Overview on emergency Call worldwide – status 2016

eCall Days Germany
Hamburg
Sept. 22 & 23, 2016
Emergency call development around the world
Emergency call development around the world - EMEA

- **Europe**
  - Legislation for M1/N1 type vehicles as per March 31, 2018 whole vehicle type approval according to **European Norms (EN)**
    - **European Union**
    - **EFTA** (Iceland, Norway, Switzerland)
    - Other European Non EU countries

- **Custom Union Eurasia**
  - Russia, Belarus, Kazakhstan, (Armenia and Kyrgyz Republic, tbc)
  - ERA-GLONASS legislation based on Russian **GOST standards** since 2015
  - 2017 all vehicles incl. aftermarket affected

- **Turkey**
  - Legislation based on EN
  - EU whole vehicle type approval (2018)

- **Israel**
  - Legislation potentially based on EN
    - Probably not based on 112!
  - EU whole vehicle type approval (2018)
Emergency call development around the world – ASIA

-China-
- No government standard fixed
- Emergency call activities by TTIA (local forum, not at government level)
  - eCall technical Working Group
  - 2014 executed eCall trials:
    - BYD, Shenzhen,
    - JAC, Hefei
    - China TSP, Beijing
- Involved OEMS
  - BYD
  - JAC
- Involved platform providers:
  - Healthlink,
  - China TSP
  - CAA -China Automobile Association
- Involved MNOs
  - China Unicom
  - China Telecom
- Private eCall solutions available (e.g. OnStar launched in 2009)

-Japan-
- Not decided yet by JNCAP
- Helpnet is privated eCall by JAPAN MAYDAY SERVICE CO., LTD. since 200x
- Major stock holder is Toyota. Honda was accepted to join few years ago.
- Helpnet extension Dcall, could be standardized and legalized, but nothing is fixed yet.

-South Korea-
- No government standard fixed yet
- Standard in near future expected

-Australia-
- No government standard fixed
- Private eCall solutions AVL services via fleet managers
Emergency call development around the world – Americas

- **Canada**
  - No eCall legislation
  - Various OEM do meanwhile offer private ecall solutions (e.g. GM OnStar, since 1998)

- **USA**
  - No eCall legislation
  - E911, NHTSA is still researching
  - Various OEM do meanwhile offer private ecall solutions
    (e.g. GM OnStar, since 1998)

- **Brazil**
  - Nothing formalized regarding emergency call, likely nothing will push.
  - TPS services like OnStar deployed
  - Bill 245 (non eCall)
Emergency call deployment – two attitudes

I. Emergency call connected to a PRIVATE call center (eCall provided via Third Party Service provider)

II. Emergency call connected directly to a PUBLIC call center (PSAP\(^1\)) (e.g. 112-based eCall acc. to European Norms [EN])

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1) PSAP: Public Safety Answering Point  
2) MSD: Minimum Set of Data
Regional requirements – Europe

- 112 based eCall using TS12 channel
- Voice connection (e.g. 2G and/or 3G)
- In-Band modem functionality to send Minimum Set of Data (MSD) to Public Safety Answering Point (PSAP)
- GNSS: Gallileo
- SIM (e.g. dormant mode)
- Affected vehicle types: M1 and N1 (refer separate type listing)
- Related EN Norms (refer separate listing)
112 based eCall Mandatory Deployment Status - Vehicle Categories and Timeline

- Mandatory fitting of 112-based eCall In-Vehicle Equipment for all new type approvals of M1 and N1 vehicles from March 31, 2018

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>passenger vehicles used for the carriage of passengers and comprising not more than eight seats in addition to the driver’s seat</td>
</tr>
<tr>
<td>N1</td>
<td>goods vehicles used for the carriage of goods and having a maximum mass not exceeding 3.5 t.</td>
</tr>
</tbody>
</table>
## Overview vehicle type abbreviations

