ECC Recommendation
(17)04

Numbering for eCall

approved 22 November 2017
amended 16 December 2020
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Explanation</th>
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<tr>
<td>CEPT</td>
<td>Conference of European Postal and Telecommunications Administrations</td>
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<td>ECC</td>
<td>Electronic Communications Committee</td>
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<tr>
<td>eUICC</td>
<td>embedded Universal Integrated Circuit Card</td>
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<td>EU</td>
<td>European Union</td>
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<tr>
<td>GNSS</td>
<td>Global Navigation Satellite System</td>
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<tr>
<td>IMSI</td>
<td>International Mobile Subscriber Identity</td>
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<td>ITU</td>
<td>International Telecommunication Union</td>
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<td>ITU-TSB</td>
<td>Telecommunication Standardization Bureau</td>
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<td>M2M</td>
<td>Machine-to-Machine</td>
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<tr>
<td>MSD</td>
<td>Minimum Set of Data</td>
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<tr>
<td>OEM</td>
<td>Original Equipment Manufacturer</td>
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<td>PSAP</td>
<td>Public Safety Answering Point</td>
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<td>TPS eCall</td>
<td>Third Party Service eCall</td>
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<td>MNO</td>
<td>Mobile Network Operator</td>
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<tr>
<td>OEM</td>
<td>Original Equipment Manufacturer</td>
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<td>PLMN</td>
<td>Public Land Mobile Network</td>
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<tr>
<td>PSAP</td>
<td>Public Safety Answering Point</td>
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<tr>
<td>SIM</td>
<td>Subscriber Identity Module</td>
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<tr>
<td>TPS eCall</td>
<td>Third Party Service eCall</td>
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INTRODUCTION

eCall is a service designed for automotive vehicles to provide quick emergency response in case of a road accident or emergency, anywhere in the European Union. Its aim is to advance European citizens’ protection and safety and to reduce fatalities caused by road accidents as well as related injuries and property loss.

In practice, an “eCall” is a 112 emergency call that can be generated either manually by a vehicle’s occupants, by pressing a dedicated eCall button, or automatically, via activation of in-vehicle sensors when a road accident occurs. When activated, the eCall in-vehicle system establishes a voice connection towards the relevant Public Safety Answering Point (PSAP).

Furthermore, even if no vehicle occupant is able to speak, for instance due to injuries, a Minimum Set of Data (MSD) has been defined [1] and is sent to the PSAP over the voice connection. The MSD includes accurate location information (Global Navigation Satellite System (GNSS) coordinates) on the crash site, the triggering mode (automatic or manual), the vehicle identification number, a timestamp as well as current and, optionally, previous positions. This way, with this information, that is valuable for emergency responders, they can reach the exact location as soon as possible.


The eCall service may be implemented in two different ways [2]:

- The first is referred to as the 112-based eCall service where eCalls are directly routed to the PSAP;
- The second is referred to as third party service supported eCall systems (TPS eCall services) where the first part of the eCall is routed to a service centre of a car manufacturer (Original Equipment Manufacturer – OEM) and the second part is subsequently routed by the TPS service centre to the Public Safety Answering Point (PSAP).

Private eCall provision (i.e. TPS eCall services) is based on commercial agreements among the involved actors, including mobile operators and PSAPs. 112-based eCall is mandatory while the implementation of TPS eCall is optional. In order to ensure continuity of the 112-based eCall service in all Member States throughout the lifetime of the vehicle and to guarantee that the 112-based eCall service is always automatically available, all new type approved M1 and N1 vehicles must be equipped with the 112-based eCall service, regardless of whether or not a vehicle owner opts for a TPS eCall service. When the vehicle is equipped with both eCall systems, the vehicle owner must be able to choose which eCall system to use at all times as these two systems cannot be active simultaneously but one system must always be active.

