

<b>TNI</b>	<b>Inteligentné dopravné systémy Elektronická bezpečnosť Časť 1: Rozšírenie systému eCall na iné kategórie vozidiel</b>	<b>TNI CEN/TR 17249-1</b>  01 8611
------------	---	--

Intelligent transport systems - eSafety - Part 1: Extending eCall to other categories of vehicle

Táto technická normalizačná informácia obsahuje anglickú verziu CEN/TR 17249-1:2018.  
This Technical standard information includes the English version of CEN/TR 17249-1:2018.

Táto technická normalizačná informácia bola oznámená vo Vestníku ÚNMS SR č. 02/19

**128189**

**TECHNICAL REPORT****CEN/TR 17249-1****RAPPORT TECHNIQUE****TECHNISCHER BERICHT**

September 2018

ICS 03.220.20; 35.240.60

English Version

## Intelligent transport systems - eSafety - Part 1: Extending eCall to other categories of vehicle

Intelligente Verkehrssysteme - eSicherheit - Teil 1:  
Erweiterter eCall für andere Fahrzeugkategorien

This Technical Report was approved by CEN on 1 July 2018. It has been drawn up by the Technical Committee CEN/TC 278.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## Contents

Page

European foreword.....	5
Introduction .....	6
1 Scope .....	8
2 Normative references.....	8
3 Terms and definitions .....	9
4 Symbols and abbreviations .....	15
5 Recommendations .....	17
6 Categories of vehicles .....	19
6.1 Context.....	19
6.2 Category L – Motor vehicles with less than four wheels .....	21
6.3 Category M - Power-driven vehicles having at least four wheels and used for the carriage of passengers.....	22
6.3.1 “Category M1” .....	22
6.3.2 “Category M2” .....	22
6.3.3 “Category M3” .....	22
6.3.4 Coach and bus sub-Categorization.....	22
6.4 Category N - Power-driven vehicles having at least four wheels and used for the carriage of goods .....	23
6.4.1 “Category N1” .....	23
6.4.2 “Category N2” .....	23
6.4.3 “Category N3” .....	23
6.5 Category O - Trailers (including semi-trailers).....	23
6.5.1 “Category O1” .....	23
6.5.2 “Category O2” .....	23
6.5.3 “Category O3” .....	23
6.5.4 “Category O4” .....	24
6.5.5 Additional information .....	24
6.6 “Category T” motorized, wheeled or tracked agricultural or forestry vehicle .....	24
6.7 “Category R - Agricultural trailer” .....	25
6.8 “Category S - Interchangeable towed equipment” .....	25
6.9 UNECE s2.7 “Non-road mobile machinery” .....	25
6.10 UNECE s.2.8.2-3 “Category G - off-road vehicles” .....	25
6.11 UNECE s.8.4 Combined designation .....	26
6.12 Definition of type of bodywork (only for complete/completed vehicles).....	26
6.13 PT1507 recommendation re vehicle Categorization .....	27
7 Evolution of mobile cellular telephone networks .....	27
7.1 Context .....	27
7.2 Future eCall standards should be primarily based on IMS .....	29
8 Common approach for additional categories of vehicle .....	35
8.1 General considerations for a common approach .....	35
8.2 MSD Variants for IMS and CS environments.....	36
8.2.1 General.....	36
8.2.2 3GPP Release 14 provisions .....	37

8.2.3	Process in IVS .....	37
8.3	Separate TS for different categories .....	39
9	Triggering and data requirements for all categories .....	41
9.1	Triggering requirements (general) .....	41
9.2	Data requirements (general) .....	41
9.3	Location of off-board information .....	42
10	Technical Specifications/Standards recommended to widen the scope of eCall to include HGVs and other commercial vehicles .....	42
10.1	UNECE Categories for commercial cargo vehicles .....	42
10.2	Principal types of HGV accidents .....	43
10.2.1	Collision .....	43
10.2.2	Vehicle venturing off the road .....	44
10.2.3	Fire .....	44
10.2.4	Loss of cargo/ emission .....	44
10.2.5	Loss of physical connection between prime mover/ fixed body truck/ van and trailer(s) .....	44
10.2.6	Roll-over .....	44
10.2.7	Triggering requirements for HGVs .....	45
10.3	CEN/TS 16405 .....	45
10.3.1	General .....	45
10.3.2	CEN/TS 16405 compared to this study .....	45
10.3.3	Resultant OADs within the MSD .....	48
10.3.4	An issue for further specification .....	48
10.3.5	Unified cargo list .....	48
10.3.6	Structured cargo list .....	48
10.4	Data requirements for HGVs .....	49
10.4.1	General .....	49
10.4.2	Technical specifications .....	49
11	Technical Specifications/Standards are recommended to widen the scope of eCall to include coaches and some categories of bus .....	49
11.1	Context .....	49
11.2	Category of vehicles .....	50
11.3	Use cases .....	50
11.4	Specification of the coaches and busses use case OAD .....	51
11.4.1	General .....	51
11.4.2	Technical specifications .....	51
12	Technical Specifications/Standards are recommended to widen the scope of eCall to include agricultural and forestry vehicles .....	52
12.1	Agricultural/forestry vehicle context .....	52
12.2	Accidents with Agricultural/forestry vehicles .....	53
12.2.1	General Summary .....	53
12.2.2	Principal types of agricultural/forestry vehicle accident .....	55
12.2.3	Other measures to generate eCalls for agricultural/forestry vehicles .....	57
12.2.4	Recommendations regarding agricultural and forestry vehicles .....	57
12.3	Agricultural/forestry vehicle and implement categorization .....	57
12.4	Device classes defined by ISOBUS .....	58
12.5	Triggering Requirements .....	59
12.5.1	General .....	59
12.5.2	Technical specifications .....	60
13	Technical Specifications/Standards are recommended to widen the scope of eCall to include P2WVs .....	60