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>M1</td>
<td>passenger vehicles used for the carriage of passengers and comprising not more than eight seats in addition to the driver’s seat</td>
</tr>
<tr>
<td>M2</td>
<td>passenger vehicle more than 8 seats excl. driver (bus), not exceeding 5t.</td>
</tr>
<tr>
<td>M3</td>
<td>passenger vehicle more than 8 seats excl. driver (bus), exceeding 5t.</td>
</tr>
<tr>
<td>N1</td>
<td>goods vehicles used for the carriage of goods and having a maximum mass not exceeding 3.5 t.</td>
</tr>
<tr>
<td>N2</td>
<td>goods vehicles used for the carriage of goods and having a maximum mass exceeding 3.5t. not exceeding 12t.</td>
</tr>
<tr>
<td>N3</td>
<td>goods vehicles used for the carriage of goods and having a maximum mass exceeding 12t.</td>
</tr>
<tr>
<td>L3</td>
<td>two wheeled vehicle (Powered 2 Wheeler, P2W)</td>
</tr>
<tr>
<td>L4</td>
<td>two wheeled vehicle with side car</td>
</tr>
<tr>
<td>L5</td>
<td>three wheeled vehicle (trike)</td>
</tr>
<tr>
<td>L6</td>
<td>four wheeled vehicle (quad)</td>
</tr>
</tbody>
</table>
Overview vehicle cluster nomenclature

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger cars</td>
<td>Motor vehicles with at least four wheels, used for the transport of passengers, and comprising no more than eight seats in addition to the driver's seat.</td>
</tr>
<tr>
<td>Light commercial vehicles</td>
<td>Motor vehicles with at least four wheels, used for the carriage of goods. Mass given in tons (metric tons) is used as a limit between light commercial vehicles and heavy trucks. This limit depends on national and professional definitions and varies between 3.5 and 7 tons.</td>
</tr>
<tr>
<td>Minibuses</td>
<td>Derived from light commercial vehicles, used for the transport of passengers, comprising more than eight seats in addition to the driver's seat and having a maximum mass between 3.5 and 7 tons.</td>
</tr>
<tr>
<td>Heavy trucks</td>
<td>Vehicles intended for the carriage of goods. Maximum authorized mass is over the limit (ranging from 3.5 to 7 tons) of light commercial vehicles. They include tractor vehicles designed for towing semi-trailers.</td>
</tr>
<tr>
<td>Buses and coaches</td>
<td>Used for the transport of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass over the limit (ranging from 3.5 to 7 tons) of light commercial vehicles.</td>
</tr>
<tr>
<td>Light vehicles</td>
<td>Include passenger cars and light commercial vehicles.</td>
</tr>
<tr>
<td>Commercial vehicles</td>
<td>Include light commercial vehicles, heavy trucks, coaches and buses.</td>
</tr>
</tbody>
</table>
# EU 112-based eCall – related European Norms (EN)

<table>
<thead>
<tr>
<th>Norm</th>
<th>Description</th>
<th>Year Published</th>
<th>Buy Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEN - TC278</td>
<td>Intelligent Transport Systems - eSafety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN 15722</td>
<td>eCall minimum set of data</td>
<td>published 2015</td>
<td>buy</td>
</tr>
<tr>
<td>EN 16062</td>
<td>eCall - High Level Applications Protocols</td>
<td>published 2016</td>
<td>buy</td>
</tr>
<tr>
<td>EN 16072</td>
<td>Pan European eCall operating requirements</td>
<td>published 2017</td>
<td>buy</td>
</tr>
<tr>
<td>EN 16454</td>
<td>eCall end to end conformance testing</td>
<td>published 2018</td>
<td>buy</td>
</tr>
<tr>
<td>EN 16102</td>
<td>Intelligent transport systems —eCall— Operating requirements for third party support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN TS 16405</td>
<td>eCall Additional optional dataset for commercial vehicles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3GPP - ETSI</td>
<td>TSG CT: Core Network and Terminals - WG1: MM/CC/SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3GPP TS 22.101</td>
<td>Stage 1 - Service aspects; Service principles</td>
<td></td>
<td>3GPP link</td>
</tr>
<tr>
<td>3GPP TS 24.008</td>
<td>Mobile radio interface Layer 3 specification; Core network protocols; Stage 3</td>
<td></td>
<td>3GPP link</td>
</tr>
<tr>
<td>3GPP - ETSI</td>
<td>TSG SA: service and system Aspect - WG1: Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3GPP TR 22.967</td>
<td>Tranferring of emergency call data</td>
<td></td>
<td>3GPP link</td>
</tr>
<tr>
<td>3GPP - ETSI</td>
<td>TSG SA: Service and system Aspect - WG4: Codec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3GPP TS 26.267</td>
<td>eCall Data Transfer; In-band modem solution; General description</td>
<td></td>
<td>3GPP link</td>
</tr>
<tr>
<td>3GPP TS 26.268</td>
<td>eCall Data Transfer; In-band modem solution; ANSI-C reference code, version 10.0.0</td>
<td></td>
<td>3GPP link</td>
</tr>
<tr>
<td>3GPP TS 26.269</td>
<td>eCall Data Transfer; In-band modem solution; Conformance testing</td>
<td></td>
<td>3GPP link</td>
</tr>
<tr>
<td>3GPP TR 26.969</td>
<td>eCall Data Transfer; In-band modem solution; characterization report</td>
<td></td>
<td>3GPP link</td>
</tr>
<tr>
<td>ETSI TC MSG</td>
<td>eCall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TR 103 140</td>
<td>eCall for VoIP</td>
<td>version 1.1.1</td>
<td>link</td>
</tr>
<tr>
<td>TS 103 321</td>
<td>eCall HLAP Conformance Testing - Abstract Test Suite (ATS) and Protocol Implementation eXtra Information for Testing (PIXIT)</td>
<td>version 1.1.1</td>
<td>link</td>
</tr>
<tr>
<td>TS 103 412</td>
<td>Pan-European eCall end to end and in-band modem conformance testing - eCall prose specification for Pan-European eCall testing</td>
<td>version 0.0.7</td>
<td>link</td>
</tr>
<tr>
<td>TS 103 428</td>
<td>eCall HLAP Interoperability Testing</td>
<td>version 0.0.2</td>
<td>link</td>
</tr>
</tbody>
</table>