In order to provide with the above-mentioned eCall functionalities, the vehicles need facilities to communicate with the PSAP. This is carried out by means of mobile networks utilising physical SIM-cards or embedded SIMs (embedded Universal Integrated Circuit Cards – eUICCs). In order to provide the service, E.164 telephone numbers (at least to facilitate call-back) and E.212 International Mobile Subscriber Identity (IMSI) resources are needed.

To the extent national numbers are used for eCall, numbering plan managers and electronic communications network operators and service providers will need to cooperate closely so that a sustainable numbering solution can be implemented to ensure that the burden of providing numbering resources for eCall devices does not fall disproportionately on one, or a few, European countries. Issues around extra-territorial use of numbers and regulatory shopping (i.e. selecting the regulatory regime that is least demanding) need to be resolved in the context of a harmonised approach.

Considering that PSAPs, OEMs and operators have concerns regarding regulatory certainty on the use of numbers for eCall, this Recommendation will provide guidance to administrations on how to address these concerns. This Recommendation will also take into account the use of eUICC technology [3] for eCall.

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1 Category M: used for the carriage of passengers. Category M1: no more than eight seats in addition to the driver seat (mainly, cars)
2 Category N: used for the carriage of goods (trucks): Category N1: having a maximum mass not exceeding 3.5 tonnes (7,700 lb)
Numbering related concerns with eCall also include roaming and so called permanent roaming issues in light of the EU's roaming regulation and life cycle management of numbering resources in the event of a vehicle being written off or reaching end of life naturally (number recycling).

With the introduction of eCall there are other responsibilities than numbering that national authorities should accommodate and that is to ensure that the eCall discriminator/eCall flag is handled by the mobile network operators according the Commission Recommendation 2011/750/EU [4].

This Recommendation is concerned with the numbering aspects of eCall and addresses both implementations and the generic term "eCall" refers to both implementations in this ECC Recommendation.
ECC RECOMMENDATION 17(04) OF 22 NOVEMBER 2017 ON NUMBERING FOR eCALL, AMENDED 16 DECEMBER 2020

“The European Conference of Postal and Telecommunications Administrations,

considering


b) Regulation (EU) No. 531/2012 on roaming on public mobile communications networks within the Union amended by Regulation 2015/2120 [5] and by Regulation 2017/920 [6];

c) ECC Recommendation (11)03 on Numbering and Addressing for Machine-to-Machine (M2M) Communications [7];

d) ECC Recommendation (16)02 on Extra-Territorial Use of E.164 Numbers – High Level Principles of Assignment and Use [8];

e) Commission Recommendation of 8 September 2011 on support for an EU-wide eCall service in electronic communication networks for the transmission of in-vehicle emergency calls based on 112 ('eCalls') – (2011/750/EU) [4];

f) that the numbering solution for eCall is independent of the chosen implementation of eCall;

g) that the implementation of eCall requires SIM or eUICC installed in the vehicle;

h) that the implementation requires E.164 and E.212 numbering resources;

i) that the E.164 and E.212 numbering resources for eCall may include (i) national resources or (ii) global resources (assigned by ITU TSB). National resources may include resources from "home" country (domestic use) or from another country (extra-territorial use or roaming);

j) that global numbering resources (assigned by ITU TSB) or national resources from another country (extra-territorial use or roaming) could be used for addressing eCall devices and these numbering resources need to be provisioned on electronic communications networks in Europe to facilitate call-back from the PSAP to the vehicle;

k) that the OEMs may have signed an agreement with an operator to provide connectivity for eCall for the OEM's vehicles Europe-wide rather than having agreements on a country-by-country basis;

l) the promotion of over-the-air provisioning technology, set out in the European Electronic Communications Code [9], which facilitates the removal of barriers to operator switching;

m) that after the life-cycle of a vehicle, the numbering resources used for eCall should be returned to the number reserve of the relevant numbering assignee;


o) national sovereignty shall be respected, and the applicable laws and regulations of the involved countries shall always be complied with (e.g. authorisation regime, consumer protection and privacy laws).

