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Intelligent transport systems — ESafety — ECall additional optional data set for heavy goods vehicles eCall

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National foreword

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TECHNICAL REPORT

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CEN/TR 16405

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ICS 03.220.20; 35.240.60

English Version

Intelligent transport systems - ESafety - ECall additional optional data set for heavy goods vehicles eCall

Systèmes de Transports Intelligents - ESafety - Ensemble optionnel de données additionnelles ECall pour l'ECall des poids Lourds

Intelligente Transportsysteme - eSicherheit - Zusätzliche optionale Datenmenge im Schwerkraftverkehr für eCall

This Technical Report was approved by CEN on 30 July 2012. It has been drawn up by the Technical Committee CEN/TC 278.

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Foreword

This document (CEN/TR 16405:2013) has been prepared by Technical Committee CEN/TC 278 “Road transport and traffic telematics”, 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 [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

Introduction

An *eCall* is an emergency call generated either automatically via activation of in-vehicle sensors or manually by the *vehicle occupants*; when activated, to provide notification and relevant location information to the most appropriate Public Safety Answering Points (PSAP), by means of *mobile wireless communications networks* and carries a defined standardised Minimum Set of Data (MSD), notifying that there has been an incident that requires response from the emergency services and establishes an audio channel between the occupants of the vehicle and the most appropriate PSAP.

The MSD (specified in EN 15722) contains static information regarding the vehicle, dynamic information regarding its location, direction of travel etc., at the time of the incident, and makes provision for additional data to be provided.

This Technical Report provides potential specification for an optional additional data concept for HGVs to provide dynamic data about the load that it is carrying at the time of the incident that triggered the *eCall*, with specific emphasis on identification of dangerous goods. Two variants are provided, one (schema A) for use where dangerous goods (ADR classified); the second variant (schema B) is for use where no ADR classified load is known.

It is the intention that the specification in this Technical Report is tested in demonstration projects (such as HeERO) with a view to becoming the basis for a future European or International Standard.

NOTE The communications media protocols and methods for the transmission of the eCall message are not specified in this Technical Report.

Additional data concepts may also be transferred, and any such data concepts should be registered using a data registry as defined in EN ISO 24978.

1 Scope

This Technical Report defines an additional data concept that may be transferred as an 'optional additional data concept' as defined in 'Block 12' of CEN 15722 eCall MSD, that may be transferred from a goods vehicle to a PSAP in the event of a crash or emergency via an *eCall* communication session. Two variants are provided, one (schema A) for use where dangerous goods (ADR classified); the second variant (schema B) is for use where no ADR classified load is known.

NOTE The communications media protocols and methods for the transmission of the eCall message are not specified in this Technical Report.

Additional data concepts may also be transferred, and any such data concepts should be registered using a data registry as defined in EN ISO 24978.

2 Conformance

In order to claim conformance with this deliverable, communication is to be established using accepted wireless communication standards, and it is to be able to demonstrate that the MSD transferred together with any standardised optional data elements defined herein comply with the specifications of this Technical Report, to the extent that such data is available from the vehicle.

3 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 15722:2011, *Intelligent transport systems — eSafety — eCall minimum set of data (MSD)*

EN 16062, *Intelligent transport systems — eSafety — eCall high level application requirements (HLAP)*

EN 16072, *Intelligent transport systems — eSafety — Pan European eCall operating requirements*

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

EN ISO 24978, *Intelligent transport systems — ITS Safety and emergency messages using any available wireless media — Data registry procedures (ISO 24978)*

ISO/IEC 8825-2, *Information technology — ASN.1 encoding rules: Specification of Packed Encoding Rules (PER)*

4 Terms and definitions

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

4.1
112
single European emergency call number supporting Teleservice 12

[SOURCE: ETSI TS 122 003]

4.2
ASN.1
abstract syntax notation one as specified in the various parts of ITU Recs 8824 and 8825 (ISO 8824 and 8825 various parts)

4.3
eCall
emergency call generated either automatically via activation of in-vehicle sensors or manually by the *vehicle occupants*; when activated it provides notification and relevant location information to the most appropriate PSAP, by means of *mobile wireless communications networks*, carries a defined standardised MSD notifying that there has been an incident that requires response from the emergency services, and establishes an audio channel between the occupants of the vehicle and the *most appropriate PSAP*

4.4
dangerous goods
categories of goods carried by road defined by the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) as dangerous; these are characterised as articles or substances which are capable of posing a significant risk to health, safety or to property when transported

4.5
goods vehicle
GV
mechanically propelled road vehicle that is of a construction primarily suited for the carriage of goods or burden of any kind and travelling on a road laden

4.6
heavy goods vehicle
HGV
mechanically propelled road vehicle that is of a construction primarily suited for the carriage of goods or burden of any kind and designed or adapted to have a maximum weight exceeding 3,500 kilograms when in normal use and travelling on a road laden

4.7
uniform resource identifier
URI
string of characters used to identify a name or a resource on the Internet

4.8
uniform resource locator
URL
URI that in addition to identifying a resource provides a means of locating the resource by describing its primary access mechanism (e.g., its network location)

5 Symbols and abbreviations

ADR European Agreement concerning the International Carriage of Dangerous Goods by Road

MSD Minimum Set of Data

PER Packed Encoding Rules (ASN.1 :ITU/Rec 8825-2/X/691)

PSAP Public Safety Answering Points

6 General overview of the eCall HGV/GV data concept within the context of eCall

In the introduction to this European Technical Report, *eCall* was described as "an emergency call generated either automatically via activation of in-vehicle sensors or manually by the *vehicle occupants* (the *eCall generator*); when activated, it provides notification and relevant location information to the most appropriate PSAP, by means of *mobile wireless communications networks* and carries a defined standardised MSD, notifying that there has been an incident that requires response from the emergency services and establishes an audio channel between the occupants of the vehicle and the *most appropriate PSAP*".

Pan-European *eCall* effects this service using a 'Circuit Teleservice' supported by a 'Public Land Mobile Network' (PLMN) (Teleservice 12/TS12) ETSI TS 122 003 as specified in EN 16062 and EN 16072.