3GPP – 3rd Generation Partnership Project
CEN - European Committee for Standardization
Regional requirements - Russia – ERA-GLONASS

- UMTS 900 and 2100 mandatory
- MSD transmission per In-band Modem but as well per SMS
- GLONASS GNSS mandatory
  - + multiple GNSS receiver e.g. GLONASS/GPS/Galileo accepted
- Echo cancellation and noise reduction requirements
- Test eCall session can be initiated from vehicle, whilst test results to be send to back-end
- Over The Air In Vehicle System management required
- Over The Air IVS software upgrade ability required
- Crash Acceleration Profile recording, whilst result to be send to back-end
- OEM embedded (so called line fit) and Retrofit (after market dealer option) solutions
- “Black box” functionality (raw data storage)
- Standardized I/O port and protocol for external sensor connection
• 01 Jan 2015 – new vehicles of categories М1, N1
  assessment of compliance in the form of vehicle type approval at first time); new vehicles of categories N2, N3 not intended for dangerous cargo transportation; new vehicles of categories М2, М3 not intended for passenger transportation (assessment of compliance in the form of vehicle type approval at first time)

• 01 Jan 2016 – vehicles of categories М2, М3
  intended for passenger transportation and vehicles of category N1 (weight > 2.5 tons), vehicles of categories N2 and N3 intended for dangerous cargo transportation that will put in circulation at first time (new vehicles, as well as all imported vehicles not previously used in the territory of the Russian Federation)

• 01 Jan 2017 – all categories of vehicles
  sold at first time (new vehicles, as well as all imported vehicles not previously used in the territory of the Russian Federation).
Next Generation eCall – Ongoing Activities

- CEN – Higher layer aspects (XML for MSD)
  - Update pan European Operating Requirements (EN 16072) for NG eCall (backwards compatible with EU eCall regulations)
  - Update HLAP (EN 16062) to reference 3GPP IMS specifications and IETF as an alternative to in-band
  - Future data objects for new categories (HGV, DGV, Personal eCall, Medical ..)

- 3GPP – Radio, link layer, transport, IMS session establishment
  - Release-14
  - NG eCall IMS standards (refer separate slide)

- IETF – eCall session establishment, eCall message delivery (e.g over LTE)
  - Additional Data Related to an Emergency Call:
  - Next-Generation Pan-European eCall:
  - Next-Generation Vehicle-Initiated Emergency Calls:

IETF – Internet Engineering Task Force
3GPP – 3rd Generation Partnership Project
CEN - European Committee for Standardization
## Next Generation eCall – 3GPP IMS Standards

