



ECC Recommendation

(17)04

Numbering for eCall

approved 22 November 2017

amended 16 December 2020

LIST OF ABBREVIATIONS

Abbreviation	Explanation
CEPT	Conference of European Postal and Telecommunications Administrations
ECC	Electronic Communications Committee
eUICC	embedded Universal Integrated Circuit Card
EU	European Union
GNSS	Global Navigation Satellite System
IMSI	International Mobile Subscriber Identity
ITU	International Telecommunication Union
ITU-TSB	Telecommunication Standardization Bureau
M2M	Machine-to-Machine
MSD	Minimum Set of Data
OEM	Original Equipment Manufacturer
PSAP	Public Safety Answering Point
TPS eCall	Third Party Service eCall
MNO	Mobile Network Operator
OEM	Original Equipment Manufacturer
PLMN	Public Land Mobile Network
PSAP	Public Safety Answering Point
SIM	Subscriber Identity Module
TPS eCall	Third Party Service eCall

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.

Regulation 2015/758 of the European Parliament and of the Council amending Directive 2007/46/EC [2] requires the deployment of the eCall in-vehicle system in all new type approved passenger cars (M1¹) and light duty vehicles (N1²) from 31 March 2018.

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.

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

- a) Regulation (EU) 2015/758 of the European Parliament and of the Council of 29 April 2015 [2] concerning type-approval requirements for the deployment of the eCall in-vehicle system based on the 112 service and amending Directive 2007/46/EC of the European Parliament and of the Council of 5 September 2007 establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles;
- 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;
- n) notes from the Telecommunications Standardisation Bureau of the ITU contained ITU Operational Bulletin 1155 [10] and in ITU TSB Circular 249 [11] on global numbers used for the European eCall service;
- 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> 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

Number Type	Assigning Administrator	Number length	Number Range (CC+IC+SN) for global numbers or (CC+NDC+SN) for national numbers	This range is exclusively used for eCall	Assignee	More information
Global numbers	ITU	15 digits	+883 130 xxx xxx xxx	Yes/No	Orange	e.g. hyperlink to further information/contact information
Global numbers	ITU	15 digits	+882 39x xxx xxx xxx	Yes/No	Vodafone	
Global numbers	ITU	15 digits	+882 37x xxx xxx xxx	Yes/No	AT&T	

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
- [2] Regulation (EU) 2015/758 of the European Parliament and of the Council of 29 April 2015 concerning type-approval requirements for the deployment of the eCall in-vehicle system based on the 112 service and amending Directive 2007/46/EC
- [3] Smart Cards; Embedded UICC; Requirements Specification (ETSI TS 103 383 V13.2.0 (May 2016)) and GSMA Remote Provisioning Architecture for Embedded UICC (eUICC) Technical Specification: Version 3.1 (May 2016)
- [4] Commission Recommendation 2011/750/EU 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')
- [5] Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation (EU) No 531/2012 on roaming on public mobile communications networks within the Union
- [6] Regulation (EU) 2017/920 of the European Parliament and of the Council of 17 May 2017 amending Regulation (EU) No 531/2012 as regards rules for wholesale roaming markets
- [7] ECC Recommendation (11)03 on Numbering and Addressing for Machine-to-Machine (M2M) Communications
- [8] ECC Recommendation (16)02 on Extra-Territorial Use of E.164 Numbers – High Level Principles of Assignment and Use
- [9] Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (Recast)Text with EEA relevance
- [10] ITU Operational Bulletin No. 1155 published on 01 September 2018
- [11] ITU TSB Circular No. 249 published on 12 May 2020