



Electronic Communications Committee (ECC)
within the European Conference of Postal and Telecommunications Administrations (CEPT)

ECC RECOMMENDATION (11)03

NUMBERING AND ADDRESSING FOR MACHINE-TO-MACHINE (M2M) COMMUNICATIONS

Recommendation adopted by the Working Group Numbering and Networks (NaN)

INTRODUCTION

In recent years a rapid development of a variety of services that make use of Machine-to-Machine (M2M) communication has taken place. M2M is a communication technology where information can be transferred in an automated way with little or no human interaction between devices and applications. The advantages of M2M are great for both business and consumer purposes. For business use, M2M technology may lead to more effective and efficient operations. For consumers, as an example, applications used for home security and smart metering can be facilitated by M2M.

It is expected that the development of M2M applications will have an impact on national numbering plans because machines need to be uniquely identified and addressed in order to communicate with them, or rather to enable them to communicate with each other. The natural intention by operators and M2M Service Providers is to use E.164 numbers from the existing numbering plan for M2M services because of the relatively simple implementation in already existing network infrastructure and of the conclusion that IPv6 is not supported by the current networks.

The potential amount of M2M devices could be large and some applications may need several numbers (e.g. E.164 numbers) or addresses (e.g. IPv6 addresses), and therefore there is a potential need for a large amount of identifiers. It is recognized that some national numbering plans may not be prepared for such big demand for numbers. Thus a numbering strategy is required for both short and long term to meet requirements for M2M services. With this recommendation a harmonised view on preferable numbering solutions is given.

“The European Conference of Postal and Telecommunications Administrations,

considering

- a) that the potential number of M2M applications could be large;
- b) that the development of M2M applications may have a big impact on national numbering plans;
- c) that the short and medium term numbering solution for M2M applications will be E.164 numbering;
- d) that the IPv6 addressing might be a long term solution;
- e) that significant number of CEPT countries do not have sufficient capacity in their existing mobile number ranges to accommodate numbering requirements for M2M applications;
- f) that network internal numbers may create lock-in of customers, which is in general not acceptable from the regulatory point of view;

recommends

- 1) that the National Regulatory Authorities (NRAs) should, in cooperation with market players, establish numbering solutions for M2M applications as part of the national numbering plan;
- 2) that as a long term solution IPv6 addresses, or numbers/addresses other than E.164 numbers should preferably be used for M2M applications, and these numbering/addressing schemes or switching from E.164 numbering plan to a new plan should not prohibit market development or competition;
- 3) that the NRAs should consider either using the existing number ranges for mobile networks or, in case of scarcity in existing mobile ranges or if different regulatory approach should be applied, opening up new number range(s) for M2M applications;
- 4) that the following aspects should be considered regarding possible new number range(s):
 - i. the number length in the new number range(s) accommodating future mass M2M applications should be as long as possible (in case of E.164 numbers 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.”