**CEN/TR 17249-1:2018 (E)**

<b>13.1</b>	<b>Recommendations of Project I_HeERO .....</b>	<b>60</b>
<b>13.2</b>	<b>Context and Category L3 vehicles.....</b>	<b>60</b>
<b>13.3</b>	<b>Category L1 vehicles.....</b>	<b>60</b>
<b>13.3.1</b>	<b>Demographics.....</b>	<b>60</b>
<b>13.3.2</b>	<b>Usage.....</b>	<b>60</b>
<b>13.3.3</b>	<b>Multi-vehicle accidents .....</b>	<b>61</b>
<b>13.3.4</b>	<b>Single vehicle accidents .....</b>	<b>61</b>
<b>13.3.5</b>	<b>Moped / Scooter security, theft and vandalism.....</b>	<b>61</b>
<b>13.3.6</b>	<b>Technical considerations for category L1 vehicles.....</b>	<b>61</b>
<b>13.4</b>	<b>Implementation .....</b>	<b>62</b>
<b>13.5</b>	<b>UNECE Category L vehicles.....</b>	<b>63</b>
<b>13.6</b>	<b>Nature of P2WV accidents.....</b>	<b>63</b>
<b>13.6.1</b>	<b>Accident statistics, P2WV and rider characteristics, fatalities and types of injury .....</b>	<b>63</b>
<b>13.7</b>	<b>P2W accident characteristics.....</b>	<b>64</b>
<b>13.8</b>	<b>Requirements related to eCall triggering for P2WV.....</b>	<b>65</b>
<b>13.9</b>	<b>Dialogue with riders of affected vehicle .....</b>	<b>66</b>
<b>13.10</b>	<b>Manual triggering.....</b>	<b>68</b>
<b>13.11</b>	<b>eCall or eMessage .....</b>	<b>69</b>
<b>13.12</b>	<b>Glonass experience of false calls .....</b>	<b>69</b>
<b>13.13</b>	<b>Tricycles and Quadricycles.....</b>	<b>69</b>
<b>13.14</b>	<b>Technical specifications.....</b>	<b>71</b>
<b>13.15</b>	<b>Vulnerable road users .....</b>	<b>72</b>
<b>14</b>	<b>Other relevant eCall evolution .....</b>	<b>72</b>
<b>15</b>	<b>Other user Categories that could benefit from eCall .....</b>	<b>73</b>
<b>16</b>	<b>Summary .....</b>	<b>74</b>
<b>17</b>	<b>Considerations of appropriateness of direct 112-eCall and TPSP eCall for additional classes of vehicle .....</b>	<b>78</b>
<b>Annex A</b>	<b>(informative) Table of Timings from EN 16062.....</b>	<b>79</b>
<b>Annex B</b>	<b>(informative) Comparison I_HeERO/PT1507 HGV requirements with CEN/TS 16405 ...</b>	<b>82</b>
<b>Annex C</b>	<b>(informative) I_HeERO TR M23 – Use Cases P2WV eCall.....</b>	<b>87</b>
<b>C.1</b>	<b>Conclusions (I_HeERO TR M23 – Use Cases P2WV eCall) .....</b>	<b>87</b>
<b>C.2</b>	<b>Relationship between collision and injury severity.....</b>	<b>87</b>
<b>Bibliography</b>	<b>.....</b>	<b>89</b>

## European foreword

This document (CEN/TR 17249-1:2018) has been prepared by Technical Committee CEN/TC 278 “Intelligent transport systems”, the secretariat of which is held by NEN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

The present series is composed with the following parts:

- CEN/TR 17249-1, *Intelligent transport systems - eSafety - Part 1: Extending eCall to other categories of vehicle;*
- FprCEN/TS 17249-2, *Intelligent transport systems - eSafety - Part 2: eCall for HGVs and other commercial vehicles;*
- FprCEN/TS 17249-3, *Intelligent transport systems - eSafety - Part 3: eCall for Coaches and buses;*
- FprCEN/TS 17249-4, *Intelligent transport systems - eSafety - Part 4: eCall for UNECE Category T, R, S agricultural/forestry vehicles;*
- FprCEN/TS 17249-5, *Intelligent transport systems - eSafety - Part 5: eCall for UNECE Category L1 and L3 powered two-wheeled vehicles, and*
- FprCEN/TS 17249-6, *Intelligent transport systems - eSafety - Part 6: eCall for UNECE Category L2, L4, L5, L6 and L7 tricycles and quadricycles.*