<table>
<thead>
<tr>
<th>3GPP TS</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.167</td>
<td>IP Multimedia Subsystem (IMS) emergency sessions</td>
</tr>
<tr>
<td>23.401</td>
<td>General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access</td>
</tr>
<tr>
<td>24.301</td>
<td>Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3</td>
</tr>
<tr>
<td>24.229</td>
<td>IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3</td>
</tr>
<tr>
<td>36.331</td>
<td>Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification</td>
</tr>
</tbody>
</table>
Main differences to 112-based eCall (EN)

- GLONASS GNSS support - a MUST
  - Combined GNSS receivers (e.g. GLONASS/GPS/Galileo) - possible
- MSD transmission
  - In-band (primary method – standardized by 3GPP)
  - SMS (back-up mechanism)
- Echo cancellation and noise reduction requirements for IVS defined
- Test requirements defined:
  - Test session can be initiated from vehicle, test results can be transmitted to back-end
- UMTS 900/2100 support
- Remote IVS management
- Remote IVS software upgrade
- Crash Acceleration Profile recording and transmission to back-end
- Two options for IVS: OEM Line-fit and After-market installed
  - “Black box” function (raw data storage)
  - Standardized I/O port and standardized protocol for external sensors
# ERA/GLONASS – Russian National Standards

<table>
<thead>
<tr>
<th>Standard Number</th>
<th>Title</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOST R 55531-2013</td>
<td>Test methods of in-vehicle emergency call system conformity to the requirements for quality speakerphone in a vehicle cabine</td>
<td><a href="https://runorm.com/product/view/2/96846">https://runorm.com/product/view/2/96846</a></td>
</tr>
</tbody>
</table>
ERA/GLONASS certification – 2015 success story

- GTO embraced and successfully guided ERA-GLONASS eco-system players
  - Active member of 112-based eCall and ERA-GLONASS working groups right from the beginning
  - Long lasting result oriented relationship with GLONASS UNION (eUICC and Gemalto Cinterion® Automotive M2M Modules)
  - Live eCall and ERA-GLONASS interoperability demonstrations together with 1stTiers and GLONASS UNION during the 2014 European ITS Congress in Helsinki
  - Gemalto internal reference device (112-based eCall and ERA-GLONASS Demo Box)
  - Close relationship and support by Gemalto engineers to official Test-Houses
  - Close cooperation with certification equipment manufacturers

⇒ Successful type approvals by Asean and European OEMs in close coooperation with 1stTiers and Gemalto using Gemalto Cinterion® Automotive M2M Modules

Note: Unmatched support and appreciated experience by Gemalto Engineering experts can be made available and are subject to according service agreements

http://www.gemalto.com/brochures-site/download-site/Documents/M2M_CaseStudy_eCall.pdf
Regional requirements – China
(status April 2016: not final)

- No government standard fixed
- emergency call activities by TTIA(local forum, not at government level)
- Voice connection via circuit line (CS)
  e.g. GSM (GPRS), TD-SCDMA, WCDMA, CDMA2000, HRPD, LTE-FDD/LTE-TDD, etc
- Data transmission via packet line (PS)
- Connection to First Answering Point (FAP, First Platform)
  - Alternative 1: Circuit Switched after Packet Switched (PS),
    fall back to eCall if PS not within 10s
  - Alternative 2: eCall
  - Alternative 3: TSP solutions
- GNSS (like: GPS, GLONASS, Beidou)
- „open“ interface (TSP, fleet manager, end-user, .)
- Operational temperature: -30°C~70°C (storage temperature of the terminal: -40°C~85°C)
- Backup batteries: >10 min.
- Driver ID is mandatory for passenger, cargo and dangerous goods vehicles and taxis
  (optional for private passenger vehicle)
- Services and Maintenance (e.g. Updates: local and remote)
- Related Norms and Standards (refer separate listing)
Emergency call architecture – Chinese Focus
(TIAA, status April 2016: not final)

- no government eCall standard
- industry self-initiative service

Source TIAA:
Technical Requirements for Emergency Rescue System Platform Subsystems
Technical Requirements for Emergency Rescue System’s Vehicle-mounted Subsystem (draft Versions)
# China emergency Call – Related Norms and Standards
(status April 2016: not final)