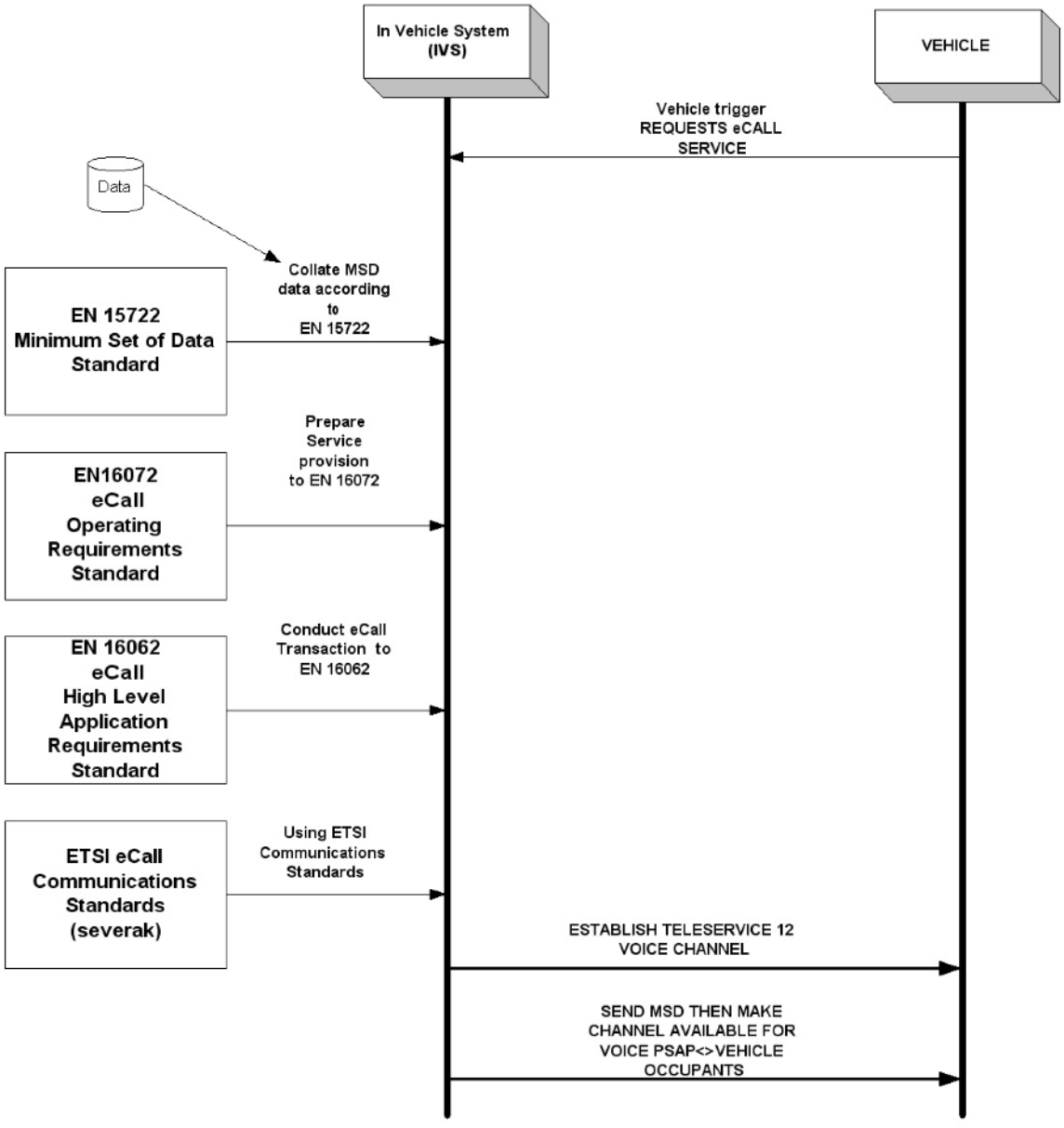

Figure 1 — Relationship of eCall transaction to standards

EN 16102 provides specification for Third party services supporting *eCall*.

7 Requirements

NOTE The MSD is important information to assist the provision of the most appropriate services to the crash or emergency site and to speed up the response. The MSD makes it possible for the PSAP operator to respond to the *eCall* even without the voice connection.

7.1 Concepts and formats

7.1.1 MSD data concepts

The MSD as defined in EN 15722 is a direct, timely message to the PSAP operator receiving the emergency call.

7.1.2 Format definition of MSD data concepts

The definitions shown in this Technical Report are defined in EN 15722. Data presentation is to be as determined in 6.1.4 of EN 15722:2011.

The real position of the element in the data-stream is defined by the ASN1 definition in Annex A of EN 15722:2011, and enhanced in Annex A of this Technical Report to include the optional HGV/GV data concept. The representations in this Technical Report are displayed to provide semantic meaning. However, as data is transferred using ASN.1 'Packed Encoding Rules', elements do not necessarily start or end on a byte boundary.

The following clauses define the position and definition of the HGV optional additional data concept.

7.1.3 HGV/GV optional additional data concept 'Object Identifier'

The object identifier uniquely identifies the format and meaning of the data that follows in the optional additional data concept.

The uniqueness of each specific relative identifier needs to be ensured by a specific international standardisations body, and maintained in a data registry operated in accordance with EN ISO 24978.

These identifiers are all relative to a specific root that should be agreed in advance. In addition, the root of all *eCall* relative OID's must be the same.

Not only the syntax of the data structure should be referenced via this identifier but also the semantic meaning of the content so that it can be usefully applied.

The user must ensure that the size of this element is restricted to ensure that the total ECallMessage is small enough for the relevant transmission medium.

Until such a registry is maintained, the OID for the HGV/GV data concept is to be one byte, and assumes that the OID for main MSD is binary value 00000001, 0000010 for Schema A and binary value 0000011 for Schema B.

7.1.4 Sequence of MSD data concepts

The sequence of data presentation is to be as specified in 6.2 of EN 15722:2011.

7.1.5 Data presentation of MSD

As specified in EN 15722, the MSD is transmitted using one or more wireless communications media as defined in EN 16072 which defines one or more ETSI air interface Standards suitable for the transmission of *eCall* and EN 16062 (*eCall* high level application protocols), and is to be presented in Abstract Syntax

Notation, ASN.1 ‘Packed Encoding Rules’ (PER unaligned) as defined in ISO/IEC 8825-2 using the ASN.1 definitions defined in Annex A.

The MSD may also be transferred to the PSAP as defined in EN 16102.

NOTE It is assumed that the integrity of the transmitted data is assured by the underlying communication interface standard used.

7.2 Minimum set of data (MSD)

7.2.1 General

The following sub-clauses provide the definition of an additional *eCall* HGV/GV data concept that may be sent as optional additional data within the MSD message from an HGV vehicle in case of an emergency call.

7.2.2 Order of bits and bytes

The message is to be sent in the sequence defined within the ASN.1 definition determined in EN 15722.

7.2.3 Contents of MSD

EN 15722 defines the elements (referred to as ‘Blocks’ in EN 15722) of the MSD data concept.

NOTE The real position and type of the elements in the data stream is defined by the formal ASN1 definition in Annex A of EN 15722:2011.

The elements of the MSD data concept specified in EN 15722 are:

a) ID (MSD format version);

b) Message identifier;

c) Control;

d) Vehicle identification (WMI/VDS/VIS);

e) Vehicle propulsion storage type;

f) Time stamp;

g) Vehicle location;

h) Vehicle direction;

i) Recent Vehicle Location n-1;

j) Recent Vehicle Location n-2;

k) N° of passengers;

l) Optional additional data.

Further detail of data elements 1 – 11 can be found in EN 15722, including definition of which elements are mandatory, and which are optional.

7.2.4 MSD 'Optional additional data'

Table 1 of EN 15722:2011 defines 'optional additional data' as:

Table 1 — 'Optional additional data' as defined in Table 1 of EN 15722:2011

Block N°	Name	Type	Unit		Description
12	Optional additional data	String	As specified	O	Further 103 bytes of data encoded as in ASN.1 definition. NOTE 1 ASN1 provides already the indication of whether optional data is included by simply identifying the optional additional data field as OPTIONAL NOTE 2 Additional data field may include an address where other relevant related data or functions are available. NOTE 3 The framework format of this field is defined in the ASN1 definition later in this document, which includes a method to uniquely identify the exact format of the data and may also be found in a data registry that is compliant to EN ISO 24978.

