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Intelligent Transport Systems - eSafety - eCall Interface for PSAPs to access cargo and dangerous goods databases

Systèmes de transport intelligents - eSafety - Interface eCall entre PSAPS et bases de données sur le fret et les marchandises dangereuses

Intelligente Verkehrssysteme - eSicherheit - eCall Schnittstelle zwischen PSAPS und Gefahrgut- oder Transportdatenbanken

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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European foreword

This document (CEN/TS 17642:2021) has been prepared by Technical Committee CEN/TC 278 "Intelligent Transport Systems", the secretariat of which is held by NEN.

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Introduction

This document is a companion document to CEN/TS 16405, Intelligent transport systems - eCall - Additional data concept specification for heavy goods vehicles.

eCall (an emergency call generated either automatically via activation of in-vehicle sensors or manually by the vehicle occupants; which, when activated provides notification and relevant location information to the most appropriate Public Safety Answering Point, by means of mobile wireless communications networks, and carrying a defined standardized minimum set of data (MSD) notifying that there has been an incident), as defined in EN 16072, EN 16062, EN 15722, and EN 16454, became a regulated requirement (for new model vehicles of Category M1 and N1 [cars and light vans]) under European regulation as from April 2018.

As a system, eCall is not limited to vehicles of named categories and application in other categories are foreseen and actively supported by additional standards. One of these is CEN/TS 16405 which focuses on implementing eCall in commercial vehicles (Category N2 and N3), both highlighting triggering issues and offering means to include cargo related information inside the MSD. Named standard contains a so called additional data concept that allows for properly defined information elements being inserted in the MSD. The so called 'Schema A' defines means to have information about the cargo directly inside the MSD, Schema B (also part of CEN/TS 16405) offers a mechanism to inform the PSAP about where and how to retrieve information of the cargo from a remote source. The underlying document focuses on this last Schema.

When a PSAP receives an eCall from a vehicle, the PSAP system will "intercept" the MSD and decode its contents for further use in the emergency process. As long as the information can be used directly (e.g. number of occupants, direction of travel, last known location) this can be displayed to the operator. However, the MSD does contain elements of data that trigger a lookup of information. The basic MSD contains the VIN number that should be looked up using EUCARIS to get the most up to date vehicle registration information. If the MSD contains additional data, the PSAP system needs to apply the correct decoding template which results in either directly usable information (like the cargo information in Schema A) or information that again triggers a lookup, or both.

As previously mentioned, CEN/TS 16405 Schema B offers means to inform the PSAP about how and where to retrieve the cargo information, but this was purposely left flexible. There is however a need, or at least a strong wish, to standardize the way cargo information can be retrieved from a remote source. This document addresses this need.

The European Commission has launched a legislative process to harmonize the electronic freight transport information (eFTI) and to provide the legislative framework and a basic architecture for the exchange of freight transport information. The access of PSAPs to freight information as the information about the loaded dangerous goods should follow the future eFTI standards to avoid the handling of several interfaces of authorities to freight data.

The goal of this document is to prepare the eCall interfaces for the new eFTI standards and define prerequisites for the eFTI standards that need to be fulfilled by eFTI to allow the access to the necessary information for eCall.

1 Scope

Within the context of *112-eCall* (operating requirements defined in EN 16072), this document defines specifications for the provision of *112-eCall* for *regulated commercial vehicles,* including *rigid body trucks* and variants thereof, *prime mover* and trailer combinations (sometimes called "semi's", *road trains* [one *prime mover* with multiple trailers]) and other *regulated commercial vehicles* (for example vans carrying medical supplies or radioactive material).

The work of CEN/TS 16405 is adopted and extended in this document. (A revised version of CEN/TS 16405 will remain the principal reference document for the content and definition of the *commercial vehicle optional additional data* set).

As with the existing provisions for *112-eCall* for Category M1/N1 vehicles, these are specified within the paradigm of being *OEM* fit equipment supplied with new vehicles.

