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Road Transport and Telematics

Working Group 14

After Theft Systems for Vehicle Recovery

Work Item WG14.3

Common Status Message Elements

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Contents

1 Introduction

1.1 Foreword

This document was developed by CEN TC 278 Road Transport & Traffic Telematics Working Group 14 (WG14) on the subject of After Theft Systems for Vehicle Recovery (ATSVR).

WG14 comprised representatives and experts from police, insurance associations (CEA), car manufacturers, transport associations, vehicle rental associations and ATSVR system and product providers. The work was also in cooperation with Europol and the European Police Cooperation Working Group (EPCWG).

The standard was developed to define an architecture within guidelines from CEN TC 278 through which a level of interoperability can be achieved between Systems Operating Centres (SOC) and law enforcement agencies (LEA), both nationally and internationally.

This will provide minimum standards of information and assurance to users as to the functionality of systems, thereby enabling the recovery of vehicles, detection of offenders and a reduction in crime.

This document should be read in conjunction with PrENVXXX Reference Architecture and Terminology which provides the preliminary framework for ATSVR concepts.

1.2 Scope

This document specifies the basic structure of the message elements, or items of information, that are put together to form the common message sets used in exchanging information in an After Theft System for Vehicle Recovery.

Documents prENV XXXX 14.4, 14.5 and 14.6 will define the content of these messages. The design is such that all currently identified information can be included in an unambiguous format, while allowing for additional items to be included should they either be required in the future or become available in the future.

These message elements can also be referenced in a unique manner and described in plain language for transmission by voice, fax or e-mail. Similarly the data can be encoded in XML language for electronic transmission.

Note is made of some existing standards and Pre-Standards that are related to this issue.

This issue aims to identify the main elements and illustrate the data concepts and way forward.

This issue contains changes to make all fields one octet long, thus allowing most content to be printed as ASCII characters.

2 Normative references

Ref: ISO 3166 2000 Codes for the representation of names of countries

Ref: ISO 3779 1983 Road vehicles – Vehicle Identification Numbers (VIN)

Ref: ISO 3780 1983 Road vehicles - World manufacturer identifier code

Ref ISO 8824 1993 Information Processing systems – Open System Interconnection. Specification of abstract syntax notation one (ASN.1)

Ref ISO 8825 1993 Information Processing systems – Open System Interconnection. Specification of ASN.1 Encoding rules

ISO TC204 WG1 – 14813-6(E) Data presentation in ASN.1

ISO TC204 WG1 - 14817 version 4 ITS/TICS central data registry and data dictionaries

ISO/DIS 14825 Intelligent Transport Systems – Geographic Data Files (GDF- Overall Data Specifications

Notes

PrENV12314-2 can be read as it was the basis for this document.

Related documents:

prENV XXXX 14.4 Short Range Interface / System Requirements
prENV XXXX 14.5 Long Range Interface / System Requirements
prENV XXXX 14.6 Message Interface / System Requirements
prENV XXXX 14.7

3 Definitions

For the purposes of this Standard, the following definitions apply.

Numerical notations are represented as follows:

Decimal ("normal") notation will have no subscript
e.g.: 127
Hexadecimal numbers will be denoted by the subscript 16
e.g. $7F_{16}$
Binary numbers will be denoted by the subscript 2
e.g. 011111_2

Characters will be encoded in ASCII and represented as follows:

Characters will have no subscript or hyphen
e.g. ABC59MNO

See also prENV XXXX Reference Architecture and Terminology.

4 Abbreviations

AEI	Automatic Equipment Identification
ASCII	American Standard Code for Information Interchange
ATSVR	After Theft System for Vehicle Recovery
AVI	Automatic Vehicle Identification
RTTT	Road Traffic and Transport Telematics

See also prENV XXXX Reference Architecture and Terminology.

5 Requirements

5.1 General Requirements

The coding structure defined in this Standard is an enabling structure. It is designed to allow combinations of data elements to be used in composite data structures. It is designed to allow as much interoperability of the data elements as possible. Data elements may be of any length and may be combined in many ways.

This Standard recognises that there will be systems of different capability that should be interoperable, even though the systems may be significantly different. Even where information is obtained by a proprietary system, the data, once collected, is held in a common interoperable format and so may be accurately and confidently used.

The standard has been designed according to the principles of ISO 8825-2 (ASN.1 Packed Encoding Rules). The encoding rules enable the chaining of multiple data elements to build complex data structures

The structure is built from a series of data elements that identify:

First the Sector Identifier indicating that it is an RTTT data structure
Second the RTTT Application Identifier
Third the Coding Structure Identifier
Fourth (et seq.) the data elements

By adopting this standard, some degree of compatibility can be achieved with AVI and AEI existing Standards.

The overall coding structure must:

be unambiguous and flexible enough to include relevant numbering structures
follow relevant standards
provide an exact coding of the data elements
be extendable to enable future expansion
be able to accommodate private structures

5.2 Data Structure

This section refers to a future General ASN.1 Coding Structure Standard being developed by CEN TC278. When this standard is available, this section will be replaced.