NOTE Except where explicitly specified or determined in a reference standard, negative values are not allowed.

7.3 HGV/GV data concept — General

Bearing in mind that there may also be a requirement for a UN-ECE data concept for HGV/GV data, and it is uncertain at this stage whether that will be an additional or alternative data concept, the HGV/GV data concept defined herein is defined to occupy less than 50 bytes of data when transmitted in ASN.1 PER.

The objective of the HGV/GV data concept is to provide the PSAP with data concerning the load of the affected vehicle transmitting the MSD.

Two variants are provided, one (schema A) for use where dangerous goods (ADR classified); the second variant (schema B) is for use where no ADR classified load is known.

Paramount priority is given to the transmission of data relating to dangerous/dangerous goods (in most cases electronically providing a link to the full set of data of the load), although providing the possibility to identify the goods and a contact telephone number where this is not possible. This data concept is defined as 'eCall HGV Schema A'.

Provision is also made in 'eCall HGV Schema B' to transfer data concerning other (non ADR) cargos. While these cargoes may not be classified as dangerous/dangerous, in the event of an accident they may cause increased risk of accident or problems for the emergency services – for example livestock; small materials such as ball bearings, liquids, manure or other materials likely to affect the surface tension of the roadway surface or present obstacles on the roadway.

7.4 eCall HGV/GV data concept definition

7.4.1 eCall HGV Schema A : ADR Goods

The HGV/GV data concept is to semantically comprise the elements specified in Table 2.

Table 2 — Contents/format of the eCall HGV/GV Schema A: ADR goods data concept

Block N°	Name	Type	Unit		Description
12-A0	OID	Integer	1 byte	M	Optional additional data concept identifier binary value 0000010 identifying HGV Schema A (until allocated a revised OID from a central register)
12-A1	ID	Integer	1 byte	M	HGV Schema A data concept format version set to 1 to discriminate from later HGV Schema A data concept formats Later versions to be backwards compatible with existing versions. Systems receiving an HGV Schema A data concept to support all standardised HGV Schema A data concept versions, which are each uniquely identified using an HGV Schema A data concept format version parameter which will always be contained in the first byte of all[current and future] HGV Schema A Data concept versions.
12-A2	Tanker or other vehicle type plus number of dangerous goods on-board	Octet string (1 Byte) Binary	00000000-10001100	O	The first binary position of the octet to indicate whether the affected vehicle is a tanker or other type of vehicle where 1nnnnnnn = Tanker 0nnnnnnn = Other type of vehicle The remaining 7 binary positions of the octet to identify the number of types of dangerous goods being carried 1 - 10 (0000000 – 0001010) = number of types of dangerous goods present on board (in binary representation) 0 (0000000) = no dangerous goods on board 12 (0001100) = empty but uncleaned 11 (0001011) = mixed load (unspecified number of types of dangerous goods present on-board, but number unknown) 10 (0001010) = 10 or more types of goods present on-board 0 0000000- 1 0001100

Block N°	Name	Type	Unit		Description
					Concatenated as octet: 00000000 – 10001100
12-A3	ADR data address URL (information endpoint)	Octet string 35 bytes)	As specified	O	scheme://domain:port/path?query_string#fragment_id i.e.: The scheme name (commonly called protocol), followed by :// then, depending on scheme, a domain name (alternatively, IP address) : a port number, and / the path of the resource to be fetched or the program to be run. If the scheme name is http, the 'http://' is assumed EXAMPLE www.example.com/path/to/name https://example.com/47.35868 telnet://192.0.2.16:80/ The information endpoint to be contacted and respond in a standardized* way using an access to a standardized method to retrieve data, *the standardized way this is done to be set elsewhere and is outside of the scope of this deliverable.
12-A4	Phone contact number	Integer (16)	As specified	O	Consignor contact telephone number or telephone number displayed on goods container as contact number in case of emergency. Countrycode/areacode/number As : 000 0000 0000000000 Represented as integer 0000000000000000
12-A5	Alarm information	Octet string (1 Byte)		O	Any alarm information from on-board sensors (pressure, leakage, shock, temperature etc) Binary Flag 0 = no alarm 1 = alarm 00000000 Binary position L F T S P O R[1] Z L = Leakage alarm F = Fire alarm T = Temperature alarm S = Shock alarm

Block N°	Name	Type	Unit		Description
					P = Pressure alarm O = Orientation alarm R[1] = reserved for future use Z = Other alarm IMPORTANT NOTE: Emergency services need to be aware that the absence of an alarm indicates only that there was no alarm showing as activated at the time of compiling the data. Alarms raised post the population of/sending of the MSD will not be transmitted. These codes therefore only indicate status before or at the point of the incident, and cannot be taken as the current status post incident.
12-A6	UN code of hazardous goods	Integer (7)	0000 00 0	O	Up to 4 materials (most dangerous (based on response code), within same response code prioritised to most impact in fire or largest volume) semantically identified as: *1 UN Code; *2 quantity in tonnes or 1000 cubic metres ;grossmass/net mass; *3; packaging group 0000 00 0; 0000 00 0; 0000 00 0; 0000 00 0 as 0000000, 0000000, 0000000, 0000000 No/no more Hazardous goods identified by ‘0000000’ *1 Issued by UN. May be obtained from http://live.unece.org/trans/danger/publi/adr/adr2011/11contentse.html or http://the-ncec.com/assets/Resources/EAClist2011.pdf *2 Identify quantity as Gross Mass=1; Net Mass=2 *3 packaging group I, 2 or 3 (representing groups I,II,III) 1 I 2 II 3 III

Block N°	Name	Type	Unit		Description
12-A6	UN code of dangerous goods	Integer (4)	0000	O	Up to 10 materials identified by UN ADR code, most dangerous listed first (based on response code- same response code prioritised to most impact in fire or largest volume) semantically identified as: 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 No/no more Dangerous goods identified by '0000' *1 Issued by UN. May be obtained from http://live.unece.org/trans/danger/publi/adr/adr2011/11contentse.html or http://the-ncec.com/assets/Resources/EAClist2011.pdf

M Mandatory data field (the entire eCall HGV/GV data concept is optional, but if presented, M elements are to be given).

O Optional data field.