**CEN/TR 17249-1:2018 (E)****Introduction**

The EU ICT “Rolling Plan” issued each year by DG MOVE has for some years recognized that *eCall*, as currently regulated, services only new model vehicles of Categories M1 and N1 (cars and light vans) and should be extended to cover other categories of vehicles. The 2017 ICT Rolling Plan states:

*“Standards for next generation networks are also expected in 2017 for eCall, as well as standards for other users than M1 and N1 vehicles (lightweight vehicles for the carriage of goods or passengers)...”*

*“ACTION 1 SDOs to develop technical specification and standards for the implementation of eCall in-vehicles of categories other than M1 and N1 and for other user types, taking into account requirements included within type-approval regulation and ongoing activities in this area (pilots, the Connecting Europe Facility (CEF), etc).”*

*“The next generation of standards on eCall service should take into account future developments in mobile communication networks and the IP environment, in particular LTE and IPv6 networks. Standards for the extension to other vehicles types and services should also be developed — such as heavy duty vehicles, power two wheelers or hazardous goods tracking, and other classes of vulnerable road users, taking into account requirements from type-approval regulation and the results of other initiatives in this area (pilots, the CEF, etc).”*

In order to achieve its objectives, the European Commission has funded a CEN Project team, PT 0278 1507, to further this objective:

*“This call for experts applies to the preparation of deliverable(s) associated with the following task(s) as defined in the Project Plan:*

- A Technical Report discussing the desirability, feasibility and problems associated with eCall for a particular class of road user*
- A Technical Specification of parameters that can provide eCall High Level operating requirements and application protocols to support service for other classes of user...”*

This proposal addresses the EC “Rolling Plan” for ITS implementation in respect of eCall, notably:

*“It is also required to analyse the need and develop standards if needed for the extension to other vehicles types and services”*

*Some of these additional classes are listed in article 12 of the eCall type-approval regulation, “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”, while other potential users have not yet been classified*

*The additional classes of road user included in this proposal include:*

- heavy goods vehicles*
- busses and coaches*
- agricultural tractors*
- P2WV (Moped/motorcycle drivers/passengers)*

This document addresses the requirement of the remit to CEN TC278 PT1507 for a “Technical Report discussing the desirability, feasibility and problems associated with eCall for a particular category of road user” and the content of this deliverable is the first of 6 associated documents parts. This Technical Report discusses the desirability, feasibility and problems associated with eCall for the identified additional categories of vehicle and provides the context and base assumption for FprCEN/TS 17249-2,

FprCEN/TS 17249-3, FprCEN/TS 17249-4, FprCEN/TS 17249-5 and FprCEN/TS 17249-6 which provide technical specifications to support eCall for these additional categories of vehicles over both circuit switched and packet switched networks.



**CEN/TR 17249-1:2018 (E)****1 Scope**

This document discusses the desirability, feasibility and problems associated with *eCall* for the following categories of road user:

- a) HGV/commercial vehicles;
- b) coaches and busses;
- c) agricultural and forestry vehicles;
- d) powered 2 wheeled vehicles;
- e) tricycles and quadricycles.

NOTE Regulation issues are outside the scope of this document and the associated Technical Specification (although, where appropriate regulation(s) may reference the requirements of this deliverable).

**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 15722:2015, *Intelligent transport systems – Esafety - ECall minimum set of data*

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

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

EN 16102, *Intelligent transport systems – eCall - Operating requirements for third party support*

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

EN 16454, *Intelligent transport systems – Esafety - ECall end to end conformance testing*

FprCEN/TS 17184, *Intelligent transport systems – eSafety - eCall High level application Protocols (HLAP) using IMS packet switched networks*

FprCEN/TS 17249-2, *Intelligent transport systems - eSafety - Part 2: eCall for HGVs and other commercial vehicles*

FprCEN/TS 17249-3, *Intelligent transport systems - eSafety - Part 3: eCall for Coaches and buses*

FprCEN/TS 17249-4, Intelligent transport systems - eSafety - Part 4: eCall for UNECE Category T, R, S agricultural/forestry vehicles

FprCEN/TS 17249-5, Intelligent transport systems - eSafety - Part 5: eCall for UNECE Category L1 and L3 powered two-wheeled vehicles

FprCEN/TS 17249-6, Intelligent transport systems - eSafety - Part 6: eCall for UNECE Category L2, L4, L5, L6 and L7 tricycles and quadricycles

ISO 21217:2014, *Intelligent transport systems -- Communications access for land mobiles (CALM) -- Architecture*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**