The schematic of the ASN.1 Message is:

RTTT Sector Identifier	Length	RTTT Application Identifier	Length	Coding Structure Identifier	Length	CS Data Field

Table 5.2

This example is for a data content field of 6 bytes or octets

RTTT sector Identifier *(to be found*)

nm_{16}

Length, number of bytes following this length field e.g. 11

$0B_{16}$

RTTT Application Identifier *(to be found*)

pq_{16}

Length, number of bytes following this length field e.g. 09

09_{16}

Coding Structure Identifier e.g. 1

41_{16}

Length, number of bytes following this length field e.g. 07

07_{16}

Data content – 7 bytes

Note that the length field defines the length of the rest of the message, excluding the length field itself.

In the example below the data contents have three data elements – country code, issuer and unique number. Note that each element does not have to be a multiple of 8 bits, although the Data content must be a multiple of 8 bits.

Country code 10 bits e.g. GB *this must be in full bytes if possible check with TC204*

Issuer 14 bits e.g. $110F_{16}$

Unique number 32 bits e.g. 12345678_{16}

Total 56 bits or 7 bytes.

6 General Rules for Data Elements

6.1 General Points

This section defines some general codes and rules used by the Data Elements section, these codes and rules have been constructed from existing standards where available. Each of the data elements will be given a unique reference.

6.2 Country Code

Country code values shall be assigned according to ISO 3166:2000 codes for the representation of names of countries and their subdivisions in 3 characters: Country codes as at 13th February 2002 can be seen at:

http://www.un.org/depts/unsd/methods/m49alpha.htm

Value range AAA to ZZZ, extract from this web site given below

Numerical code	Country or area name	Alpha code	Numerical code	Country or area name	Alpha code
004	Afghanistan	AFG	418	Lao People's Democratic Republic	LAO
008	Albania	ALB	428	Latvia	LVA
012	Algeria	DZA	422	Lebanon	LBN
016	American Samoa	ASM	426	Lesotho	LSO
020	Andorra	AND	430	Liberia	LBR
024	Angola	AGO	434	Libyan Arab Jamahiriya	LBY
660	Anguilla	AIA	438	Liechtenstein	LIE
028	Antigua and Barbuda	ATG	440	Lithuania	LTU
032	Argentina	ARG	442	Luxembourg	LUX
051	Armenia	ARM	450	Madagascar	MDG
533	Aruba	ABW	454	Malawi	MWI
036	Australia	AUS	458	Malaysia	MYS
040	Austria	AUT	462	Maldives	MDV
031	Azerbaijan	AZE	466	Mali	MLI
044	Bahamas	BHS	470	Malta	MLT
048	Bahrain	BHR	584	Marshall Islands	MHL
050	Bangladesh	BGD	474	Martinique	MTQ
052	Barbados	BRB	478	Mauritania	MRT
112	Belarus	BLR	480	Mauritius	MUS
056	Belgium	BEL	484	Mexico	MEX
084	Belize	BLZ	583	Micronesia,	FSM
204	Benin	BEN	492	Monaco	MCO
060	Bermuda	BMU	496	Mongolia	MNG
064	Bhutan	BTN	500	Montserrat	MSR
068	Bolivia	BOL	504	Morocco	MAR
070	Bosnia & Herzegovina	BIH	508	Mozambique	MOZ
072	Botswana	BWA	104	Myanmar	MMR
076	Brazil	BRA	516	Namibia	NAM
092	British Virgin Islands	VGB	520	Nauru	NRU
096	Brunei Darussalam	BRN	524	Nepal	NPL
100	Bulgaria	BGR	528	Netherlands	NLD
854	Burkina Faso	BFA	530	Netherlands Antilles	ANT
108	Burundi	BDI	540	New Caledonia	NCL
116	Cambodia	KHM	554	New Zealand	NZL