7.4.2 eCall HGV Schema B : Other Goods (non ADR)

Table 3 — Contents/format of the eCall HGV/GV Schema B: Other Goods (non ADR)

Block N°	Name	Type	Unit		Description
12-B0	OID	Integer	1 byte	M	Additional data concept identifier binary value 0000011 identifying HGV Schema B (until allocated a revised OID from a central register)
12-B1	ID	Integer	1 byte	M	HGV Schema B data concept format version set to 1 to discriminate from later HGV Schema B data concept formats Later versions to be backwards compatible with existing versions. Systems receiving an HGV Schema B Data concept to support all standardised HGV Schema B data concept versions, which are each uniquely identified using an HGV Schema B data concept format version parameter which will always be contained in the first byte of all [current and future] HGV Schema B data concept versions.
12-B2	URL address (information endpoint)	Octet string 35 bytes) Providing URL	As specified	O	scheme://domain:port/path?query_string#fragment_id i.e.: The scheme name (commonly called protocol), followed by '://' then, depending on scheme, a domain name (alternatively, IP address) : a port number, and / the path of the resource to be fetched or the program to be run. If the scheme name is http, the 'http://' is assumed EXAMPLE www.example.com/path/to/name https://example.com/47.35868 telnet://192.0.2.16:80/ The information endpoint to be contacted and respond in a standardized* way using an access to a standardized method to retrieve data, *the standardized way this is done to be set elsewhere and is outside of the scope of this deliverable.

Block N°	Name	Type	Unit		Description
12-B3	Consignor or Operator phone contact number	Integer (16)	As specified	O	Consignor contact telephone number or telephone number displayed on goods container as contact number in case of emergency. Countrycode/areacode/number As : 000 0000 0000000000 Represented as integer 0000000000000000
12-B4	Number of types of goods on-board	Octet string (1 Byte) Binary	00000000-00001011	O	0 - 11 = number of types of goods present on board (in binary representation) 0 = no goods on board 11 = mixed load (unspecified number of types of goods present on-board, but number unknown) 10 = 10 or more types of goods present on-board
12-B5	Container type code	Octet string (2 Bytes) Binary	(AA-ZZ)	O	As per ISO 6346 BIC code, container type identification: Third and fourth character indicating the type of the container
12-B6	Alarm information			O	Any alarm information from on-board sensors (pressure, leakage, shock, temperature etc) Binary Flag 0 = no alarm 1 = alarm 00000000 Binary position L F T S P O R^1 Z L = Leakage alarm F = Fire alarm T = Temperature alarm S = Shock alarm P = Pressure alarm O = Orientation alarm R^1 = reserved for future use Z = Other alarm IMPORTANT NOTE: Emergency services need to be aware that the absence of an alarm indicates only that there was no alarm showing as activated at the time of compiling the data. Alarms raised post the population of/sending of the MSD will not be transmitted. These codes therefore only indicate status before or at the point of the incident, and cannot be taken as the current status post incident.

Block N°	Name	Type	Unit		Description
12-B7	UN SPC code of the significant goods onboard	6x Integer (8)	As specified	O	Up to 6 goods of significant quantity ('significant' defined at discretion of consignor) shown in decreasing order of quantity semantically identified as: 00000000; 00000000; 00000000; 00000000; 00000000; 00000000 Represented as 000000000; EXAMPLE 50400000 = Fresh vegetables Unassigned codes reproduced as 00000000 Obtained from http://www.unspsc.org
M Mandatory data field (the entire eCall HGV/GV data concept is optional, but if presented, M elements are to be given). O Optional data field.					

7.5 eCall HGV/GV data concept presentation

Data presentation of the HGV/GV data concept is to be as determined in EN 15722.

Annex A
(normative)