<table>
<thead>
<tr>
<th>Standard</th>
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<tbody>
<tr>
<td>YD/T 1050</td>
<td>Test Specification for 800 MHz CDMA Digital Cellular Mobile Telecommunication Network: Mobile stations</td>
</tr>
<tr>
<td>YD/T 1214</td>
<td>900/1800MHz TDMA digital cellular mobile telecommunication network, Technical requirement for general packet radio service (GPRS) equipment: Mobile stations</td>
</tr>
<tr>
<td>YD/T 1367</td>
<td>2GHz TD-SCDMA digital cellular mobile telecommunication network, Technical requirement for terminal equipment</td>
</tr>
<tr>
<td>YD/T 1547</td>
<td>2GHz WCDMA digital cellular mobile telecommunication network, Technical requirement for terminal equipment (Phase III)</td>
</tr>
<tr>
<td>YD/T 1558-2013</td>
<td>800MHz/2GHz cdma2000 digital cellular mobile telecommunication network, Technical requirement for equipment, mobile stations (including main body and card</td>
</tr>
<tr>
<td>YD/T 2575-2013</td>
<td>TD-LTE digital cellular mobile telecommunication network, Technical requirement for terminal equipment (Phase I)</td>
</tr>
<tr>
<td>YD/T 2577-2013</td>
<td>LTE FDD digital cellular mobile telecommunication network, Technical requirement for terminal equipment (Phase I)</td>
</tr>
<tr>
<td>YD/T 1679-2013</td>
<td>800MHz/2GHz cdma2000 digital cellular mobile telecommunication network, Technical requirement for equipment, High-rate package data (HRPD) (Phase II) access terminal (AT)</td>
</tr>
<tr>
<td>JT/T 766-2009</td>
<td>Technical requirements for ship-borne monitoring equipment of Beidou navigation satellite system</td>
</tr>
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<td>3GPP TS 26.267</td>
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<tr>
<td>GB/T 19056</td>
<td>Vehicle travelling data recorder</td>
</tr>
<tr>
<td>GB/T 19951</td>
<td>Road vehicle--Test methods for electrical disturbances from electrostatic discharge</td>
</tr>
<tr>
<td>QC/T 413</td>
<td>Basic technical requirements for automotive electric equipment</td>
</tr>
<tr>
<td>QC/T 417.1</td>
<td>Vehicle Wiring Harness Connector Part 1: Definition, test methods and general performance requirements</td>
</tr>
<tr>
<td>QC/T 420</td>
<td>Fuse-links for motor vehicles</td>
</tr>
<tr>
<td>QC/T 730</td>
<td>Thin-walled insulated low-voltage Car Cable</td>
</tr>
</tbody>
</table>

Regional requirements – USA

- No eCall legislation
  - E911 services need to be supported generally
  - NHTSA is still researching, but government has not stepped in for regulation on this topic
- Various OEM do meanwhile offer TPS solutions including private eCall (e.g. GM OnStar since 1996; FCA and ACN technology, etc)
- Communication technology
  - CDMA 1XRTT & EVDO technology sunset by 2020
  - Likely sunset of AT&T 3G support in 2021
  - Market is now only pushing LTE devices for new projects
    - Need to support VoLTE now
  - 2020 onwards LTE only devices
    - 3G fallback for Canada and Mexico required... For now
Regional requirements – Japan

- No eCall legislation
  - Not decided yet by JNCAP

- Various OEM do meanwhile offer TPS solutions
  - G-Book by Toyota,
  - CarWings by Nissan
  - Internavi by Honda

- Helpnet
  - Private eCall solution offered by JAPAN MAYDAY SERVICE CO., LTD. since 200x
    - Major stock holder is Toyota.
    - Honda was accepted to join few years ago (~2014).
  - Extension to Dcall, could be standardized and legalized,
    - Nothing is fixed yet.
extensive eCall Milestones (Gemalto review)

2005  Wireless Modules joins eCall Initiative
2006  first eCall pre-standard released
2007  successful implementation of ABQ in-band modem
2008  live eCall demonstration at CTIA Wireless
2010  launch of eCall prepared products, demos at eSafety / Awareness campaigns
2011  live eCall demonstration at European eCall Implementation Platform (EeIP) Meeting
2011  kick-Off of active support to HeERO-I projects (EU funded pre-deployment of eCall)
2011  active supporting creating first proving ground extended by 112 EU eCall (MIRA, UK)
2012  participation in 1st ETSI/ERTICO eCall interoperability testing (Plugtest, Testfest)
2012  supporting creation of 1st 112 EU eCall test bed outside of Europe (YRP, Japan)
2013  kick-Off of active support to HeERO-II projects
2014  chairing EeIP TF RETRO (incl. reference devices for Dealer Option and Consumer)
2014  compatibility and Interoperability demonstration 112 based eCall and ERA-GLONASS
      at European ITS Congress Helsinki, Finland
2015  25. Sept 2015 kick-Off iHeERO (infrastructure deployment)