Numerical code	Country or area name	Alpha code	Numerical code	Country or area name	Alpha code
120	Cameroon	CMR	558	Nicaragua	NIC
124	Canada	CAN	562	Niger	NER
132	Cape Verde	CPV	566	Nigeria	NGA
136	Cayman Islands	CYM	570	Niue	NIU
140	Central African Repub.	CAF	574	Norfolk Island	NFK
148	Chad	TCD	580	Northern Mariana Is	MNP
830	Channel Islands		578	Norway	NOR
152	Chile	CHL	275	Occupied Palestinian Territory	PSE
156	China	CHN	512	Oman	OMN
344	Hong Kong SAR of China	HKG	586	Pakistan	PAK
446	Macao SAR of China	MAC	585	Palau	PLW
170	Colombia	COL	591	Panama	PAN
174	Comoros	COM	598	Papua New Guinea	PNG
178	Congo	COG	600	Paraguay	PRY
184	Cook Islands	COK	604	Peru	PER
188	Costa Rica	CRI	608	Philippines	PHL
384	Cote d'Ivoire	CIV	612	Pitcairn	PCN
191	Croatia	HRV	616	Poland	POL
192	Cuba	CUB	620	Portugal	PRT
196	Cyprus	CYP	630	Puerto Rico	PRI
203	Czech Republic	CZE	634	Qatar	QAT
408	Democratic People's Republic of Korea	PRK	410	Republic of Korea	KOR
180	Democratic Republic of the Congo	COD	498	Republic of Moldova	MDA
208	Denmark	DNK	638	Réunion	REU
262	Djibouti	DJI	642	Romania	ROU
212	Dominica	DMA	643	Russian Federation	RUS
214	Dominican Republic	DOM	646	Rwanda	RWA
626	East Timor	TMP	654	Saint Helena	SHN
218	Ecuador	ECU	659	Saint Kitts and Nevis	KNA
818	Egypt	EGY	662	Saint Lucia	LCA
222	El Salvador	SLV	666	Saint Pierre & Miquelon	SPM
226	Equatorial Guinea	GNQ	670	Saint Vincent and the Grenadines	VCT
232	Eritrea	ERI	882	Samoa	WSM
233	Estonia	EST	674	San Marino	SMR
231	Ethiopia	ETH	678	Sao Tome and Principe	STP
234	Faeroe Islands	FRO	682	Saudi Arabia	SAU
238	Falkland Islands (Malvinas)	FLK	686	Senegal	SEN
242	Fiji	FJI	690	Seychelles	SYC
246	Finland	FIN	694	Sierra Leone	SLE
250	France	FRA	702	Singapore	SGP
254	French Guiana	GUF	703	Slovakia	SVK
258	French Polynesia	PYF	705	Slovenia	SVN
266	Gabon	GAB	090	Solomon Islands	SLB
270	Gambia	GMB	706	Somalia	SOM
268	Georgia	GEO	710	South Africa	ZAF
276	Germany	DEU	724	Spain	ESP
288	Ghana	GHA	144	Sri Lanka	LKA

Numerical code	Country or area name	Alpha code	Numerical code	Country or area name	Alpha code
292	Gibraltar	GIB	736	Sudan	SDN
300	Greece	GRC	740	Suriname	SUR
304	Greenland	GRL	744	Svalbard and Jan Mayen Islands	SJM
308	Grenada	GRD	748	Swaziland	SWZ
312	Guadeloupe	GLP	752	Sweden	SWE
316	Guam	GUM	756	Switzerland	CHE
320	Guatemala	GTM	760	Syrian Arab Republic	SYR
324	Guinea	GIN	158	Taiwan Province of China	TWN
624	Guinea-Bissau	GNB	762	Tajikistan	TJK
328	Guyana	GUY	764	Thailand	THA
332	Haiti	HTI	807	The former Yugoslav Republic of Macedonia	MKD
336	Holy See	VAT	768	Togo	TGO
340	Honduras	HND	772	Tokelau	TKL
348	Hungary	HUN	776	Tonga	TON
352	Iceland	ISL	780	Trinidad and Tobago	TTO
356	India	IND	788	Tunisia	TUN
360	Indonesia	IDN	792	Turkey	TUR
364	Iran (Islamic Republic)	IRN	795	Turkmenistan	TKM
368	Iraq	IRQ	796	Turks & Caicos Islands	TCA
372	Ireland	IRL	798	Tuvalu	TUV
833	Isle of Man		800	Uganda	UGA
376	Israel	ISR	804	Ukraine	UKR
380	Italy	ITA	784	United Arab Emirates	ARE
388	Jamaica	JAM	826	United Kingdom	GBR
392	Japan	JPN	834	United Republic of Tanzania	TZA
400	Jordan	JOR	840	United States	USA
398	Kazakhstan	KAZ	850	United States Virgin Islands	VIR
404	Kenya	KEN	858	Uruguay	URY
296	Kiribati	KIR	860	Uzbekistan	UZB
414	Kuwait	KWT	548	Vanuatu	VUT
417	Kyrgyzstan	KGZ	862	Venezuela	VEN
			704	Viet Nam	VNM
			876	Wallis and Futuna Islands	WLF
			732	Western Sahara	ESH
			887	Yemen	YEM
			891	Yugoslavia	YUG
			894	Zambia	ZMB

6.3 Alphabet Indicator

This is the alphabet used in the rest of the message or until another alphabet indicator is read. This is referenced in prENV 12314-2.

Definition	Decimal Code	Hex Code
latinAlphabetNo1	1	1_{16}
latinAlphabetNo2	2	2_{16}
latinAlphabetNo3	3	3_{16}
latinAlphabetNo4	4	4_{16}
latincyrillicAlphabet	5	5_{16}

latinArabicAlphabet	6	6_{16}
latinGreecAlphabet	7	7_{16}
latinHebrewAlphabet	8	8_{16}
latinAlphabetNo5	9	9_{16}
latinAlphabetNo6	10	A_{16}
two OctetBMP	128	80_{16}
fourOctetCanonical	129	81_{16}

Default latinAlphabetNo1

6.4 Date

The date element will be fixed format of eight octets of numbers coded as ASCII characters. It may require a time zone parameter when used, depending on context.