ASN.1 PER representation of MSD including Schema A — ASN.1 PER representation of MSD including Schema A

```
MSDHGVAASN1Module

DEFINITIONS
AUTOMATIC TAGS ::=
BEGIN

-- Version of this ASN.1 MSD specification
CurrentId ::= INTEGER (1)

-- ECallMessage is the top level information element
-- The ECallMessage structure supports only one message type (msd)
-- Extendibility at this level is not allowed, thus ensuring that the
-- ID (message format version) can be extracted directly.
-- Elements:
--   id:   MSD format version set to 1 to discriminate from later
--         MSD formats (CurrentId can be used).
--         Later versions to be backwards compatible with existing
--         versions.
--         Systems receiving an MSD is to support all standardised MSD
--         versions, which are each uniquely identified using
--         an MSD format version parameter which is to always be
--         contained in the first byte of all[current and future]
--         MSD versions.
--   msd:  Minimum Set Of Data uplink from vehicle,
--         excluding ID


ECallMessage ::= SEQUENCE {
  id  INTEGER(0 .. 255),
  msd MSDMessage
}


-- The main uplink msd message from the vehicle (excluding ID)
-- Elements:
--   msdStructure: The main MSD structure
--   optionalAdditionalData: Additional data
-- Extendable in future versions at this level e.g. to add extra data


MSDMessage ::= SEQUENCE {
  msdStructure           MSDStructure,
  optionalAdditionalData OptionalAdditionalData OPTIONAL,
  ...
}



-- The main MSD structure, excluding additional data
```

```
-- Elements:
--   messageIdentifier: Message identifier, starting with 1 for each
--                      new eCall session and to be incremented with
--                      every application layer MSD retransmission
--                      following a new 'Send MSD' request after the
--                      incident event
--   control: see ControlType
--   vehicleIdentificationNumber: see VIN
--   vehiclePropulsionStorageType: see VehiclePropulsionStorageType
--   timestamp: Timestamp of incident event
--              As seconds elapsed since midnight January 1st, 1970 UTC.
--              Failure value for time stamp set to "0"
--   vehicleLocation: see VehicleLocation
--   vehicleDirection: Direction of travel
--                     in 2°-degrees steps from magnetic north
--                     (0– 358, clockwise)
--                     If direction of travel is invalid or unknown,
--                     the value 0xFF is to be used
--                     Only values from 0 to 179 are valid.
--   recentVehicleLocationN1: location delta with respect to
--                            vehicleLocation
--                            see VehicleLocationDelta
--   recentVehicleLocationN2: location deltat with respect to
--                            recentVehicleLocationN1
--                            see VehicleLocationDelta
--   numberOfPassengers: Minimum known number of fastened seatbelts,
--                       may be set to 0xFF or the optional parameter
--                       omitted if no information is available
--                       NOTE: This information is indicative only as
--                       it may be not always be reliable in providing
--                       exact information about the number
--                       of passengers (e.g. because seatbelts may not
--                       be fastened by passengers or seatbelts may be
--                       fastened for other reasons)


MSDStructure  ::= SEQUENCE {
  messageIdentifier             INTEGER(0 .. 255),
  control                       ControlType,
  vehicleIdentificationNumber   VIN,
  vehiclePropulsionStorageType  VehiclePropulsionStorageType,
  timestamp                     INTEGER(0 .. 4294967295),
  vehicleLocation               VehicleLocation,
  vehicleDirection              INTEGER(0 .. 255),
  recentVehicleLocationN1       VehicleLocationDelta OPTIONAL,
  recentVehicleLocationN2       VehicleLocationDelta OPTIONAL,
  numberOfPassengers            INTEGER(0 .. 255) OPTIONAL,
  ...
}


-- The ControlType is a collection of the following elements:
-- Elements:
--   automaticActivation:  true = Automatic activation,
--                         false = Manual activation
--   testCall:             true = Test call, false = Emergency
--   positionCanBeTrusted: true = Position can be trusted,
--                         false = low confidence in position
--                         NOTE: The position confidence bit is to be
```

```
--                          set to "Low confidence in position"
--                          if the position is not within the limits
--                          of +-150m with 95% confidence
--   vehicleType:           see VehicleType


ControlType ::= SEQUENCE {
 automaticActivation  BOOLEAN,
 testCall             BOOLEAN,
 positionCanBeTrusted BOOLEAN,
 vehicleType          VehicleType
}



-- Definition of the vehicle type reporting the incident.
-- NOTE: Vehicle definitions class M, N according directive 2007/46/EC;
--       class L according directive 2002/24/EC
-- Extendable in future versions for new vehicle types
VehicleType ::= ENUMERATED{
  passengerVehicleClassM1 (1),
  busesAndCoachesClassM2 (2),
  busesAndCoachesClassM3 (3),
  lightCommercialVehiclesClassN1 (4),
  heavyDutyVehiclesClassN2 (5),
  heavyDutyVehiclesClassN3 (6),
  motorcyclesClassL1e (7),
  motorcyclesClassL2e (8),
  motorcyclesClassL3e (9),
  motorcyclesClassL4e (10),
  motorcyclesClassL5e (11),
  motorcyclesClassL6e (12),
  motorcyclesClassL7e (13),
  ...
}


-- VIN (vehicle identification number) according ISO 3779
--   isowmi: World Manufacturer Index (WMI)
--   isovds: Vehicle Type Descriptor (VDS)
--   Vehicle Identifier Section (VIS) consisting of
--     isovisModelyear: Modelyear from Vehicle Identifier Section (VIS)
--     isovisSeqPlant:  Plant code + sequential number
--                      from Vehicle Identifier Section (VIS)


VIN ::= SEQUENCE {
 isowmi                                          PrintableString     (SIZE(3))
(FROM("A".."H"|"J".."N"|"P"|"R".."Z"|"0".."9")),
 isovds                                          PrintableString     (SIZE(6))
(FROM("A".."H"|"J".."N"|"P"|"R".."Z"|"0".."9")),
 isovisModelyear                    PrintableString                  (SIZE(1))
(FROM("A".."H"|"J".."N"|"P"|"R".."Z"|"0".."9")),
 isovisSeqPlant                               PrintableString        (SIZE(7))
(FROM("A".."H"|"J".."N"|"P"|"R".."Z"|"0".."9"))
}


-- VehiclePropulsionStorageType:
-- These parameters identify the type of
```

```
-- vehicle energy storage(s) present.
-- For each storage type the following coding applies:
--   false  = indicates a type of storage not present
--   true = indicates type of storage which is present
-- The following storage types are supported:
--   Gasoline tank
--   Diesel tank
--   Compressed natural gas (CNG)
--   Liquid propane gas (LPG)
--   Electric energy storage (with more than 42v and 100Ah)
--   Hydrogen storage
-- All bits is to be set to zero to indicate an unknown
-- or other type of energy storage.
-- NOTE: This information may be unreliable if there has been a
-- change of vehicle propulsion type (e.g. from gasoline to CNG)
-- NOTE: More than one bit may be set if there is more than one
-- type of energy storage present.
-- Extendible in future versions for new fuel storage types


VehiclePropulsionStorageType ::= SEQUENCE {
 gasolineTankPresent   BOOLEAN DEFAULT FALSE,
 dieselTankPresent     BOOLEAN DEFAULT FALSE,
 compressedNaturalGas  BOOLEAN DEFAULT FALSE,
 liquidPropaneGas      BOOLEAN DEFAULT FALSE,
 electricEnergyStorage BOOLEAN DEFAULT FALSE,
 hydrogenStorage       BOOLEAN DEFAULT FALSE,
 ...
}



-- VehicleLocation:
-- The current location of the vehicle
