

# Global numbering for M2M/IoT devices and *eCall*

Workshop on Numbering for *eCall*

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VISIONng



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# Outline

- *eCall* requirements
- 878 features
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# eCall requirements

- Implementation in April 2018
- In case of accident, establish voice connection and transmit a standard set of data
  - Need E.164 and E.212 numbers, to be used across Europe
- About 250M cars in Europe
  - About 50M new cars per year in Europe
  - Will need at least 300M numbers, more likely 500M
- Caller number must be forwarded to 112 call center to permit call back
- Full geographical coverage
- Seamless roaming
- Allow for competition and multiple providers

# 878 features

- 878 10 (E.164) and 901 51 (E.212) available now
  - 10 digits available for users, so 10'000M numbers
- International number, available everywhere
- Cost effective technology for large scale deployment across Europe
- Implemented in ENUM, enables competition and additional services such portability, user profiles, geo-location information, entertainment, IoT devices
  - possibility of revenue-generation for such services
  - possibility of individual profiles with E.164 numbers for individual users
- Portable – enables competition
- Caller ID forwarded
- Routing and roaming would be provided by entities to whom we allocate 878 numbers
- Numbers can be recovered if not active for a set period, say 1 year

# Background on 878

- 878 was originally for personal telecommunications, but ITU-T has now authorized its use for M2M
  - Numbers can be used to address any digital entity
- 878 numbers are portable
  - But at present only 878 10 has been assigned, to VisionNG
- 878 10 is not tied to a particular country or region
  - A person or device, anywhere in the world can be assigned an 878 10 identifier
- Blocks of numbers under 878 10 can be assigned to companies
- 878 is future-proof, in particular by using ENUM
  - As new services are introduced, or as new platforms are deployed, new NAPTR URI mappings can be introduced

# Background on VisionNG

- In 1996, the ITU reserved the country code 878 for UPT services
- In December 2001, the ITU made the permanent assignment to VisionNG of the 878 10 sub-range
- In 2002, the ITU approved 878 10 for ENUM delegation
- In January 2016, VisionNG was assigned an E.212 codes, so it can issue IMSIs in support of the 878 10 numbers
- A Joint Venture company, 878TEN Ltd, is the sole and exclusive distributor of 878 10 numbers and their associated IMSIs
- 878CLR Ltd is the carrier of last resort for 878 10 numbers

# Background on 878TEN Ltd (1/2)

- Equipment is distributed across four physical locations using mirrored databases
- Two locations are used in each of two cities that are sufficiently remote from each other to ensure potential disaster scenarios are de-correlated
- Each location is housed in an extremely well connected telecoms and data hub allowing the simple and rapid direct connection to effectively any telecommunications or Internet service provider anywhere in the world
- The HSS/HRR supports GSM, UMTS, LTE, IMS, WiFi and any other network that uses MAP or Diameter protocols for authentication
- All core network elements are software defined
- All infrastructure is monitored from two Network Operations Centre sites, one in London, England and one in Sofia, Bulgaria
- The current infrastructure is capable of supporting demonstration projects and relatively small commercial deployments (a few million numbers) anywhere in the world

# Background on 878TEN (2/2)

- We are in the process of partnering with Tier 1 Mobile Network Operators with core network elements that will be implementing the number ranges on their networks
- We will be roaming on other MNO's
- We expect to partner with operators, service providers, and car manufacturers to implement a full solution including *eCall*



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