YYYYMMDD

e.g. 20011206 for the 6th of December 2001

6.5 Time

Time will default to UTC and be of twelve octets coded as ASCII characters. This format allows sorting by date. The Time Data Element requires time zone information.

YYYYMMDDhhmm

e.g. 200112060958 for 09:58 on the 6th of December 2001

6.6 Time Zone

The time zone will be represented by the hours difference from UTC. The first octet will be the sign "+" or "-" and the second and third will be the hours difference.

SZZ

e.g. +01 for winter time in Europe.

6.7 String Delimiters

The standard delimiters of "null" 00_{16} or <<Carriage Return>> or <<Carriage Return+Line Feed>> will be used.

7 Data Protection

7.1 General requirements

All data shall be accurate, up to date and secure, particularly where this relates to personal data. All data shall be kept in accordance with the data protection principles set out by the Council of Europe Convention on 28th January 1981 and shall take account of Recommendation R(87)15 of the Committee of Ministers of the Council of Europe 17th September 1987 concerning the use of personal data in the police sector.

There are some variations in requirements across EU member states. Therefore the data shall also be kept in accordance with the national

data protection requirements of the country where the data originates and the country where the data is stored.

A. Annex - Data Elements

A.1. List of Data Elements

All the messages considered to be part of the Common Message Set will consist of a number of the following message elements.

Element Description from heading		CSI Code$_{16}$	Document Reference
Date		01	A.2
Date and Time		02	A.3
Dynamic Data, Descriptive Location		11	A.4
Dynamic Data, Direction		12	A.5
Dynamic Data, Geographic Location		13	A.6
Dynamic Data, Speed		14	A.7
Incident, LEA holding original report		20	A.8
Incident, Place of Theft		21	A.14
Incident, Report		22	A.9
Incident, Reporting Person		23	A.10
Incident, Stolen Status		24	A.11
Incident, Theft Update, Location		25	A.13
Incident, Time of Theft		26	A.12
Incident, Unique Reference Number		27	A.15
Incident, vehicle load		28	A.34
Incident, vehicle reference		2A	A.36
LEA, Communication		30	A.16
LEA, Identifier		31	A.17
Message Reference		32	A.18
Name & Address, Keeper		33	A.19
Name & Address, Owner		34	A.20
SOC, Communication Number		35	A.21
SOC, Identifier		36	A.22
Message Time		37	A.37
Vehicle, ATSVR Details		48	A.23
Vehicle, Body Type		49	A.24
Vehicle, Colour		50	A.25
Vehicle, Engine Number		47	A.26
Vehicle, Engine Size		41	A.27
Vehicle, Manufacturer		42	A.28
Vehicle, Model		43	A.29
Vehicle, Nationality & Licence Plate		44	A.30
Vehicle, Other descriptive information		51	A.31
Vehicle, date of manufacture		52	A.37
Vehicle, Registration Date		46	A.32
Vehicle, VIN		45	A.33

A.2. Date

A.2.1. Function

The basic date field is used for defining non-time critical time and data information, such as date of first vehicle registration. This is distinct from the time and date of the message.

A.2.2. Coding Format

Code	Data element size	Time Zone	Time
01_{16}	$0F_{16}$	3 octets	12 octets

A.3. Date and Time

A.3.1. Function

All dynamic data must be referenced to a specific date and time at which the data was true. This is distinct from the time and date of the message.

A.3.2. Coding Format

Code	Data element size	Time Zone	Time
02_{16}	$0F_{16}$	3 octets	12 octets

A.4. Dynamic Data, Descriptive Location

A.4.1. Function

The function of this field is to describe a location by reference to visual landmarks apparent to an observer at that location. It may include reference to road numbers allocated by Government e.g.: A1234. It may include distances from landmarks. The text description will be in ASCII characters. A road Intersection is regarded as two road descriptors. A relative position is regarded as range and bearing to a Geographic Location. If required, because of the complexity of describing a location or route, more than one dynamic data, descriptive location, elements can be included in one message.

A.4.2. Coding Format

Code	Data element size	Alphabet Code	Text Description
11_{16}	1 octet	1 octet	Variable

A.5. Dynamic Data, Direction

A.5.1. Function

The function of this field is to give the direction of movement of a vehicle. Care must be exercised to distinguish between known direction and unknown direction.

A.5.2. Coding Structure

Code	Data element size	Descriptor	Direction value
12_{16}	02_{16} or 04_{16}	1 octet	1 octet or 3 octets

Direction descriptor will be:

Description	**Code**
Direction not known	00_{16}
Bearing in degrees	01_{16}
8-point compass	02_{16}
Future spare	03_{16} – FF_{16}

Direction will be given as a true bearing or 8-point compass

When given as a bearing it will be three numeric characters coded as ASCII characters. The bearing is strictly relative to the ellipsoid used in calculating the position. For practical purposes the differences will be small and will be ignored. Thus a single value in whole degrees, 0 to 359, will be allowed.