-- Elements:
--  Position latitude (ISO 6709)
--   32 bits (4 octets) allocated to make signed value handling easier
--   Real latitude values in 1 milli-arc-second units
--   Valid value range (-324000000 to 324000000)
--   Maximum value Latitude = 90°00'00.000''
--   = 90*60*60.000'' = 324000.000''
--   = 324 000 000 Miliarcseconds
--   = 0x134FD900
--   Minimum value Latitude = -90°00'00.000''
--   = -90*60*60.000'' = -324000.000''
--   = -324 000 000 Miliarcseconds
--   = 0xECB02700
--   EXAMPLE 48°18'1.20" N = 48.3003333 lat
--   = (48*3600)+(18*60)+1.20}'' = 173881,200''
--   which encodes to the following value:
--   = 173881200d = 0x0A5D3770
--   If latitude is invalid or unknown, the
--   value 0x7FFFFFFF = 2147483647 is to be transmitted
--  Position longitude (ISO 6709)
--   32 bits (4 octets) allocated to make signed value handling easier
--   Real longitude values in 1 milli-arc-second units
--   Valid value range (-648000000 to 648000000)
--   Maximum value Longitude = 180°00'00.000''
--   = 180*60*60.000'' = 648000.000''
--   = 648 000 000 Miliarcseconds
```

```
--   = 0x269FB200
--   Minimum value Longitude = -180°00'00.000''
--   = -180*60*60.000'' = -648000.000''
--   = -648 000 000 Miliarcseconds
--   = 0xD9604E00
--   EXAMPLE 11°37'2.52" E = 11.6173666 long
--   = (11*3600)+(37*60)+2.52}'' = 41822.520''
--   which encodes to the following value:
--   = 41822520d = 0x027E2938
--   If longitude is invalid or unknown, the
--   value 0x7FFFFFFF = 2147483647 is to be used


VehicleLocation  ::= SEQUENCE {
 positionLatitude  INTEGER(-2147483648..2147483647),
 positionLongitude INTEGER(-2147483648..2147483647)
}


-- VehicleLocationDelta:
-- Description of a recent vehicle locatation before the incident
-- Latitude Delta (+ for North and - for South)
--   1 Unit = 100 miliarcseconds, which is approximately 3m
--   Coded value range (-512..511)
--   representing -51200 to +51100 miliarcseconds,
--   or from 51,2''S to 51,1''N from the reference position
-- Longitude Delta (+ for East and - for West)
--   1 Unit = 100 miliarcseconds, which is approximately 3m
--   Coded value range (-512..511)
--   representing -51200 to +51100 miliarcseconds,
--   or from 51,2''W to 51,1''E from the reference position


VehicleLocationDelta ::= SEQUENCE {
 latitudeDelta  INTEGER (-512..511),
 longitudeDelta INTEGER (-512..511)
}


-- AdditionalData:
-- Further additional bytes of data encoded as in a
-- seperate ASN.1 definition
-- NOTE: The framework format of this field is defined here,
--       which includes a method to uniquely identify the exact
--       format of the data.
-- Elements:
--   oid: Object identifier which uniquely identifies the format
--        and meaning of the data which follows.
--        The uniqueness of each specific relative identifier
--        must be ensured by a specific international
--        standardisations body.
--        These identifiers are all relative to a specific root
--        which must be agreed in advance.
--        The root of all eCall relative oid's must be the same.
--        Note that not only the syntax of the data structure should
--        be referenced via this identifier but also the symantic
--        meaning of the content so that it can be usefully applied.
--    version: version number of the HGV data concept (one byte 256 binary
         options)
--   data:Transparent optional additional data,
```

```
--        according to the format referenced by the oid
--        The user must ensure that the size of this element
--        is restricted to ensure that the total ECallMessage is
--        small enough for the relevant transmission medium.



-- 12-A0 object identifier is a byte providing 255 binary combinations for
optional additional data options plus one bit for future extension
-- 12-A1 Version number is a byte providing 255 binary combinations for versions
of the HGV data concept plus one bit for future extension
-- 12-A2 Number of dangerous goods on board, 1 byte in binary first binary place
identifies tanker/not tanker(0nnnnnnn – 1nnnnnnn)followed by binary number of
dangerous goods on board 00000001 – 0001100 – concatenated as 00000001 – 10001011
-- 12-A3 URL HAZMAT address as 35 bytes URL
-- 12-A4 HazMat phone contact as Countrycode/areacode/number as 000 0000
0000000000
-- 12-A5 AlarmInformation byte providing 8 binary options 0=no alarm 1= alarm
for, in sequence leakage, Fire, Temperature, Shock, Pressure; Orientation,
Reserved for further use, other
-- 12-A6 UN CODE Dangerous goods indicator (up to 10 codes(each a four digit
code, 0 as default option if 4 such goods are not present)


-- Version of this ASN.1 HGV Data Concept specification
CurrentHGVSchemaAVersion ::= BIT STRING (SIZE(8))


OptionalAdditionalData ::= SEQUENCE {
    oid BIT STRING (SIZE(8)),
   currentHGVSchemaAVersion BIT STRING (SIZE(8)),
     tankerTypeNumberADRs BIT STRING (SIZE(8)),
     endpointURLAddress OCTET STRING(SIZE(35)),
     phoneContact OCTET STRING(SIZE(17)),
     alarmInformation  OCTET STRING(SIZE(1)),
     uncodeDangerousGoods1 INTEGER (0.. 9999999),
     uncodeDangerousGoods2 INTEGER (0.. 9999999),
     uncodeDangerousGoods3 INTEGER (0.. 9999999),
     uncodeDangerousGoods4 INTEGER (0.. 9999999)
              }


END


NOTE:

OSS ASN.1 and ECN Syntax Checker Version 8.2
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C0284I:       Syntax       checking       file       'D:\00-000Archive\00-HGV
eCall\SchemaA100701.txt'.

C0285I: Global checking abstract syntax.

C0043I: 0 error messages, 0 warning messages and 2 informatory messages
issued.


Summary: Input ASN.1 module(s) successfully passed the syntax check.
```

```
-- An example for the MSD structure follows
-- This example does NOT form part of the formal ASN1 definition

ASN.1 PER unaligned example MSD message =
"0x015C0681D54970D65C3597CA0420C41464583ADE68AC52E9BB8413F149C07414FB414F60101808
13E82181823230"

Message size = 55 bytes

The above message represents the following example values:


<ECallMessage>

  <id>1</id>

  <msd>

    <msdStructure>

      <messageIdentifier>1</messageIdentifier>

      <control>

        <automaticActivation>

          <true/>

        </automaticActivation>

        <testCall>

          <false/>

        </testCall>

        <positionCanBeTrusted>

          <true/>

        </positionCanBeTrusted>

        <vehicleType>

          <passengerVehicleClassM1/>

        </vehicleType>

      </control>

      <vehicleIdentificationNumber>

        <isowmi>WM9</isowmi>

        <isovds>VDSVDS</isovds>

        <isovisModelyear>Y</isovisModelyear>
```

```
      <isovisSeqPlant>A123456</isovisSeqPlant>
    </vehicleIdentificationNumber>
    <vehiclePropulsionStorageType>
      <gasolineTankPresent>
        <true/>
      </gasolineTankPresent>
      <electricEnergyStorage>
        <true/>
      </electricEnergyStorage>
    </vehiclePropulsionStorageType>
    <timestamp>123456789</timestamp>
    <vehicleLocation>
      <positionLatitude>173881200</positionLatitude>
      <positionLongitude>41822520</positionLongitude>
    </vehicleLocation>
    <vehicleDirection>14</vehicleDirection>
    <recentVehicleLocationN1>
      <latitudeDelta>10</latitudeDelta>
      <longitudeDelta>-10</longitudeDelta>
    </recentVehicleLocationN1>
    <recentVehicleLocationN2>
      <latitudeDelta>10</latitudeDelta>
      <longitudeDelta>-20</longitudeDelta>
    </recentVehicleLocationN2>
    <numberOfPassengers>2</numberOfPassengers>
  </msdStructure>
  <optionalAdditionalData>
    <oid>1</oid>
     <HGVVersion>1<HGVVersion>
```

```
            <data>10001100,www.example.com/path/to/name0000000,44158728417700000,
9,1231,1232,1233,1234,1235,1236,1237,1238,1239,1210</data>

    </optionalAdditionalData>

  </msd>

</ECallMessage>
```

