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**BEREC**

The logo for BEREC features the word 'BEREC' in a bold, sans-serif font. The letters 'BERE' are blue, and 'C' is red. A blue swoosh underline starts under the 'E' and extends to the right. Below the main text, there are several thin, overlapping lines in blue and red that curve across the page.

# **BEREC Report “Enabling the Internet of Things”**

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## Overview

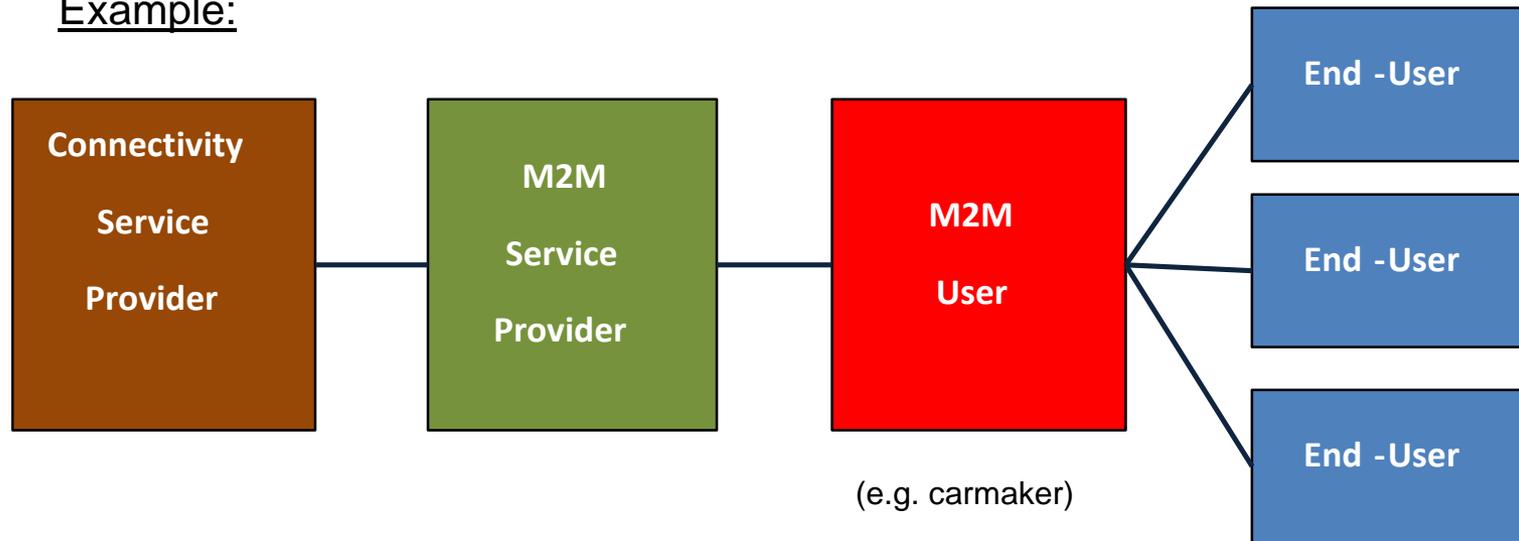
- I. Introduction
- II. Summary of BEREC's considerations
- III. Selected Topics of the BEREC IoT Report
- IV. Conclusion / Q&A

## I. Introduction : Scope of the Report

- Focus on mobile connectivity:
  - NRAs have primarily been contacted by stakeholders on issues regarding mobile network based IoT solutions (e.g. numbering, roaming and switching).
  - However, only a minor fraction of M2M connections based on mobile technologies.
  - Hence, many IoT services exist or may be developed which are based on another kind of connectivity than mobile connectivity.
  - Any possible regulation with regard to mobile connectivity would only apply to a small subset of the market.
  
- Pro-competitive approach:
  - Sufficient resources in order to support the service – Section 2
  - Legal framework fit for IoT – Section 3
  - Consumers' acceptance of IoT services – Sections 3.4 and 4

## I. Introduction: IoT value chain

Example:



- Connectivity service provider = ECS  
(who provides connectivity for remuneration over a public network)
- IoT/M2M-user = typically no ECS, unless reseller
- However, careful case-by-case approach necessary, since there are so many different types of packages including connectivity and since business models are just beginning to evolve.

## II. Summary of BEREC's considerations

- No special treatment of IoT services and/or M2M communication appears necessary or appropriate, except for the following areas:
  - Roaming
  - Switching
  - Number portability
  
- Privacy: careful evolution – but not an entire overhaul – of the existing EU data protection rules.
  
- No need for a European numbering scheme
  - In its Draft EEEEC, Commission does not pursue this concept (similar ETNS) any longer.
  - Instead, MS shall determine a national numbering range that may be used throughout the territory of the EU for non-interpersonal communication services.

### III. Selected Topics of the BEREC IoT Report

1. Privacy / Network security
2. Standards / Switching
3. Scarce resources

➡ Relevance for sessions of BEREC IoT Workshop

## 1. Privacy / Network security

### Privacy:

- Personal data may be collected by a number of connected devices.
- BEREC input to review process:
  - No need for special treatment with regard to principles
    - Principles like consent-based data collection and processing also apply in IoT context.
  - However, careful adaption to / evolution for the IoT-context
    - User-friendly information and consent procedures (example: smart home area)
- Revision of EU data protection framework:
  - Regulation (EU) 2016/678 (General Data Protection Regulation) adopted.
  - Review ePrivacy Directive (clarification that applicable to connectivity underlying IoT, cf. recital 12 of Draft ePrivacy Directive)

### Network security:

- All obligations apply also to IoT industry provided that services are considered ECS or to the ECS which is underlying any IoT service.
- NIS-Directive (July 2016, adopted after BEREC Report)
- BEREC input to review process: No need for special treatment

## 2. Standardisation / Switching

- Standards play a significant role in the development of M2M technologies as they define openness, interoperability and ultimately competitiveness in the M2M environment.
- Standardisation bodies are already addressing the issue of standardisation in the M2M environment in a significant manner.
- Switching connectivity provider is an enabler for competition.
- BEREC input to review process:
  - With regard to standardisation, no need for special treatment.
  - Statutory obligation to introduce OTA provisioning at a certain point in time, or at least regulatory mechanisms or incentives to foster OTA provisioning.
  - A new approach might be appropriate in view of number portability.
- Review Process:
  - Draft EECC includes provision on OTA (cf. Article 87(6)).

### 3. Scarce resources: Spectrum

- A range of technology options are likely to be used to deploy M2M services.
- Given the variation in maturity in the evolution of the M2M market across Member States, NRAs should monitor market developments and spectrum use.
- For the benefit of harmonization, industry is invited to make use of the established processes via ETSI and CEPT if it identifies the demand for additional spectrum.
- Based on these harmonized European Standards and frequencies, NRAs are invited, where appropriate, to make spectrum available to support these applications.
- BEREC input to review process: No need for special treatment

### 3. Scarce resources: Numbering

- Numbering issues are primarily dealt with by CEPT and/or ITU on an international level.
- Global marketing of connected devices (which rely on numbers as identifiers)
  - Use of existing numbering resources seems to be a reasonable approach.
  - The following aspects appear to be key for IoT services to be economically viable:
    - Permissibility of extra-territorial use of national E. 164 and E.212 numbers (an internationally harmonised approach is desirable).
    - Actual possibility to develop IoT solutions based on global ITU resources (development: increased assignment of ITU resources + roaming “footprint” based on ITU resources)

**Thank you for your attention!**