When given as an 8-point compass a single ASCII numeric character will be used, value 0 to 7, zero is north and increment clockwise. For example:

Direction Value	English	French	German	…..
0	North	Nord	Nord	
1	North East	Nord Est	Nord Ost	
2	East	Est	Ost	
3	South East	Sud Est	Süd Ost	
4	South	Sud	Süd	
5	South West	Sud Ouest	Süd West	
6	West	Ouest	West	
7	North West	Nord Ouest	Nord West	

A.6. Dynamic Data, Geographic Location

A.6.1. Function

The function of this field is to describe a location in geographic co-ordinates and will include the frame of reference of those co-ordinates. E.g. Latitude and Longitude may be given together with the figure of the earth (e.g. WGS84). If given in Grid format, then it will include reference to the grid origin (e.g. OSGB36).

A.6.2. Coding Format

When given in latitude and longitude the co-ordinates will be given in degrees, minutes, seconds and hundredths of minutes. Grid positions are always in metres and are given to one metre precision.

Definition	**Co-ordinate Code**
Lat / Long WGS84	01_{16}
L/L Gauss-Krüger	02_{16}
L/L Hayford 1924 (International)	03_{16}
L/L Rijksdriehoeksnet (Bessel 1841)	04_{16}
	05_{16}
	06_{16}
	07_{16}
	08_{16}
Grid, OSGB 36	09_{16}
Grid, UTM	$0A_{16}$
Future Spare	$0B_{16}$ to FF_{16}

Latitude DDMMSSss 8 octets,

Longitude DDDMMSSss 9 octets,

DD degrees
MM Minutes
SS Seconds
ss fractions of seconds

1/100 of a second of Latitude is approximately 30 cm and 1/100 of a second of longitude is approximately about (30cm x Cos Lat)

Code	Data element size	Descriptor	Latitude	Longitude
13_{16}	13_{16}	2 octets	8 octets	9 octets

Position in Grid co-ordinates

7 digits are required in each co-ordinate, leading zeros are required

Code	Data element size	Descriptor	Zone code	Eastings	Northings
13_{16}	13_{16}	2 octets	3 octets	7 octets	7 octets

Note: Universal Transverse Mercator (UTM) (Gauss-Krüger type) co-ordinates define two dimensional, horizontal positions in metre units. The sixty UTM *zone numbers* designate 6 degree wide longitudinal strips extending from 80 degrees South latitude to 84 degrees North latitude. UTM *zone characters* are letters that designate 8-degree zones extending north and south from the equator. Beginning at 80° south and proceeding northward, twenty bands are lettered C through X, omitting I and O. These bands are all 8° wide except for band X, which is 12° wide (between 72-84 N). e.g. the UK is in zone 30U and Sicily is in zone 33S.

Thus a UTM position must contain the three-character zone code.

A.7. Dynamic Data, Speed

A.7.1. Function

The function of this field is to give the speed of a vehicle. Care must be exercised to distinguish between zero speed and unknown speed.

Speed will be given in units between 0 and 255 in one octet and will be to whole numbers.

A.7.2. Coding Structure

Description	**Speed Units**
Engine and Speed state not known	00_{16}
Engine On, Speed unknown	01_{16}
Engine On, Speed in Kilometres per hour,	02_{16}
Engine On, Speed in Miles per hour,	03_{16}
Engine Off, Speed unknown	04_{16}
Engine Off, Speed in Kilometres per hour,	05_{16}
Engine Off, Speed in Miles per hour,	06_{16}
Future spare	$07_{16} – FF_{16}$

Code	Data element size	Speed Units	Speed Value
14_{16}	02_{16}	1 octet	1 octet

A.8. Incident, LEA holding original report

A.8.1. Function

This is a free form descriptive data element and can be alphabetic or numeric as agreed or accepted by a national authority. The coding structure is ASCII.

A.8.2. Coding Structure

Code	Data element size	LEA identifier
20_{16}	1 Octet	Variable

A.9. Incident, Report

A.9.1. Function

The function of this field is to describe how the incident happened; it will therefore be in a language and in free format. Consideration should be given to breaking an incident report into smaller elements that are conducive to more rigid definition.

Note that time and place of occurrence, the registered keeper and driver fields are already available.

A.9.2. Coding Format

Code	Data element size	Incident type	Alphabet code	Text description
22_{16}	Variable	I octet	1 octet	Variable

Type of incident	**Code**
Unknown / not entered in report	00_{16}
Unattended vehicle	01_{16}
Theft with armed threat	02_{16}
Theft with physical violence	03_{16}
Part of other criminal activity	04_{16}
Hostage in vehicle	05_{16}
Possible suicide situation	06_{16}
Future Spares	07_{16} to FF_{16}

A.10. Incident, Reporting Person

A.10.1. Function

The function of this element is to identify the person who reported the theft of the vehicle. Thus it will contain a name field and an address field. Both fields will be variable and alphanumeric. Note that the Reporting Person could be a SOC. This data shall not be translated.