Annex B
(normative)

ASN.1 PER representation of MSD including Schema B — ASN.1 PER representation of MSD including Schema B

```
MSDHGVBASN1Module

DEFINITIONS
AUTOMATIC TAGS ::=
BEGIN

-- Version of this ASN.1 MSD specification
CurrentId ::= INTEGER (1)

-- ECallMessage is the top level information element
-- The ECallMessage structure supports only one message type (msd)
-- Extendibility at this level is not allowed, thus ensuring that the
-- ID (message format version) can be extracted directly.
-- Elements:
--   id:   MSD format version set to 1 to discriminate from later
--         MSD formats (CurrentId can be used).
--         Later versions to be backwards compatible with existing
--         versions.
--         Systems receiving an MSD is to support all standardised MSD
--         versions, which are each uniquely identified using
--         an MSD format version parameter which is to always be
--         contained in the first byte of all[current and future]
--         MSD versions.
--   msd:  Minimum Set Of Data uplink from vehicle,
--         excluding ID


ECallMessage ::= SEQUENCE {
  id  INTEGER(0 .. 255),
  msd MSDMessage
}


-- The main uplink msd message from the vehicle (excluding ID)
-- Elements:
--   msdStructure: The main MSD structure
--   optionalAdditionalData: Additional data
-- Extendable in future versions at this level e.g. to add extra data


MSDMessage ::= SEQUENCE {
  msdStructure           MSDStructure,
  optionalAdditionalData OptionalAdditionalData OPTIONAL,
  ...
}



-- The main MSD structure, excluding additional data
-- Elements:
```

```
--   messageIdentifier: Message identifier, starting with 1 for each
--                      new eCall session and to be incremented with
--                      every application layer MSD retransmission
--                      following a new 'Send MSD' request after the
--                      incident event
--   control: see ControlType
--   vehicleIdentificationNumber: see VIN
--   vehiclePropulsionStorageType: see VehiclePropulsionStorageType
--   timestamp: Timestamp of incident event
--              As seconds elapsed since midnight January 1st, 1970 UTC.
--              Failure value for time stamp set to "0"
--   vehicleLocation: see VehicleLocation
--   vehicleDirection: Direction of travel
--                     in 2°-degrees steps from magnetic north
--                     (0– 358, clockwise)
--                     If direction of travel is invalid or unknown,
--                     the value 0xFF is to be used
--                     Only values from 0 to 179 are valid.
--   recentVehicleLocationN1: location delta with respect to
--                            vehicleLocation
--                            see VehicleLocationDelta
--   recentVehicleLocationN2: location deltat with respect to
--                            recentVehicleLocationN1
--                            see VehicleLocationDelta
--   numberOfPassengers: Minimum known number of fastened seatbelts,
--                       may be set to 0xFF or the optional parameter
--                       omitted if no information is available
--                       NOTE: This information is indicative only as
--                       it may be not always be reliable in providing
--                       exact information about the number
--                       of passengers (e.g. because seatbelts may not
--                       be fastened by passengers or seatbelts may be
--                       fastened for other reasons)


MSDStructure  ::= SEQUENCE {
  messageIdentifier             INTEGER(0 .. 255),
  control                       ControlType,
  vehicleIdentificationNumber   VIN,
  vehiclePropulsionStorageType  VehiclePropulsionStorageType,
  timestamp                     INTEGER(0 .. 4294967295),
  vehicleLocation               VehicleLocation,
  vehicleDirection              INTEGER(0 .. 255),
  recentVehicleLocationN1       VehicleLocationDelta OPTIONAL,
  recentVehicleLocationN2       VehicleLocationDelta OPTIONAL,
  numberOfPassengers            INTEGER(0 .. 255) OPTIONAL,
  ...
}


-- The ControlType is a collection of the following elements:
-- Elements:
--   automaticActivation:  true = Automatic activation,
--                         false = Manual activation
--   testCall:             true = Test call, false = Emergency
--   positionCanBeTrusted: true = Position can be trusted,
--                         false = low confidence in position
--                         NOTE: The position confidence bit is to be
--                         set to "Low confidence in position"
```

```
--                          if the position is not within the limits
--                          of +-150m with 95% confidence
--   vehicleType:           see VehicleType


ControlType ::= SEQUENCE {
 automaticActivation  BOOLEAN,
 testCall             BOOLEAN,
 positionCanBeTrusted BOOLEAN,
 vehicleType          VehicleType
}



-- Definition of the vehicle type reporting the incident.
-- NOTE: Vehicle definitions class M, N according directive 2007/46/EC;
--       class L according directive 2002/24/EC
-- Extendable in future versions for new vehicle types
VehicleType ::= ENUMERATED{
  passengerVehicleClassM1 (1),
  busesAndCoachesClassM2 (2),
  busesAndCoachesClassM3 (3),
  lightCommercialVehiclesClassN1 (4),
  heavyDutyVehiclesClassN2 (5),
  heavyDutyVehiclesClassN3 (6),
  motorcyclesClassL1e (7),
  motorcyclesClassL2e (8),
  motorcyclesClassL3e (9),
  motorcyclesClassL4e (10),
  motorcyclesClassL5e (11),
  motorcyclesClassL6e (12),
  motorcyclesClassL7e (13),
  ...
}


-- VIN (vehicle identification number) according ISO 3779
--   isowmi: World Manufacturer Index (WMI)
--   isovds: Vehicle Type Descriptor (VDS)
--   Vehicle Identifier Section (VIS) consisting of
--     isovisModelyear: Modelyear from Vehicle Identifier Section (VIS)
--     isovisSeqPlant:  Plant code + sequential number
--                      from Vehicle Identifier Section (VIS)


VIN ::= SEQUENCE {
 isowmi                                          PrintableString     (SIZE(3))
(FROM("A".."H"|"J".."N"|"P"|"R".."Z"|"0".."9")),
 isovds                                          PrintableString     (SIZE(6))
(FROM("A".."H"|"J".."N"|"P"|"R".."Z"|"0".."9")),
 isovisModelyear                    PrintableString                  (SIZE(1))
(FROM("A".."H"|"J".."N"|"P"|"R".."Z"|"0".."9")),
 isovisSeqPlant                               PrintableString        (SIZE(7))
(FROM("A".."H"|"J".."N"|"P"|"R".."Z"|"0".."9"))
}


-- VehiclePropulsionStorageType:
-- These parameters identify the type of
-- vehicle energy storage(s) present.
```

```
-- For each storage type the following coding applies:
--   false  = indicates a type of storage not present
--   true = indicates type of storage which is present
-- The following storage types are supported:
--   Gasoline tank
--   Diesel tank
--   Compressed natural gas (CNG)
--   Liquid propane gas (LPG)
--   Electric energy storage (with more than 42v and 100Ah)
--   Hydrogen storage
-- All bits is to be set to zero to indicate an unknown
-- or other type of energy storage.
-- NOTE: This information may be unreliable if there has been a
-- change of vehicle propulsion type (e.g. from gasoline to CNG)
-- NOTE: More than one bit may be set if there is more than one
-- type of energy storage present.
-- Extendible in future versions for new fuel storage types


VehiclePropulsionStorageType ::= SEQUENCE {
 gasolineTankPresent   BOOLEAN DEFAULT FALSE,
 dieselTankPresent     BOOLEAN DEFAULT FALSE,
 compressedNaturalGas  BOOLEAN DEFAULT FALSE,
 liquidPropaneGas      BOOLEAN DEFAULT FALSE,
 electricEnergyStorage BOOLEAN DEFAULT FALSE,
 hydrogenStorage       BOOLEAN DEFAULT FALSE,
 ...
}



-- VehicleLocation:
-- The current location of the vehicle
-- Elements:
--  Position latitude (ISO 6709)
--   32 bits (4 octets) allocated to make signed value handling easier
