents over 100 operators providing more than 600 million subscriber connections across the region. For more information on GSMA, please visit: Mobile World Live, the new online portal for the mobile communications industry, at www.mobileworldlive.com, GSMA corporate website at www.gsmworld.com, and GSMA Europe at www.gsmeurope.org.

Introduction

GSMA Europe takes this opportunity to respond to the CEPT consultation on “Numbering and Addressing in Machine-to-Machine (M2M) Communications”. We welcome the attention given by the CEPT working group to numbering aspects of M2M communications and believe that the consultation raises important issues which would benefit from further debate and analysis. Such further debate and analysis can contribute to improving the usefulness of the report as a tool for outlining future policies for M2M numbering.

Our comments below should not be considered as a comprehensive review of the full CEPT report. Rather, we aim to highlight some of the aspects of the report where we believe further reflection is definitely required.

Comments

1. GSMA Europe welcomes the initiative from the CEPT working group to reflect on numbering and addressing for M2M applications. Taking the current status of the M2M market and technological developments into account, we welcome the fact that the report puts forward a number of options for the numbering of these services. GSMA Europe is of the view that flexibility and choice are important to allow operators and service providers to make the choices that best fit the requirements of the M2M services provided. In this respect, there is also an urgency to find a harmonised regulatory framework within the European Union, as more Member States are implementing measures for M2M services to be provided, and diverging solutions will impede the scale and scope of the potential uptake of M2M services in Europe.
2. Regarding the domain of application of the report, we are not aware of any commonly agreed definitions of M2M services. In line with the recommendation, we agree that services characterised by the exchange of mainly data communications generated in a fully or partially automated way, and between entities of a predefined group, can typically be considered as candidate M2M services. In addition, the absence of the need for access from arbitrary outside parties (and often the desire to block such access) is typical for most M2M applications. Smart metering, point of sales (payment terminals), asset tracking or automated tolling systems are typical examples where M2M service concepts can be applied. We are in favour of a flexible approach to the definition of M2M services as the border line between M2M and person-to-machine or even limited person-to-person communication can be narrow (e.g. can automatically generated emergency calls (eCall) be considered as an M2M service?).
3. GSMA Europe agrees with the view expressed in the recommendation that mobile networks, in particular GSM and UMTS networks (as well as LTE networks in the future), are well placed to address the need of many M2M communications requirements. This applies clearly for narrowband data communications needs but also, in an increasing way, for broadband data services.
4. GSMA Europe understands the difficulties of assessing the numbering capacity required for M2M services. Even if there are M2M services outside the areas explicitly referred to in

the report (e.g. the potential of M2M to provide e-Health services, or the mobile applications referred to in Accenture's Carbon Connections report¹), we consider the estimates arrived at in the recommendation adequate for the intended purpose².

5. GSMA Europe believes that the section "introduction to M2M numbering" insufficiently covers the increasingly IP-based nature of mobile communications. The use of IP addresses is inherent to the use of GPRS and UMTS networks for data communications, and this applies also in the context of many M2M services.

GSMA Europe also observes that in telecoms architectures, IP addressing and numbering cannot be compared on the same footing. Consequently it might prove difficult to use IP addressing as an alternative to public numbers for some services.

Regarding the use of IPv6 addresses, GSMA Europe members note that today's commercial mobile services are only marginally based on IPv6. However, IPv6 addresses will form the basis of large-scale deployments in the near future. Given this context, it is difficult at this stage to predict whether M2M services and applications based on such networks can fully operate without using, directly or indirectly, phone numbers.

Even though we can expect IPv6 addressing to become a valid alternative for certain applications in the long run, numbering options will continue to be required and used for other applications.

Regarding identification, the current release of the standards (3GPP TS 23.003) applicable to these networks states that: (1) each mobile subscriber in the system shall be allocated a unique International Mobile Subscriber Identity (IMSI), and (2) the assignment of one or more numbers from the ISDN (E.164) numbering plan for the purposes of (i) allowing a subscriber of a fixed/mobile network to call a mobile station of a PLMN, (ii) allowing packet data communication between a mobile station and a fixed/mobile station, and (iii) allowing mobile station roaming. The introduction of LTE will require changes to be made with regards to (2) whilst (1) can remain unchanged. Changes to (2) are still in the process of being discussed and agreed and hence the use of IMSI would appear to be a sensible and stable way forward. We finally observe that, once standards development work is achieved and implemented, rolling-out new architectures with radical changes such as "all-IP" LTE/EPC based networks generally reveals constraints at a very late stage in the process, which makes predictions with respect to item (2) somewhat difficult to assert at this point.