A.10.2. Coding Structure

Code	Data element size	Alphabet code	Person name	Data element size	Alphabet code	Person's address
23_{16}	1 octet	1 octet	Variable	1 octet	1 octet	Variable

A.11. Incident, Stolen Status

A.11.1. Function

The Incident status field can be incorporated in any message to indicate the status or change of status of the incident.

A.11.2. Coding Structure

Code	Data element size	Incident Status	Status
24_{16}	02_{16}	1 octet	1 octet

The status byte will be related to the status information held in the OBE. The least significant bit will be equivalent to the "You may be stolen" status, while the next most significant bit will be the "Theft Confirmed" status.

Status	**Code**
Not stolen	00_{16}
Presumed stolen	01_{16}
Confirmed as stolen	02_{16}
Future Spare	03_{16}
Reported stolen but not confirmed	04_{16}
Presumed, reported but not confirmed	05_{16}
Future Spare	06_{16}
Incident closed	07_{16}
Vehicle found	08_{16}
Reported or presumed stolen and found	09_{16}
Confirmed stolen and found	$0A_{16}$
Reported stolen and recovered	$0B_{16}$
Future Spare	$0C_{16}$ to $0F_{16}$
Fraudulent possession (e.g. overdue hire)	10_{16}
Future Spare	11_{16} to FF_{16}

A.12. Incident, Time of Theft

A.12.1. Function

The Time of Theft shall be the time known or estimated when the theft is reported. A number of other variations are available. More than one Incident, Time of Theft message element may be used if required to more accurately define the time, for example "after" time *n* and "before" time *m*.

A.12.2. Coding Structure

Code	Data element size	Time Type	Time Zone	Time
26_{16}	10_{16}	1 octet	3 octets	12 octets

Time Type	Time Type Code
TimeOfReport	01_{16}
TimeOfTheftActual	02_{16}
TimeOfTheftAfter	03_{16}
TimeOfTheftBefore	04_{16}
TimeNextReportReqd	10_{16}

A.13. Incident, Theft Update, Location

A.13.1. Function

This message will be a correction to the original Incident Report. It shall not be used to update the position of a vehicle subsequent to the original report.

A.13.2. Coding Structure

Shall be as defined for Dynamic Description and Incident, Location

Code	Data element size	Alphabet Code	Text Description
25_{16}	1 octet	1 octet	Variable

A.14. Incident, Place of Theft

A.14.1. Function

The function of this field is to describe the place of theft by reference to visual landmarks apparent to an observer at that location It may include reference to road numbers allocated by Government e.g.: A1234. It may include distances from landmarks.

A.14.2. Coding Format

Code	Data element size	Alphabet code	Text description
21_{16}	1 octet	1 octet	Variable

A.15. Incident, Unique Reference Number

A.15.1. Function

The content of this field will be defined by the Law Enforcement Agency in whose jurisdiction the incident was reported. It may in fact be alphanumeric. Thus it shall have the LEA identifier included.

If the LEA field is left blank, then the number will be that generated by the SOC to define the incident.

A.15.2. Coding Structure

Code	Data element size	LEA Identifier	Data element size	Alphabet code	Unique reference number
27_{16}	1 octet	tbd	1 octet	1 octet	Variable

A.16. LEA, Communication Type

A.16.1. Function

The LEA communications type defines the method of communicating with the LEA, this message will normally be sent to the SOC or SOCs involved in the Incident. When a telephone number is given it shall start with the country access code.

E-mail address will be coded in ASCII and will always be interpreted as lower case characters

A.16.2. Communications Type

Code	Data element size	LEA Identifier	Communications Type	Communications alpha-numeric
30_{16}	1 octet	tbd	1 octet	Variable

Type	**Code**
Telephone	00_{16}
Fax	01_{16}
e-mail	02_{16}
Other	03_{16}
Future Spare	04_{16} to $0F_{16}$

A.17. LEA, Identifier

A.17.1. Function

This will define the LEA involved in the Incident; it will include the Country Code (Paragraph 6.2) to allow ease of use. The LEA identifier shall be agreed between the LEAs operating in a country.

A.17.2. Coding Structure

Code	Data element size	Country Code	LEA Identifier
31_{16}	04_{16}	2 octets	2 octets

A.18. Message Reference

A.18.1. Function

The Message Reference field shall be included in any message it shall be used as a unique identifier to an Incident of reported or confirmed theft and will allow all messages and the data they contain to be linked together.