The scope of this specification is limited to the provision of *eCall* from a *commercial vehicle prime mover /rigid body truck)* designed for conveying cargo. (UNECE Category N).

This document specifies the requirements for the use of *112-eCall* by a *commercial vehicle prime mover /rigid body truck* and defines the interface between the PSAPs and an external transport database.

Unless superseded by European Regulation at some future date, all data schemas specified herein and defined in a revision of CEN/TS 16405 are "*Optional Additional Data"* (OAD) concepts, as enabled in accordance with EN 15722:2020 as part of the *minimum set of data* As *OAD* they, and the elements within them, are, by definition, "optional" with use at the discretion of the operator of the vehicle.

This document defines how eCall for commercial vehicles is expected to interact with the future eFTI standards and the prerequisites for these standards to allow the access to the relevant freight information for the PSAPSs in case of an eCall.

NOTE 1 The provision of *eCall* from *IVS* located within trailers is not included in this document, but could be the subject of a further standards deliverable.

NOTE 2 The provision of *eCall* for vehicles via the aftermarket (post sale and registration) will be the subject of other work, and in respect of the operational requirements for any such aftermarket solutions for *commercial vehicles,* will use this document as a principle reference point.

NOTE 3 The *112-eCall* paradigm involves a direct call from the vehicle to the most appropriate *PSAP* (third party service provision by comparison, involves the support of an intermediary third party service provider before the call is forwarded to the *PSAP*). The specifications herein relate only to the provision of *112-eCall* or *IMS-112-eCall,* and do not provide specifications for third party service provision of *eCall,* although in the case of *112-eCall* for *commercial vehicles*, links to third party provision of service aspects (such as cargo contents) could be required.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 15722:2020, *Intelligent transport systems - ESafety - ECall minimum set of data*

EN 16072:2015, *Intelligent transport systems - ESafety - Pan-European eCall operating requirements*

EN 16062:2015, *Intelligent transport systems - ESafety - eCall high level application requirements (HLAP) using GSM/UMTS circuit switched networks*

EN 16454:2015, *Intelligent transport systems - ESafety - ECall end to end conformance testing*

CEN/TS 16405:2017, *Intelligent transport systems - Ecall - Additional data concept specification for heavy goods vehicles*

CEN/TS 17240:2018, *Intelligent transport systems - ESafety - ECall end to end conformance testing for IMS packet switched based systems*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
112-eCall
'eCall' provided by a 'Teleservice 12' mobile communication network, as defined in EN 16072:2015 and EN 16062:2015 or CEN/TS 17184

3.2
Agreement concerning the International Carriage of Dangerous Goods by Road
ADR
European agreement concerning the international carriage of *dangerous goods* by road

Note 1 to entry: The French name is Accord Européen Relatif Au Transport International Des Marchandises Dangereuses Par Route (ADR).

3.3
CAN-BUS
data-bus standard for vehicles designed to allow microcontrollers and devices to communicate with each other in applications without a host computer

3.4
commercial vehicle
mechanically propelled road vehicle (vehicle type N1, N2 or N3) that is of a construction primarily suited for the carriage of goods or burden of any kind (not including people) and travelling laden on a road

Note 1 to entry: This includes vehicles designed or adapted to have a maximum weight exceeding 3 500 tonnes, but explicitly excludes busses or other vehicles designed and constructed for the carriage of passengers (i.e. vehicle types M1, M2 or M3).

Note 2 to entry: See also 3.16 *Regulated Commercial Vehicle.*

3.5
dangerous goods
categories of goods carried by road as stated in the 'Agreement concerning the International Carriage of Dangerous Goods by Road' (ADR) as dangerous; these are characterized as articles or substances which are capable of posing a significant risk to health, safety or to property when transported

Note 1 to entry: The exact categories can be found in the 'Agreement concerning the International Carriage of Dangerous Goods by Road' (ADR).