--   Real latitude values in 1 milli-arc-second units
--   Valid value range (-324000000 to 324000000)
--   Maximum value Latitude = 90°00'00.000''
--   = 90*60*60.000'' = 324000.000''
--   = 324 000 000 Miliarcseconds
--   = 0x134FD900
--   Minimum value Latitude = -90°00'00.000''
--   = -90*60*60.000'' = -324000.000''
--   = -324 000 000 Miliarcseconds
--   = 0xECB02700
--   EXAMPLE 48°18'1.20" N = 48.3003333 lat
--   = (48*3600)+(18*60)+1.20}'' = 173881,200''
--   which encodes to the following value:
--   = 173881200d = 0x0A5D3770
--   If latitude is invalid or unknown, the
--   value 0x7FFFFFFF = 2147483647 is to be transmitted
--  Position longitude (ISO 6709)
--   32 bits (4 octets) allocated to make signed value handling easier
--   Real longitude values in 1 milli-arc-second units
--   Valid value range (-648000000 to 648000000)
--   Maximum value Longitude = 180°00'00.000''
--   = 180*60*60.000'' = 648000.000''
--   = 648 000 000 Miliarcseconds
--   = 0x269FB200
```

```
--   Minimum value Longitude = -180°00'00.000''
--   = -180*60*60.000'' = -648000.000''
--   = -648 000 000 Miliarcseconds
--   = 0xD9604E00
--   EXAMPLE 11°37'2.52" E = 11.6173666 long
--   = (11*3600)+(37*60)+2.52}'' = 41822.520''
--   which encodes to the following value:
--   = 41822520d = 0x027E2938
--   If longitude is invalid or unknown, the
--   value 0x7FFFFFFF = 2147483647 is to be used


VehicleLocation  ::= SEQUENCE {
 positionLatitude  INTEGER(-2147483648..2147483647),
 positionLongitude INTEGER(-2147483648..2147483647)
}


-- VehicleLocationDelta:
-- Description of a recent vehicle locatation before the incident
-- Latitude Delta (+ for North and - for South)
--   1 Unit = 100 miliarcseconds, which is approximately 3m
--   Coded value range (-512..511)
--   representing -51200 to +51100 miliarcseconds,
--   or from 51,2''S to 51,1''N from the reference position
-- Longitude Delta (+ for East and - for West)
--   1 Unit = 100 miliarcseconds, which is approximately 3m
--   Coded value range (-512..511)
--   representing -51200 to +51100 miliarcseconds,
--   or from 51,2''W to 51,1''E from the reference position


VehicleLocationDelta ::= SEQUENCE {
 latitudeDelta  INTEGER (-512..511),
 longitudeDelta INTEGER (-512..511)
}


-- AdditionalData:
-- Further additional bytes of data encoded as in a
-- seperate ASN.1 definition
-- NOTE: The framework format of this field is defined here,
--       which includes a method to uniquely identify the exact
--       format of the data.
-- Elements:
--   oid: Object identifier which uniquely identifies the format
--        and meaning of the data which follows.
--        The uniqueness of each specific relative identifier
--        must be ensured by a specific international
--        standardisations body.
--        These identifiers are all relative to a specific root
--        which must be agreed in advance.
--        The root of all eCall relative oid's must be the same.
--        Note that not only the syntax of the data structure should
--        be referenced via this identifier but also the symantic
--        meaning of the content so that it can be usefully applied.
--    version: version number of the HGV data concept (one byte 256 binary
         options)
--   data: Transparent optional additional data,
--        according to the format referenced by the oid
```

```
--        The user must ensure that the size of this element
--        is restricted to ensure that the total ECallMessage is
--        small enough for the relevant transmission medium.



-- 12-B0 object identifier is a byte providing 255 binary combinations for
optional additional data options plus one bit for future extension
-- 12-B1 Version number is a byte providing 255 binary combinations for versions
of the HGV data concept plus one bit for future extension
-- 12-B2 Information endpoint address as 35 bytes URL
-- 12-B3 Information endpoint phone contact as Countrycode/areacode/number as 000
0000 0000000000
-- 12-B4 Number of types of goods on board, decimal 0-11 represented as Binary
00000000-00001011
-- 12-B5 Container Type an integer with value between 1 and 63, default 0 if not
known
-- 12-B6 AlarmInformation byte providing 8 binary options 0=no alarm 1= alarm
for, in sequence leakage, Fire, Temperature, Shock, Pressure; Orientation,
Reserved for further use, Other alarm
-- 12-B7 UN Materials spc code semantic format 00000000, as eight digit integer,
up to goods type 6 codes supported, 000000000 as default option if 6 such goods
types are not present


-- Version of this ASN.1 HGV Data Concept specification
CurrentHGVSchemaBVersion ::= BIT STRING (SIZE(8))


OptionalAdditionalData ::= SEQUENCE {
    oid BIT STRING (SIZE(8)),
   currentHGVSchemaBVersion BIT STRING (SIZE(8)),
       endpointURLAddress OCTET STRING(SIZE(35)),
       phoneContact OCTET STRING(SIZE(17)),
       numberOfGoodsTypes BIT STRING (SIZE(8)),
       containerType   INTEGER  (1  .. 63),
       alarmInformation OCTET STRING(SIZE(1)),
       unmaterialsSPCCode1  INTEGER (0..99999999),
       unmaterialsSPCCode2  INTEGER (0..99999999),
       unmaterialsSPCCode3  INTEGER (0..99999999),
       unmaterialsSPCCode4  INTEGER (0..99999999),
       unmaterialsSPCCode5  INTEGER (0..99999999),
       unmaterialsSPCCode6  INTEGER (0..99999999)
              }


END


NOTE:
OSS ASN.1 and ECN Syntax Checker Version 8.2
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C0284I:  Syntax  checking  file  'D:\00-000Archive\00-HGV  eCall\MSDHGVBASN1Module  v1
110625.txt'.

C0285I: Global checking abstract syntax.

C0043I: 0 error messages, 0 warning messages and 2 informatory messages issued.


Summary: Input ASN.1 module(s) successfully passed the syntax check.
```

```
-- An example for the MSD structure follows
-- This example does NOT form part of the formal ASN1 definition

ASN.1 PER unaligned example MSD message =
"0x015C0681D54970D65C3597CA0420C41464583ADE68AC52E9BB8413F149C07414FB414F60101808
13E82181823230"

Message size = 55 bytes

The above message represents the following example values:


<ECallMessage>

  <id>1</id>

  <msd>

    <msdStructure>

      <messageIdentifier>1</messageIdentifier>

      <control>

        <automaticActivation>

          <true/>

        </automaticActivation>

        <testCall>

          <false/>

        </testCall>

        <positionCanBeTrusted>

          <true/>

        </positionCanBeTrusted>

        <vehicleType>

          <passengerVehicleClassM1/>

        </vehicleType>

      </control>

      <vehicleIdentificationNumber>

        <isowmi>WMI</isowmi>

        <isovds>VDSVDS</isovds>

        <isovisModelyear>Y</isovisModelyear>
```

```
      <isovisSeqPlant>A123456</isovisSeqPlant>
    </vehicleIdentificationNumber>
    <vehiclePropulsionStorageType>
      <gasolineTankPresent>
        <true/>
      </gasolineTankPresent>
      <electricEnergyStorage>
        <true/>
      </electricEnergyStorage>
    </vehiclePropulsionStorageType>
    <timestamp>123456789</timestamp>
    <vehicleLocation>
      <positionLatitude>173881200</positionLatitude>
      <positionLongitude>41822520</positionLongitude>
    </vehicleLocation>
    <vehicleDirection>14</vehicleDirection>
    <recentVehicleLocationN1>
      <latitudeDelta>10</latitudeDelta>
      <longitudeDelta>-10</longitudeDelta>
    </recentVehicleLocationN1>
    <recentVehicleLocationN2>
      <latitudeDelta>10</latitudeDelta>
      <longitudeDelta>-20</longitudeDelta>
    </recentVehicleLocationN2>
    <numberOfPassengers>2</numberOfPassengers>
  </msdStructure>
  <optionalAdditionalData>
    <oid>1</oid>
     <HGVSchemaBVersion>1<HGVSchemaBVersion>
```

```
<data>1,9,www.example.com/path/to/name0000000,44158728417700000,9,63,1,12345678,1
2345679,12345680,12345681,12345682,12345683</data>



    </optionalAdditionalData>

  </msd>

</ECallMessage>
```

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