A.18.2. Coding Structure

Code	Data element size	Country Code	Message Reference
32_{16}	1 octet	Two octets	To be agreed

A.19. Name & Address, Keeper

A.19.1. Function

The function of this element is to identify the official keeper of the vehicle. Thus it will contain a name field and an address field. Both fields will be variable and alphanumeric. The contents should not be translated into different languages.

A.19.2. Coding Structure

Code	Data element size	Alphabet code	Keeper name	Data element size	Alphabet code	Keeper address
33_{16}	1 octet	1 octet	Variable	1 octet	1 octet	Variable

A.20. Name & Address, Owner

A.20.1. Function

The function of this element is to identify the official owner of the vehicle. Thus it will contain a name field and an address field. Both fields will be variable and alphanumeric. The contents should not be translated into different languages.

A.20.2. Coding Structure

Code	Data element size	Alphabet code	Keeper name	Data element size	Alphabet code	Keeper address
34_{16}	1 octet	1 octet	Variable	1 octet	1 octet	Variable

A.21. SOC, Communication Number

A.21.1. Function

To distinguish between messages and to provide an audit trail of the incident.

A.21.2. Coding Structure

Code	Data element size	SOC, Communications Number
35_{16}	11 octet	

A.22. SOC, Identifier

A.22.1. Function

This will define the SOC involved in the Incident; it will include the Country Code (Paragraph 6.2) to allow ease of use. The LEA in whose territory the SOC operates shall define the SCO identifier.

A.22.2. Coding Structure

Code	Data element size	Country Code	SOC identifier
36_{16}	1 octet	Two octets	Variable

A.23. Vehicle, ATSVR Details

A.23.1. Function

This field describes to users the type of ATSVR fitted to the vehicle, this allows the SOC and LEA to better interpret the data that results from activation of the ATSVR during the incident.

The type code is given in two parts, the first defines the generic method and the second is used to describe sub types. The sub-types shall be submitted by ATSVR system manufacturers to the competent body maintaining this standard.

If more than one ATSVR system is fitted, then the data element size will be increased by 02_{16} for each pair of octets used to describe the equipment fitted.

A.23.2. Coding Structure

Type	ATSVR Type	Sub type
Detection Thru Signalling	10 - $1F_{16}$	00 – FF_{16}
Tracking thru Location by Geographic Positioning	20 - $2F_{16}$	
Detection by signalling thru relative Position / Homing	30 - $3F_{16}$	
Homing thru Direction finding	40 - $4F_{16}$	
Detection thru Consulting	50 - $5F_{16}$	
Selective Consulting	60 - $6F_{16}$	
Future Spare	7F – FF_{16}	

Code	Data element size	ATSVR Type	Sub type
48_{16}	02_{16}	1 octet	1 octet

A.24. Vehicle, Body Type

A.24.1. Function

This field describes the visual appearance of a vehicle to which information is attached. Plant, or construction equipment, coding is included for completeness and compatibility with other information systems.

A.24.2. Coding structure

Code	Data element size	Body Type
49_{16}	6 bits	1 octet

English Description	**Code**
Unknown	00_{16}
Saloon / Hatchback	01_{16}
Van	02_{16}
Estate	03_{16}
Convertible	04_{16}
Sports	05_{16}
Van	06_{16}
Pick-up	07_{16}
4 x 4	08_{16}
Motorcycle	09_{16}
Moped	$0A_{16}$
Scooter	$0B_{16}$
Motor home / caravan	$0C_{16}$
3 wheeled vehicle	$0D_{16}$
Lorry, rigid	$0E_{16}$
Tractor Unit, Articulated	$0F_{16}$
Trailer, Articulated, Curtain-sider	10_{16}
Trailer, Articulated, Rigid side	11_{16}
Future Spare	12-$1F_{16}$
Plant, Wheeled or tracked, driven machines more than 6 tonnes	20_{16}
Plant, Wheeled or tracked, driven machines less than 6 tonnes	21_{16}
Plant, Non-driven equipment	22_{16}
Plant, Portable tools	23_{16}
Plant, Attachments	24_{16}
Plant, unpowered items	25_{16}
Future Spare	26-FF_{16}

A.25. Vehicle, Colour

A.25.1. Function

The Vehicle Colour field describes the colour appearance of the vehicle, a two-colour description is allowed, where the primary colour is the predominant colour

A.25.2. Coding Structure

Code	Data element size	Primary Colour	Secondary Colour
50_{16}	02_{16}	1 octet	1 octet

Colour Chart – the other language equivalent to be agreed

English Description	**Code**	**English Description**	**Code**
No colour	00_{16}	Pink	OD_{16}
Beige	01_{16}	Purple	OE_{16}
Black	02_{16}	Red	OF_{16}
Blue	03_{16}	Silver	10_{16}
Bronze	04_{16}	Turquoise	11_{16}
Brown	05_{16}	White	12_{16}
Cream	06_{16}	Yellow	13_{16}
Gold	07_{16}	Future spare	14_{16}
Green	08_{16}	Future spare	15_{16}
Grey	09_{16}	Future spare	16_{16}
Maroon	$0A_{16}$	Future spare	17_{16}
Multi	$0B_{16}$	Future spare	18_{16}
Orange	OC_{16}	Future spare	$19 – FF_{16}$

A.26. Vehicle, Engine Number

A.26.1. Function

The function of the engine number field is to act as a basic information source.