6. When addressing proposals for M2M numbering in the short to medium term, GSMA Europe agrees that E.164 based numbering resources are still well suited to fulfil the needs of many M2M communications applications. This good match exists mainly because existing standards and technologies implied certain numbering related choices in the implementation of provisioning, billing and operational support systems. The other characteristics of some of the E.164 sub-ranges (e.g. to be reachable from any device on

¹ See http://www.GSMA-Europe.com/etc/medialib/cr_09/carbon.Par.76396.File.dat/carbon_web_2009.pdf

² We suggest stressing the illustrative, non-exhaustive nature of the applications listed in Annex 2.

any other network, integration in public national numbering plans with associated pricing transparency rules and regulatory requirements, number portability, possibility to call emergency services, CLI-rules to a lower extent) are however neither required nor relevant for the large majority of M2M services. For instance, for an electricity smart meter, an asset tracking tool, or even for an eCall unit in a car, many of the above requirements associated with the use of E.164 number ranges are inappropriate and the need to comply with these requirements would induce unnecessary incremental implementation costs. If the use of technologically efficient numbering solutions (such as E.164) would imply the need to comply with a number of inadequate regulatory requirements for the M2M application under consideration, operators would be driven to suboptimal choices and inefficient use of resources, and the full potential of the M2M market would not be realised. Regulators should provide numbering solutions that meet technological implementation aspects while avoiding the imposition of inappropriate regulatory requirements that are driven by numbering range choices in an automatic way. Regulatory requirements should be linked to the nature of the service offered independently of the chosen numbering range (and access network). GSMA Europe is concerned that Table 4 on page 16 of the report might lead to erroneous conclusions about the need for mandatory compliance with the requirements listed as “valid” whenever network external numbers are used. We consider that some of these requirements may be valid, depending on the service offered (e.g. there is no need to consider CLI - CLIP or CLIR - requirements or number portability requirements for the large majority of M2M devices and services, even if network external numbers are used).

7. The report states that EU-wide harmonisation is not required. In relation to numbering and addressing issues, which are the main focus of the report, GSMA Europe acknowledges that full harmonisation of national numbering plans is not a realistic option. The variety of national numbering plans would make this an immensely difficult task with potentially little benefit. On the other hand, GSMA Europe strongly supports initiatives that contribute to a more common, harmonised regulatory framework applicable to services delivered by M2M applications. A lack of harmonisation in this respect hinders the possibility of re-using mobile solutions across markets and the development of a single European market. It also implies higher implementation costs (as the scale and scope of common solutions is reduced³) and would lead to the sub-optimal realisation of the potential of M2M usage across Europe.

8. As the recommendation suggests, we agree that regulators should consider the introduction of additional numbering resources for M2M applications in order to allow for preparation for using these alternative resources. When introducing new ranges, the regulatory requirements associated with these number ranges should be flexible to support innovation and be driven by the characteristics of the underlying services. When introducing new numbering ranges, the financial aspects of most M2M applications- typically low revenues per number and high volumes of numbers per application- should be taken into

³ As the supply chain for M2M solutions typically starts with OEM components, harmonised requirements will facilitate cheaper and simpler solutions for the subsequent international distribution of the devices that integrate these components.

account. Administrative charges and/or taxes associated with such numbers should be kept very low and harmonised in order to avoid market distortion and jeopardising M2M business cases.⁴

The implementation of bespoke numbering ranges should not be accompanied by a migration of existing M2M number ranges as it would be uneconomic and practically impossible (see further). On the contrary, the existing M2M number ranges should remain available for M2M applications. New resources dedicated to M2M are needed to prepare for and facilitate a long term evolution.

9. While the report recommends the use of network internal numbers, we doubt whether this is the optimal solution in the longer term. The need to support international roaming is often present for applications requiring mobility but the use of network internal numbers would hinder such possibilities. For those services where network internal numbering can fulfil the service requirements, it should not however be excluded.

10. Concerning the migration of existing M2M numbers to new number ranges the report already indicates that “possible renumbering of existing devices may have commercial barriers”. Making changes to numbering schemes already deployed for M2M services would require a case by case, application by application impact assessment. In all scenarios, there would be a major impact on the services provided. Such changes should therefore only be considered as a means of last resort. Parties deploying M2M solutions should have sufficient guarantees regarding a long life period of the underlying numbering resources. Without such guarantees service providers will be reluctant to deploy new services.

11. While we acknowledge that number portability can contribute to stimulating competition for a number of telecommunications services, this is not the case for the large majority of M2M services where the imposition of such a requirement would imply an uneconomic and impractical burden⁵. In this respect we also observe that for the large majority of M2M services renumbering endpoints is not an issue, and contrary to “conversational services”, M2M numbers are essentially used as addresses rather than dialled by users. As a result, the legitimate convenience mobile subscribers may find in keeping numbers when switching providers has no relevance for M2M services. We therefore consider that such a requirement be removed for M2M services. Finally, although some might link number portability with the use of network internal numbers, the absence of a need for number portability does not change when not using network internal numbers.

Conclusion

In summary, we welcome the report as it highlights the need for further reflection on numbering for M2M applications. Taking future numbering needs and current technological

⁴ Given the nature of the associated services we expect that the management costs associated with such number ranges would be very low.

⁵ It could also lead to undesired and inefficient constraints on the physical design of M2M devices.

choices into account, we support the conclusion to primarily allocate (mobile) E.164 numbers for these applications. Such allocation should however be accompanied by the introduction of a flexible and harmonised service-based approach for the specification of the regulatory requirements associated with the main M2M applications and should be done in cooperation with the stakeholders involved.