recommends

that CEPT administrations, when considering E.164 and/or E.212 numbering resources for eCall, should:

1. in cooperation with mobile network operators and OEMs, encourage the use of over-the-air provisioning technology for eCall implementation;

2. make available national numbering resources for eCall;
3. permit the extra-territorial use of their respective assigned national numbering resources for eCall;

4. permit the use of global numbering resources (assigned by ITU TSB) or national numbering resources from another country (extra-territorial use or roaming) within the national territory for addressing eCall devices and encourage operators to provision these numbering resources in their networks to facilitate call-back from the PSAP to the vehicle Europe-wide;

5. where E.164 numbering resources for global services (assigned by ITU TSB) or national numbering resources from another country are used, assignees are responsible and should make reasonable efforts to ensure that the numbers are diallable and facilitate call-back from the PSAP to the vehicle Europe-wide; To assist with the implementation of this recommendation, Annex 1 contains a list of assigned numbering ranges/ sub-ranges, reported by assignees, that are being used for eCall in Europe. This Annex will be updated periodically as required;

6. encourage all operators to notify the ECO of numbering ranges assigned to them which are used, or plan to be used, for eCall;

7. encourage all those operators involved in the conveyance of eCall call-back to commit to charging reasonable tariffs at both wholesale (termination and transit) and retail levels for calls originating from PSAPs towards numbering ranges used for eCall;

8. where there is a risk of exhaustion in national mobile numbering ranges, consider the use of existing E.164 national M2M numbering ranges or introduce a new eCall numbering range;

9. encourage that numbering resources used for eCall services are recovered and recycled after a vehicle reaches end-of-life."

**Note:**

*Please check the Office documentation database [https://docdb.cept.org](https://docdb.cept.org) for the up to date position on the implementation of this and other ECC Recommendations.*
ANNEX 1: LIST OF NOTIFIED NUMBERING RANGES USED FOR ECALL IN EUROPE

The following table contains a list of assigned number ranges (either national or global numbering ranges) used for eCall that have been notified to the ECC by the assignees.

This Annex provides a central reference point for all electronic communications network operators and service providers in Europe seeking information on numbering ranges used for eCall. It is in the interest of assignees to make these notifications and maintain up-to-date information to fully support eCall call-back across all fixed and mobile networks throughout Europe.

This Annex will be updated periodically as required and published in the ECO Documentation Database (https://docdb.cept.org).

Table 1: List of Assigned number ranges

<table>
<thead>
<tr>
<th>Number Type</th>
<th>Assigning Administrator</th>
<th>Number length</th>
<th>Number Range (CC+IC+SN) for global numbers or (CC+NDC+SN) for national numbers</th>
<th>This range is exclusively used for eCall</th>
<th>Assignee</th>
<th>More information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global numbers</td>
<td>ITU</td>
<td>15 digits</td>
<td>+883 130 xxx xxx xxx</td>
<td>Yes/No</td>
<td>Orange</td>
<td>e.g. hyperlink to further information/contact information</td>
</tr>
<tr>
<td>Global numbers</td>
<td>ITU</td>
<td>15 digits</td>
<td>+882 39x xxx xxx xxx</td>
<td>Yes/No</td>
<td>Vodafone</td>
<td></td>
</tr>
<tr>
<td>Global numbers</td>
<td>ITU</td>
<td>15 digits</td>
<td>+882 37x xxx xxx xxx</td>
<td>Yes/No</td>
<td>AT&amp;T</td>
<td></td>
</tr>
</tbody>
</table>
ANNEX 2: LIST OF REFERENCES

This annex contains the list of relevant reference documents.

[1] CEN Standard EN-15722 defines the minimum set of data (MSD) which is sent to the PSAP for pan-European eCall


[10] ITU Operational Bulletin No. 1155 published on 01 September 2018