# TECHNICAL REPORT RAPPORT TECHNIQUE TECHNISCHER BERICHT

## FINAL DRAFT FprCEN/TR 17249-1

March 2018

**ICS** 

© 2018 CEN

### **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 draft Technical Report is submitted to CEN members for Vote. 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.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

**Warning**: This document is not a Technical Report. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a Technical Report.



EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

	Cont	ents	Page	
	Europ	ean foreword	5	
	Introd	luction	gences       8         stitions       9         poreviations       15         ons       17         hicles       19         tor vehicles with less than four wheels       21         ower-driven vehicles having at least four wheels and used for the engers       22         ub-Categorization       22         ower-driven vehicles having at least four wheels and used for the s       23         s       23	
	1	Scope	8	
	2	Normative references	8	
	3			
	4			
	5			
	_			
got	√6 6.1			
	6.2			
2	6.3		41	
ż	0.3	5 <i>i</i>	22	
≓	6.3.1			
ğ	6.3.2			
3	0.3.3	0 7		
7	6.3.4 6.4	0	22	
>			00	
eviev				
rev	6.4.1			
	6.4.2	"Category N2"		
	6.4.3	"Category N3"		
3	6.5	Category 0 - Trailers (including semi-trailers)		
	6.5.1	"Category 01"		
7	6.5.2	"Category 02"		
$\frac{1}{2}$	6.5.3	"Category 03"		
_	6.5.4	"Category 04"		
ż	6.5.5	Additional information		
5	6.6	"Category T" motorized, wheeled or tracked agricultural or forestry vehicle		
	6.7	"Category R - Agricultural trailer"		
	6.8	"Category S - Interchangeable towed equipment"		
	6.9	UNECE s2.7 "Non-road mobile machinery"		
	6.10	UNECE s.2.8.2-3 "Category G - off-road vehicles"		
	6.11	UNECE s.8.4 Combined designation		
	6.12	Definition of type of bodywork (only for complete/completed vehicles)		
	6.13	PT1507 recommendation re vehicle Categorization	27	
	7	Evolution of mobile cellular telephone networks	27	
	7.1	Context		
	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		
	8.2	MSD Variants for IMS and CS environments		
	8.2.1	General		
	8.2.2	3GPP Release 14 provisions		
	<b>-</b>			

8.2.3	Process in IVS	
8.3	Separate TS for different categories	39
9	Triggering and data requirements for all categories	41
9.1	Triggering requirements (general)	
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	
10.1	UNECE Categories for commercial cargo vehicles	42
10.2	Principal types of HGV accidents	
	Collision	
	Vehicle venturing off the road	
	Fire	
	Loss of cargo/ emission	44
10.2.5	Loss of physical connection between prime mover/ fixed body truck/ van and	
1026	trailer(s)	
	Roll-over	
10.2.7 10.3	Triggering requirements for HGVsCEN/TS 16405	
	General	
	CEN/TS 16405 compared to this study	
	Resultant OADs within the MSD	
	An issue for further specification	
	Unified cargo list	
	Structured cargo list	
	Data requirements for HGVs	
	General	
10.4.2	Technical specifications	49
11	Technical Specifications/Standards are recommended to widen the scope of <i>eCall</i> to	
	include coaches and some categories of bus	49
11.1	Context	
11.2	Category of vehicles	
11.3	Use cases	
11.4	Specification of the coaches and busses use case OAD	
11.4.1	General	51
11.4.2	Technical specifications	51
12	Technical Specifications/Standards are recommended to widen the scope of <i>eCall</i> to	
12	include agricultural and forestry vehicles	52
12.1	Agricultural/forestry vehicle context	
12.2	Accidents with Agricultural/forestry vehicles	
	General Summary	
	Principal types of agricultural/forestry vehicle accident	
12.2.3		
	Recommendations regarding agricultural and forestry vehicles	
12.3	Agricultural/forestry vehicle and implement categorization	
12.4	Device classes defined by ISOBUS	
12.5	Triggering Requirements	59
	General	
12.5.2	Technical specifications	60
13	Technical Specifications/Standards are recommended to widen the scope of <i>eCall</i> to	
	include P2WVs	60

### FprCEN/TR 17249-1:2018 (E)

	13.1	Recommendations of Project I_HeERO	. 60
	13.2	Context and Category L3 vehicles	
	13.3	Category L1 vehicles	. 60
	13.3.1	Demographics	. 60
	13.3.2	Usage	. 60
	13.3.3	Multi-vehicle accidents	. 61
	13.3.4	Single vehicle accidents	. 61
	13.3.5	Moped / Scooter security, theft and vandalism	. 61
	13.3.6	Technical considerations for category L1 vehicles	. 61
	13.4	Implementation	. 62
	13.5	UNECE Category L vehicles	. 63
	13.6	Nature of P2WV accidents	
	13.6.1	Accident statistics, P2WV and rider characteristics, fatalities and types of injury	
	13.7	P2W accident characteristics	
	13.8	Requirements related to eCall triggering for P2WV	
١.	13.9	Dialogue with riders of affected vehicle	
7	13.10	Manual triggering	
ز د		eCall or eMessage	
2		Glonass experience of false calls	
7 7		Tricycles and Quadricycles	
1		Technical specifications	
•	13.15	Vulnerable road users	. 72
	14	Other relevant eCall evolution	. 72
Ì	<b>15</b>	Other user Categories that could benefit from eCall	. 73
	16	Summary	. 74
1121	17	Considerations of appropriateness of direct 112-eCall and TPSP eCall for additional classes of vehicle	. 78
	Annex	A (informative) Table of Timings from EN 16062	
1		B (informative) Comparison I_HeERO/PT1507 HGV requirements with CEN/TS 16405	
1			
1	Annex	C (informative) I_HeERO TR M23 - Use Cases P2WV eCall	
1	<b>C.1</b>	Conclusions (I_HeERO TR M23 - Use Cases P2WV eCall)	. 87
1	<b>C.2</b>	Relationship between collision and injury severity	. 87
1	Biblio	pranhy	. 89

### **European foreword**

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

This document is currently submitted to the Vote on TR.

The present series is composed with the following parts:

- FprCEN/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<sup>1</sup>, Intelligent transport systems eSafety Part 4: eCall for UNECE Category T, R, S agricultural/forestry vehicles;
- FprCEN/TS 17249-5<sup>1</sup>, Intelligent transport systems eSafety Part 5: eCall for UNECE Category L1 and L3 powered two-wheeled vehicles, and
- FprCEN/TS 17249-6<sup>1</sup>, Intelligent transport systems eSafety Part 6: eCall for UNECE Category L2, L4, L5, L6 and L7 tricycles and quadricycles.

5

Under preparation.

### 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 invehicles 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  $^{2}$ , FprCEN/TS 17249-5 $^{2}$  and FprCEN/TS 17249-6 $^{2}$  which provide technical specifications to support eCall for these additional categories of vehicles over both circuit switched and packet switched networks.

<sup>&</sup>lt;sup>2</sup> Under preparation.