A.26.2. Coding Structure

Code	Data element size	Alphanumeric
47_{16}	1 octet	variable

A.27. Vehicle, Engine Size

A.27.1. Function

The function of the engine size field is to act as a basic information source. The units will be cc for types 1 through 3.

A.27.2. Coding Structure

Code	Data element size	Engine type	Alphanumeric
41_{16}	05_{16}	1 octet	4 octets

Engine type data

Type	**Code**	**Size and measure**

Petrol	01_{16}	Numeric cubic centimetres
Diesel	02_{16}	Numeric cubic centimetres
LPG	3_{16}	Numeric cubic centimetres
Electric	04_{16}	??
Future Spare	$05\text{-}FF_{16}$	

A.28. Vehicle, Manufacturer

A.28.1. Function

The function of the vehicle manufacturer field is to act as a basic information source. The format will be that of free form alphanumeric.

A.28.2. Coding Structure

Code	Data element size	Alphabet code	Manufacturer name
42_{16}	1 octet	1 octet	Variable

A.29. Vehicle, Model

A.29.1. Function

The function of the vehicle model field is to act as a basic information source. The format will be that of free form alphanumeric.

A.29.2. Coding Structure

Code	Data element size	Alphabet code	Model name
43_{16}	1 octet	8 bits	Variable

A.30. Vehicle, Nationality & Licence Plate

A.30.1. Function

The Licence Plate information is the basic form of vehicle identification; each licence plate is unique to each country and may not be in a Latin script, hence the need to define the alphabet of the number plate.

A.30.2. Coding Structure

The data structure would be:

Code	Data element size	Country code	Alphabet code	Licence Plate Number
44_{16}	Variable	3 octets	1 octet	Variable bits

A.31. Vehicle, Other descriptive information

A.31.1. Function

The function of the Other Descriptive Information field is to act as a place where any unstructured data can be placed and exchanged. The format will be that of free form alphanumeric.

A.31.2. Coding Structure

Code	Data element size	Alphabet code	Model name
51_{16}	Variable	1 octet	Variable

A.32. Vehicle, Registration Date

A.32.1. Function

The function of the vehicle registration field is to act as a basic information source. The format will be that of date.

A.32.2. Coding Structure

Code	Data element size	Numeric
46_{16}	06_{16}	6 octets

A.33. Vehicle, VIN

A.33.1. Function

A VIN is defined in ISO 3779 / 3780. For information it consists of 136 bits / 17 octets defining World Manufacturer Identifier, Vehicle Descriptor Section and Vehicle Indicator section.

A.33.2. Coding Structure

Code	Data element size	VIN
45_{16}	11_{16} octets	136 bits (17 octets)

A.34. Incident, Vehicle Load

A.34.1. Function

To describe the load of the vehicle

A.34.2. Coding Structure

Code	Data element size	Alphabet code	Text description
28_{16}	1 octet	1 octet	Variable

A.35. Incident, Vehicle Passengers

A.35.1. Function

To describe the passengers in the vehicle

A.35.2. Coding Structure

Code	Data element size	Alphabet code	Text description
29_{16}	1 octet	1 octet	Variable

A.36. Incident, Vehicle Reference

A.36.1. Function

If the VIN number may not be used because of National Regulations, then an alternative number must be provided.

A.36.2. Coding Format

Code	Data element size	VIN
$2A_{16}$	11_{16} octets	136 bits (17 octets)

A.37. Vehicle, Date of Manufacture

A.37.1. Function

To act as a basic reference source. The format will be that of date.

A.37.2. Coding Structure

Code	Data element size	Numeric
52_{16}	06_{16}	6 octets

A.38. Message Time

A.38.1. Function

Every message must include the time at which the message was sent. This is distinct from the time and date of the incident.

A.38.2. Coding Structure

Code	Data element size	Time Zone	Time
37_{16}	$0F_{16}$	3 octets	12 octets

B Passing Data by other means

B.1 Data by e-mail

Each message element can be described in the language of the LEA. Thus a form, printed or electronic, could be prepared with “n” rows, one row per item in Annex A. e.g:

Data Element Code	Local Language Description	Element Value
1 octet	1 octet	

If sent electronically then the recipient could substitute the Local Language Definition.

In the case of descriptive elements and name elements the body of the message element should not be translated. For instance the name of a vehicle manufacturer or vehicle owner shall never be translated. Descriptive text such as “proceeding in an easterly direction at 50 kph” will require translation.

B.2 Data by voice or Fax/Telecopy

B.2.1 When passing information by voice, then use of the Data Element title is required. E.g. “Vehicle, VIN nnnn.” This will reduce errors of understanding.

End of document.