Economic Commission for Europe
Inland Transport Committee

Working Party on the Transport of Dangerous Goods

Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods

Geneva, 13-23 September 2011

Item 7 of the provisional agenda

Reports of informal working groups

Telematic applications: eCall HGV/GV, additional data concept specification

Transmitted by European Committee for Standardisation (CEN)
Intelligent transport systems — eSafety — eCall: HGV/GV additional data concept specification

Intelligente Transportsysteme - eSicherheit –

Systèmes de transport intelligents - eSafety -

ICS:

Descriptors:

WI 0278284 working draft of Technical Report 110901v1
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Scope</td>
<td>5</td>
</tr>
<tr>
<td>2. Conformance</td>
<td>6</td>
</tr>
<tr>
<td>3. References</td>
<td>6</td>
</tr>
<tr>
<td>4. Terms and definitions</td>
<td>7</td>
</tr>
<tr>
<td>5. Symbols and abbreviations</td>
<td>7</td>
</tr>
<tr>
<td>6. General overview of the eCall HGV/GV data concept within the context of eCall</td>
<td>8</td>
</tr>
<tr>
<td>7. Requirements</td>
<td>9</td>
</tr>
<tr>
<td>7.1 Concepts and formats</td>
<td>10</td>
</tr>
<tr>
<td>7.1.1 MSD data concepts</td>
<td>10</td>
</tr>
<tr>
<td>7.1.2 Format definition of MSD data concepts</td>
<td>10</td>
</tr>
<tr>
<td>7.1.3 HGV/GV optional additional data concept ‘Object Identifier’</td>
<td>10</td>
</tr>
<tr>
<td>7.1.4 Sequence of MSD data concepts</td>
<td>10</td>
</tr>
<tr>
<td>7.1.5 Data presentation of MSD</td>
<td>10</td>
</tr>
<tr>
<td>7.2 Minimum set of data (MSD)</td>
<td>11</td>
</tr>
<tr>
<td>7.2.1 Order of bits and bytes</td>
<td>11</td>
</tr>
<tr>
<td>7.2.2 Contents of MSD</td>
<td>11</td>
</tr>
<tr>
<td>7.2.3 MSD ‘Optional additional data’</td>
<td>11</td>
</tr>
<tr>
<td>7.3 HGV/GV data concept</td>
<td>12</td>
</tr>
<tr>
<td>7.3.1 General</td>
<td>12</td>
</tr>
<tr>
<td>7.4 eCall HGV/GV data concept definition</td>
<td>13</td>
</tr>
<tr>
<td>7.4.1 eCall HGV Schema A : ADR Goods</td>
<td>13</td>
</tr>
<tr>
<td>7.4.2 eCall HGV Schema B : Other Goods (non ADR)</td>
<td>17</td>
</tr>
<tr>
<td>7.5 eCall HGV/GV data concept presentation</td>
<td>19</td>
</tr>
<tr>
<td>8. Declaration of patents and intellectual property</td>
<td>19</td>
</tr>
<tr>
<td>Annex A (normative) ASN.1 PER representation of MSD including Schema A</td>
<td>20</td>
</tr>
<tr>
<td>Annex B (normative) ASN.1 PER representation of MSD including Schema B</td>
<td>29</td>
</tr>
<tr>
<td>Annex C (normative) Easyguide :How to use this Technical Report</td>
<td>39</td>
</tr>
</tbody>
</table>
Foreword

This document (EN xxxx:2011) has been prepared by Technical Committee CEN/TC 278 “Road transport and traffic telematics”, the secretariat of which is held by NEN.

This document is currently submitted as a Technical Report.
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 1 The communications media protocols and methods for the transmission of the eCall message are not specified in this Technical Report.

NOTE 2 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 125722 eCall "Minimum Set of Data", that may be transferred from a goods vehicle to a 'Public Safety Answering Point' (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 1 The communications media protocols and methods for the transmission of the eCall message are not specified in this Technical Report.

NOTE 2 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 minimum set of data (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 References

The following referenced documents are indispensable for the application 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 15722:2011, Intelligent transport systems — eSafety — eCall minimum set of data (MSD)

EN 16062:2011 Intelligent transport systems — eSafety — eCall high level application requirements (HLAP)

EN 16072:2011 Intelligent transport systems — eSafety — Pan European eCall- Operating requirements

EN 16102:2011 Intelligent transport systems — ESafety — Third party services supported eCall -Operating requirements

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

EN ISO 24978; Intelligent transport systems – ITS safety and emergency messages – Data registry procedures


UNSPSC® United Nations Standard Products and Services Code®

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 (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 'Public Safety Answering Point', by means of mobile wireless communications networks, carries a defined standardised 'Minimum Set of Data' 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 'Public Safety Answering Point'

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
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
dangerous goods
see dangerous goods

4.7
heavy goods vehicle
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

4.8
uniform resource identifier (URI)
string of characters used to identify a name or a resource on the Internet.