Clear commitment and implementation of latest standards

http://www.gemalto.com/brochures-site/download-site/Documents/M2M_CaseStudy_eCall.pdf
EU 112-based eCall – iHeERO deployment project

Why iHeERO (“i” for “infrastructure”)?
- Mandatory deployment of eCall based on 112 for Member State PSAP by 1 October 2017
  - PSAP upgrade
  - Conformation assessment
- After 31 March 2018, eCall will be installed in all new types of vehicles and light vans aiming for whole vehicle type approval in the EU
- Identify advanced eCall Requirements (no mandate for 2018!)
  - HGV eCall (incl. heavy / dangerous good vehicles, long distance busses & coaches)
  - P2W (powered two wheelers)
  - Data Integration
  - NG112 eCall (next generation eCall, e.g. using LTE)

Deployment project of EU-wide eCall with Euro 30‘6 funding (50/50)
- 1 January 2015 – 31 December 2017
- Project leader: German State of Lower Saxony, under the authority of the German Ministry of Transport BMVI
- Technical Implementation Officer: ERTICO – ITS Europe Project
- 11 EU Member States
- 58 commercial partners
- Gemalto as associated partner (like in HeERO1 and HeERO2)
Take Away

- Gemalto is well positioned to serve both
  - legislation driven as well as
  - voluntary deployment of emergency call systems
- Gemalto products (Cinterion™ M2M Modules, MIMs, eUICC, eSE, ..) are mature, field proven and have strong reference achievements
  - in ERA-GLONASS deployment respectively certification
  - EU Commission funded 112-based eCall pre deployments
- Gemalto trusted services (ODC, OSM, QoE,...), consulting (e.g. security), complementary development and support packages are well perceived and awarded
GEMALTO M2M EMERGENCY CALL – AUTOMOTIVE SEGMENT

Thank you

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Honorary Advisor of Taiwan Telematics Industry Association
Chairman of the ERTICO Automotive Suppliers Sector Platform
Member of the ERTICO Supervisory Board
EU 112-based eCall – Subscriber Identification (MIM)

At present:
Each vehicle will have a SIM embedded in the 112-based in vehicle equipment, containing of
1) IMSI - International mobile subscriber identity -(IUT-T rec. E.212)
2) telephone number (IUT-T rec. E.164)

According to ETSI technical specification 120 to 101 (16. dec. 2014), the 112-based eCall in vehicle equipment (IVE = IVS = UE) shall contain USIM application

Concerns:
• Numbering the resources all organized and assigned in Europe on a national basis
• Life-cycle management from newly installed device to end of life
  (decommissioning, recycling, quarantine, and eventually re-use of the numbering resources)

Ongoing thoughts about Temporary assignment of telephone numbers:
• In vehicle equipment would be in dormant mode
• The mobile network could then assign a temporary number in the HLR

Status May 2016: at present there exists no standard procedure for the temporary assignment of numbers

Under Construction at ETSI:
• ETSI technical committee smart card platform (ETSI TC SCP) working on Technical standards for embedded UICC (eUICC) allow for changing of the service providers, managing a subscription, enabling, disabling or deleting a subscription.
• ETSI technical specifications target date: Q2/ 2016
eCall only MIM (EU 112 eCall - two classes of MIM used)

1. MIM required for eCall is usually covered with a commercial MIM

2. MIM for dormant eCall (can execute eCall only and shall prevent for executing other services will run) differs from regular MIM

   ➡️ The requirement for an eCall ‘only’ service configured IVS are:

   a) The IVS must not attempt to register on any PLMN until and unless it is making an eCall or test call to a designated non-emergency number. The IVS can, following power-up, perform a background scan to identify available networks which are then stored on the USIM.

   b) The IVS must remain registered on a PLMN for at least 1 hour following and eCall / test call, and not longer than 12 hours.

   c) The IVS must de-register from the PLMN within 12 hours following an eCall / test call.

   ➡️ In accordance with TS24.008, the behavior of the eCall ‘only’ configured IVS is determined by the settings on the USIM.

   ➡️ The USIM settings are specified in TS 31.102 clause 5.3.40