CEPT ECC
Electronic Communications Committee

CEPT WORKSHOP ON
MACHINE-TO-MACHINE (M2M) COMMUNICATIONS
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Main M2M-related issues currently under consideration on the work programme of the ECC/WG NaN's Project Team on Future Numbering Issues

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PT FNI activities related to M2M

- Numbering and Addressing in M2M Communications (ECC Report 153 & ECC/Rec(11)03)
- Extra-territorial use of E.164 Numbers (ECC Report 194 & ECC/REC/(16)02)
- Evolution in the use of E.212 Mobile Network Codes (ECC Report 212 & ITU-T SG2 contribution)
- Facilitating Switching and Competition in the M2M sector – assignment to non authorised subjects / SIM OTA provisioning (in cooperation with Project Team Number Portability (PT NP))
- Numbering issues concerning the implementation of pan-European eCall

Numbering and Addressing in M2M Communications (ECC Report 153 & ECC/Rec(11)03)

ECC Report 153 AIM: to help National Regulatory Authorities (NRA) in their considerations on efficient numbering and addressing solutions for M2M applications

Options considered in the analysis:

A) Existing mobile number ranges
- Possible exhaustion of mobile resources in some Country (extra-territorial use may increase this phenomenon)

B) A new number range
- The number length of network external numbers should be as long as possible
- Exceptions regarding existing regulatory requirements could be applied to new numbering range(s)
- New numbering range(s) are not used as an alternative to existing numbering ranges to escape regulatory requirements

C) An international numbering solution (global numbers 882/883 assigned by the ITU)

D) Network internal numbers (if NP is not an obligation)

E) IPv6 addressing will become very important as an alternative numbering resource for at least part of the M2M applications

Numbering and Addressing in M2M Communications (ECC Report 153 & ECC/Rec(11)03)

ECC/Rec(11)03 Recommendations:

1) NRAs should, in cooperation with market players, establish solutions for M2M applications as part of the national numbering plan;
2) as a long term solution IPv6 addresses or numbers/addresses other than E.164 numbers should preferably be used for M2M applications;
3) NRAs should consider either using the existing **number ranges for mobile networks** or opening up **new number range(s)** for M2M applications;
4) the following aspects should be considered regarding possible new number range(s):
   i. the **number length** in the new number range(s) should be **as long as possible** (maximum of 15 digits according to ITU-T Rec. E.164);
   ii. the NRA should ensure that the **new number range(s)** are **not** used as an alternative to existing number ranges **to escape regulatory requirements**;
   iii. as some existing regulatory requirements (e.g. access to emergency services) may not be relevant or useful for M2M applications, **exceptions regarding existing regulatory requirements could be applied** to new numbering range(s) accommodating these applications."

Extra-territorial use of E.164 Numbers (ECC Report 194 & ECC/REC/(16)02)

- The purpose of this ECC Recommendation is to build on the findings of ECC Report 194 and **promote a harmonised approach to the extra-territorial use of E.164 numbers** based on agreed high-level principles while leaving sufficient **discretion regarding the detailed regulation** to the relevant authorities at the national level.

Extra-territorial use of E.164 Numbers (ECC Report 194 & ECC/REC/(16)02)

Scope of ECC/REC/(16)02 “High level principles of assignment and use”:

- **Temporary use** in a foreign country, either as roaming or nomadic services, **is not** regarded as **extra-territorial use**.
- **Bilateral agreements** are **out of the scope**

CEPT Administrations should, as a general principle, **assign and permit the use of E.164 numbers** belonging to their national numbering plans for the provision of services **inside their own territory only**.

Any exceptions, should meet the following specific principles:

- **Benefit/no negative** effect to the citizens and customers of the **two countries**; and
- **National sovereignty shall be respected** and the applicable laws and regulations of the involved countries shall be complied; and
- **Transparency** regarding which countries and for what type of services the numbers will be used. **Information should be communicated** to the relevant CEPT administration(s) in the country where the numbers are intended for use.
- The involved CEPT **administrations have discretion on the final decision**.
- In cases where problems arise the involved CEPT administrations should **cooperate** to ensure that these **principles are respected**.