4.9
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
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 Public Safety Answering Point, by means of mobile wireless communications networks and carries a defined standardised minimum set of data, 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 Public Safety Answering Point.

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 EN16062 and EN 16072.
EN16102 provides specification for Third party services supporting eCall.

7 Requirements

NOTE The minimum set of data 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 minimum set of data 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 "Minimum Set of Data" 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 Clause 6.1.4 of EN 15722.

The real position of the element in the data-stream is defined by the ASN1 definition in Annex A of EN 15722, 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 ‘optional additional data concept’ commences with

7.1.3 HGV/GV optional additional data concept ‘Object Identifier’

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

The uniqueness of each specific relative identifier needs 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 which should be agreed in advance. And 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 ECallsMessage 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.

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 EN16062 (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 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)

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 minimum set of data message from an HGV vehicle in case of an emergency call.

7.2.1 Order of bits and bytes

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

7.2.2 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.

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

1. **ID** (MSD format version)
2. **Message identifier**
3. **Control**
4. **Vehicle identification (WMI/VDS/VIS)**
5. **Vehicle propulsion storage type**
6. **Time stamp**
7. **Vehicle location**
8. **Vehicle direction**
9. **Recent Vehicle Location n-1**
10. **Recent Vehicle Location n-2**
11. **No. of passengers**
12. **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.

7.2.3 MSD ‘Optional additional data’

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

<table>
<thead>
<tr>
<th>Block No.</th>
<th>Name</th>
<th>Type</th>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Optional additional data</td>
<td>String</td>
<td>As specified</td>
<td>Further 103 bytes of data encoded as in ASN.1 definition.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NOTE 1  ASN1 provides already the indication of whether optional data is included by simply identifying the optional additional data field as OPTIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NOTE 2  Additional data field may include an address where other relevant related data or functions are available.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>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</td>
</tr>
</tbody>
</table>
### 7.3 HGV/GV data concept

#### 7.3.1 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 1

<table>
<thead>
<tr>
<th>Block No.</th>
<th>Name</th>
<th>Type</th>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-A0</td>
<td>OID</td>
<td>Integer</td>
<td>1 byte</td>
<td>M</td>
</tr>
<tr>
<td>12-A1</td>
<td>ID</td>
<td>Integer</td>
<td>1 byte</td>
<td>M</td>
</tr>
<tr>
<td>12-A2</td>
<td>Tanker or other vehicle type plus number of dangerous goods on-board</td>
<td>Octet string (1 Byte)</td>
<td>00000000-10001100</td>
<td>O</td>
</tr>
<tr>
<td>Block No.</td>
<td>Name</td>
<td>Type</td>
<td>Unit</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------------</td>
<td>-----------------</td>
<td>------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>number of types of dangerous goods present on-board, but number unknown)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10 (0001010) = 10 or more types of goods present on-board</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0 0000000-1 0001100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Concatenated as octet:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>00000000 – 10001100</td>
</tr>
<tr>
<td>12-A3</td>
<td>ADR data address URL</td>
<td>Octet string</td>
<td></td>
<td>As specified</td>
</tr>
<tr>
<td></td>
<td>(information endpoint)</td>
<td>35 bytes)</td>
<td></td>
<td>scheme://domain:port?query_string#fragment_id</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>If the scheme name is http, the ‘http://’ is assumed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>e.g:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><a href="http://www.example.com/path/to/name">www.example.com/path/to/name</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><a href="https://example.com/47.35868">https://example.com/47.35868</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>telnet://192.0.2.16:80/</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The information endpoint to be contacted and respond in a standardized* way using an access to a standardized method to retrieve data,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*the standardized way this is done to be set elsewhere and is outside of the scope of this deliverable.</td>
</tr>
<tr>
<td>12-A4</td>
<td>Phone contact number</td>
<td>Integer (16)</td>
<td></td>
<td>As specified</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Consignor contact telephone number or telephone number displayed on goods container as contact number in case of emergency.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Countrycode/areacode/number</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>As :</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>000 0000 0000000000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Represented as integer</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0000000000000000</td>
</tr>
<tr>
<td>12-A5</td>
<td>Alarm information</td>
<td>Octet string</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1 Byte)</td>
<td></td>
<td>Any alarm information from on-board sensors</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(pressure, leakage, shock, temperature etc)</td>
</tr>
<tr>
<td>Block No.</td>
<td>Name</td>
<td>Type</td>
<td>Unit</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------</td>
<td>----------</td>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Binary Flag 0 = no alarm 1 = alarm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>00000000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Binary position</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L F T S P O R(^1) Z</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>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</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>12-A6</td>
<td>UN code of hazardous goods</td>
<td>Integer (7)</td>
<td>0000 00 0</td>
<td>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:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*1 UN Code;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*2 quantity in tonnes or 1000 cubic metres ;grossmass/net mass;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*3; packaging group</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0000 00 0;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0000 00 0;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0000 00 0;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0000 00 0 as</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>00000000, 0000000, 0000000, 0000000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No/no more Hazardous goods identified by</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>‘0000000’</td>
</tr>
</tbody>
</table>

