# Numbering Arrangement for Machine-to-Machine Communications

Telecommunications Regulatory Affairs Advisory Committee
20 November 2014

Introduction to M2M Communications

- Communications between machines/devices
- Data exchange in an automatic or scheduled manner
- Little or no human intervention

End Point Devices

Communications network

Application Server
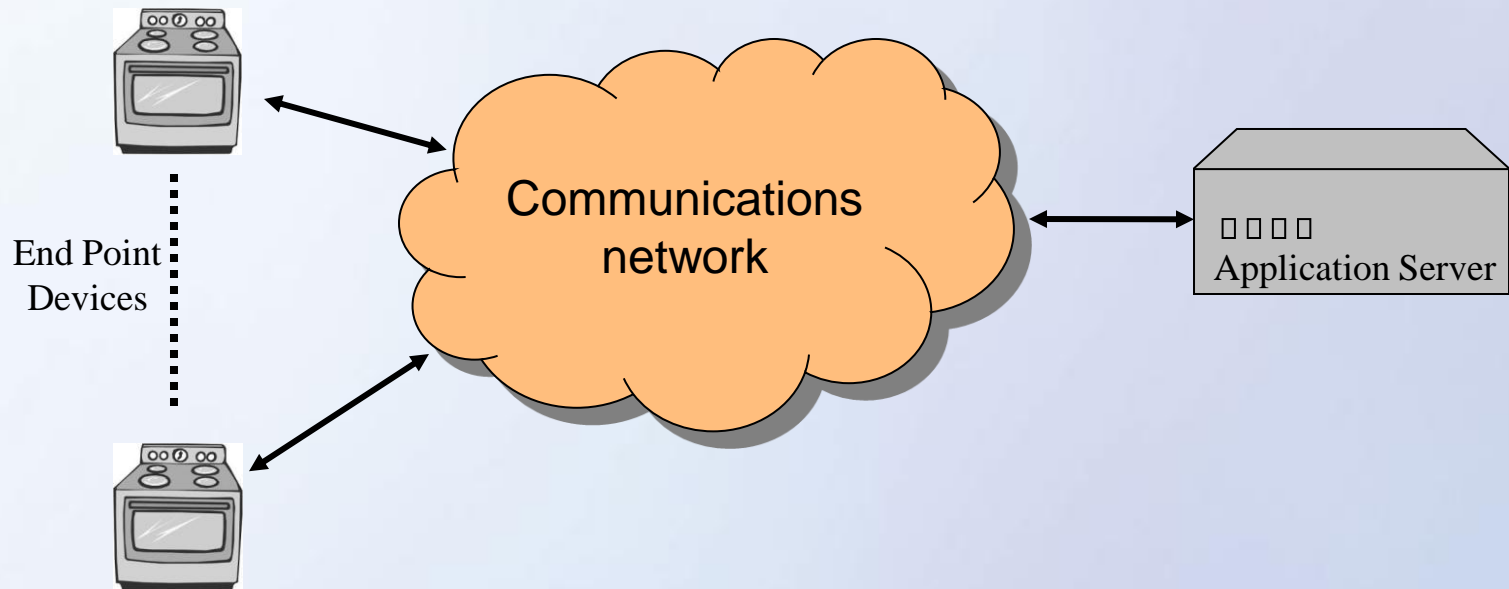
M2M Addressing Methods

- Each M2M device need to be uniquely addressed

- Common addressing methods
  - ITU-T E.164 numbers
  - IP Addresses

- Anticipated rapid growth of M2M applications in future
  - Need for number allocation arrangement for M2M services
  - To ensure adequate supply of M2M numbers
  - To avoid depletion of E.164 numbering resources for other services

Past Discussions

- Former Numbering Advisory Committee ("NAC") in Nov 2011
  - ➢ Considered proposal of 12-digit numbering arrangement for M2M services

- Telecommunications Numbering Working Group ("TNWG") in Apr 2013
  - ➢ Followed up the M2M discussion in former NAC
  - ➢ Considered at that time that M2M demand remained low and some operators' network did not support routing of 12-digit numbers
  - ➢ No urgent need to allocate 12-digit numbers for M2M services
  - ➢ Concluded to keep monitoring the development of M2M services and revisit the matter in due course

- TNWG in July 2014
  - ➢ Resurrected the M2M discussion

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Proposed M2M Numbering Arrangement

- To re-allocate "4500X" numbers in 12-digit length for M2M services

  ➢ No requirement on number portability

  ➢ No requirement for routing numbers across networks

  ➢ Roaming communications allowed subject to agreement with other operators

  ➢ Not used for voice and SMS communications to differentiate the 12-digit M2M numbers from ordinary 8-digit subscriber numbers

- To reserve "450(1-9)X" numbers in 12-digit length for growth of M2M services in the future

M2M Numbers Application Criteria

- Eligible to MNOs, MVNOs, FNOs, SBO providing Class 1 or Class 2 services, paging operators

- Applicant initially may apply for a block of "4500XXX" numbers (100k 12-digit numbers)

- For applying for additional M2M number blocks, same criterion of utilisation rate threshold for additional subscriber numbers will apply.

Recommendation

(a) "4500X" numbers with digit length of 12 will be allocated for M2M services and "450(1-9)X" numbers with digit length of 12 will be reserved to meet the future demand for M2M services;

(b) the numbers in (a) need not support number portability and inter-network routing. Meanwhile, these numbers are not allowed to be used for voice and SMS services;

Recommendation (cont.)

(c) MNOs, MVNOs, FNOs, SBO providing Class 1 or Class 2 services, paging operators may initially apply for a block of "4500XXX" numbers. Additional number blocks for M2M services will be allocated should the prevailing utilisation rate threshold be exceeded; and

(d) the Hong Kong Numbering Plan and the "Code of Practice Relating to the Use of Numbers and Codes in the Hong Kong Numbering Plan" will be updated to reflect the allocation / reservation of "450X" numbers for M2M services.

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Next Steps

- Subject to views of the Members, the Numbering Plan and the Code of Practice will be updated to reflect the new arrangement for M2M communications

Thank You