Extra-territorial use of E.164 Numbers (ECC Report 194 & ECC/REC/(16)02)

Public consultation: received six answers

- Extra-territorial use for M2M services with less stringent conditions
- Permanent extra-territorial usage of E.164 for M2M services should be not prevented by national regulation and introduction of 15-digit M2M number ranges should be recommended
- More stringent and harmonised rules
- Consensus on creating a harmonized framework and warning against too heavy regulation and/or burdensome procedures
- No degradation of data protection standards
- The global E.164 numbers assigned by ITU (in particular for M2M/IoT) should be permitted at national level and Pan-EU authorization for this resources should be foreseen

Evolution in the use if E.212 Mobile Network Codes (ECC Report 212 & ITU-T SG2 contribution)

Some of the conclusions of Report 212:

1. Secure solutions for **remote provisioning of IMSIs** appear to be an **option** in the near future and **should be implemented** in a non-discriminatory way as soon as possible for all mobile services.
2. The ECC should further analyse the concepts of roaming and **extra-territorial use of E.212** resources to examine the implications of such use on national numbering plan management.
3. The use of an E.212 MNC of which MSIN ranges are assigned to different private networks (i.e. HLR Proxy Solution) is considered to be an **efficient use of MNC resources**.
4. CEPT countries should review the **assignment criteria for MNC's** and consider introducing **more flexibility** regarding the assignment of MNCs for:
   a. Traditional market players such as MVNOs, MVNEs and Resellers; and
   b. Emerging business models such as M2M service providers and SMS Service Providers.

Evolution in the use if E.212 Mobile Network Codes (ECC Report 212 & ITU-T SG2 contribution)

Contribution to ITU SG2 to update Recommendation E.212 to the new needs:

- Recognise that MNCs under **geographic MCCs are administered** by the respective national numbering plan administrator according to the countries needs
- **More flexibility in the assignment** - MNCs may be assigned to applicants other than operators (e.g. for GSM-R networks). This would reflect current market realities where numbering plan administrations consider this to be in the national interest.
- At the same time, **guarantee efficiency**
- Encouraged to apply to the ITU for the assignment of an **MNC under a shared MCC** (e.g. 901) when appropriated

Facilitating Switching and Competition in the M2M sector – assignment to no authorised subjects/SIM OTA provisioning

- GSMA has defined architectures for remote provisioning of IMSIs in case of eUICC, via OTA: a specific architecture for M2M sector.
- Will OTA actually be usable? What remains to be done?
- Via OTA, it is possible:
  - to register a first IMSI when the object is sold and the country is known
    - Can it reduce extra-territorial use?
  - to update IMSI in case of operator switch
    - Could it increase flexibility for the M2M service provider?

1. Remote provisioning of SIM cards profiles via OTA
   - How to warrant the users' right to switch the operator (porting or changing E.164 number)? What happen if other country's (or global) numbers are involved?
   - What about the synchronization between remote provisioning of SIM profiles via OTA and update of number portability DBs?
2. Assignment of numbering resources to non-authorised subjects (e.g. M2M service provider)
   - Pro/Cons? Determine conditions to be applied

Numbering issues concerning the implementation of pan-European eCall

- eCall is a European initiative intended to bring rapid assistance to motorists involved in a collision anywhere in the European Union. It works using in-vehicle sensors which, when activated, automatically establish voice and data connections directly with the relevant Public Safety Answering Points (PSAPs).
- Given the large volume of vehicles on European roads and the inherent nomadic characteristic of the service, it is essential that the numbering requirements for e-Call are examined to allow NRAs to plan accordingly.
- PT FNI has adopted a watching brief for now until more information becomes available. PT FNI will also participate in ERTICO's eCall interoperability workshops and the European eCall Implementation Platform's (EeIP) task force on life cycle management.

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Thank you for your attention

Questions?

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