\(^1\) Issued by UN. May be obtained from [http://live.unece.org/trans/danger/publi/adr/adr2011/11contentse.html](http://live.unece.org/trans/danger/publi/adr/adr2011/11contentse.html)
<table>
<thead>
<tr>
<th>Block No.</th>
<th>Name</th>
<th>Type</th>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*2 Identify quantity as Gross Mass=1; Net Mass=2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*3 packaging group I, 2 or 3 (representing groups I, II, III)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>12-A6</td>
<td>UN code of dangerous goods</td>
<td>Integer (4)</td>
<td>0000</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>No/no more Dangerous goods identified by ‘0000’</td>
</tr>
</tbody>
</table>
### 7.4.2 eCall HGV Schema B: Other Goods (non ADR)

Table 2 — Contents/format of the eCall HGV/GV Schema B: Other Goods (non ADR)

- 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

<table>
<thead>
<tr>
<th>Block No.</th>
<th>Name</th>
<th>Type</th>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-B0</td>
<td>OID</td>
<td>Integer</td>
<td>1 byte</td>
<td>Additional data concept identifier binary value 0000011 identifying HGV Schema B (until allocated a revised OID from a central register)</td>
</tr>
<tr>
<td>12-B1</td>
<td>ID</td>
<td>Integer</td>
<td>1 byte</td>
<td>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.</td>
</tr>
<tr>
<td>12-B2</td>
<td>URL address (information endpoint)</td>
<td>Octet string 35 bytes</td>
<td>As specified</td>
<td>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 e.g: <a href="http://www.example.com/path/to/name">www.example.com/path/to/name</a> <a href="https://example.com/47.35868">https://example.com/47.35868</a> 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, &quot;the standardized way this is done to be set elsewhere and is outside of the scope of this deliverable.&quot;</td>
</tr>
<tr>
<td>Block No.</td>
<td>Name</td>
<td>Type</td>
<td>Unit</td>
<td>Description</td>
</tr>
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<td>-----------------</td>
<td>-----------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>12-B3</td>
<td>Consignor or Operator phone contact number</td>
<td>Integer (16)</td>
<td>As specified</td>
<td>Consignor contact telephone number or telephone number displayed on goods container as contact number in case of emergency. Country code/area code/number As: 000 0000 0000000000 Represented as integer 0000000000000000</td>
</tr>
<tr>
<td>12-B4</td>
<td>Number of types of goods on-board</td>
<td>Octet string (1 Byte)</td>
<td></td>
<td>0 - 11 = number of types of goods present on board (in binary representation) 0 = no goods on board 11 = mixed load (unspecifed number of types of goods present on-board, but number unknown) 10 = 10 or more types of goods present on-board</td>
</tr>
<tr>
<td>12-B5</td>
<td>Container type code</td>
<td>Octet string (2 Bytes)</td>
<td>(AA-ZZ)</td>
<td>As per ISO 6346 BIC code, container type identification: Third and fourth character indicating the type of the container</td>
</tr>
<tr>
<td>12-B6</td>
<td>Alarm information</td>
<td>Binary</td>
<td></td>
<td>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 R1 Z L = Leakage alarm F = Fire alarm T = Temperature alarm S = Shock alarm P = Pressure alarm O = Orientation alarm R1 = 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</td>
</tr>
<tr>
<td>Block No.</td>
<td>Name</td>
<td>Type</td>
<td>Unit</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
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<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>12-B7</td>
<td>UN SPC code of the significant goods onboard</td>
<td>6x Integer (8)</td>
<td>As specified</td>
<td>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 00000000; Example: 50400000 = Fresh vegetables Unassigned codes reproduced as 00000000 Obtained from <a href="http://www.unspsc.org">http://www.unspsc.org</a></td>
</tr>
</tbody>
</table>

### 7.5 eCall HGV/GV data concept presentation

Data presentation of the HGV/GV data concept is to be as determined in EN15722.

### 8 Declaration of patents and intellectual property

No patent or intellectual property have been declared to affect the provisions of this Technical Report, other than those declared in the normatively referenced documents.
Annex A
(normative)

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
recentVehicleLocationN2: location deltate with respect to recentVehicleLocationN1
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 $\pm 150m$ 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),
  lightCommercialVehiclesClassM1 (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 = 0xA5D3770
-- 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 Milliarcseconds
-- = 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 location before the incident
-- Latitude Delta (+ for North and - for South)
-- 1 Unit = 100 milliarcseconds, which is approximately 3m
-- Coded value range (-512..511)
-- representing -51200 to +51100 milliarcseconds,
-- or from 51,2’’S to 51,1’’N from the reference position
-- Longitude Delta (+ for East and - for West)
-- 1 Unit = 100 milliarcseconds, which is approximately 3m
-- Coded value range (-512..511)
-- representing -51200 to +51100 milliarcseconds,
-- 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
-- separate 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 semantic
-- 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(0nnnnnnnn - 1nnnnnnnn) followed by binary number of dangerous goods on board 00000001 - 00011000 - 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 00000000
-- 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..99999999),
  uncodeDangerousGoods2 INTEGER (0..99999999),
  uncodeDangerousGoods3 INTEGER (0..99999999),
  uncodeDangerousGoods4 INTEGER (0..99999999)
}

END

NOTE:
OSS ASN.1 and ECN Syntax Checker Version 8.2
Copyright (C) OSS Nokalva, Inc. 1999-2007. All rights reserved.

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 informative 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 =
"0x015C0681D54970D65C3597CA0420C41464583ADE68AC52E9BB8413F149C07414FB414F6010180813E82181823230"

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>
      </vehicleIdentificationNumber>
    </msdStructure>
  </msd>
</ECallMessage>
<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

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).
--  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”
ControlType ::= SEQUENCE {
  automaticActivation BOOLEAN,
  testCall BOOLEAN,
  positionCanBeTrusted BOOLEAN,
  vehicleType VehicleType
}

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 ::= 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:
  = 173881200 d = 0x0A5D3770
- If latitude is invalid or unknown, the value 0xFFFFFFF = 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 = \(-180^\circ 00'00.000''\)
\(= -180^\circ 60'60.000'' = -648000.000''\)
\(= -648\ 000\ 000\) Miliarseconds
\(= 0x\text{D9604E00}\)

\(\text{EXAMPLE}\ 11^\circ 37'2.52"\ E = 11.6173666\ long\)
\(= (11*3600)+(37*60)+2.52)'' = 41822.520''\)
which encodes to the following value:
\(= 41822520d = 0x\text{027E2938}\)

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

AdditionalData:
-- Further additional bytes of data encoded as in a
-- separate 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 00000000-0001011.

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, 00000000 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
Copyright (C) OSS Nokalva, Inc. 1999-2007. All rights reserved.

C0284I: Syntax checking file 'D:\00-000Archive\00-HGV eCall\MSD\HGVBASN1Module v1 110625.txt'.

C0285I: Global checking abstract syntax.

C0043I: 0 error messages, 0 warning messages and 2 informative 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 =
"0x015C0681D54970D65C3597CA0420C41464583ADE68AC52E9BB8413F149C07414FB414F6010180813E82181823230"

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>
    </msdStructure>
    <vehicleIdentificationNumber>
      <isowmi>WMI</isowmi>
      <isovds>VDSVDS</isovds>
    </vehicleIdentificationNumber>
  </msd>
</ECallMessage>
<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,example.com/path/to/name0000000,44158728417700000,9,63,1,12345678,12345679,12345680,12345681,12345682,12345683</data>
</optionalAdditionalData>
</msd>
</ECallMessage>
Annex C
(normative)

Easyguide : How to use this Technical Report

t.b.d
Bibliography