EUROPEAN ORGANISATION FOR THE SAFETY OF
AIR NAVIGATION

EUROCONTROL

EUROCONTROL STANDARD DOCUMENT

FOR

SURVEILLANCE DATA EXCHANGE

Part 8

Transmission of SMGCS Data

SUR.ET1.ST05.2000-STD-08-01

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DOCUMENT DESCRIPTION

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Transmission of SMGCS Data

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Abstract

This document describes the application of ASTERIX to the transmission of SMGCS data.

Keywords

SMGCS	ASTERIX	Target Reports
Data Item	Category 11	UAP

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DOCUMENT STATUS AND TYPE

STATUS		**CATEGORY**		**CLASSIFICATION**	
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ELECTRONIC BACKUP

INTERNAL REFERENCE NAME : Asterix - Part 8

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DOCUMENT APPROVAL

The following table identifies all management authorities who have successively approved the present issue of this document.

AUTHORITY	NAME AND SIGNATURE	DATE
SURT Chairman	M. Rees	
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DOCUMENT CHANGE RECORD

The following table records the complete history of the successive editions of the present document.

EDITION	DATE	REASON FOR CHANGE	SECTIONS PAGES AFFECTED
0.10	June 1999	Creation of document	ALL
0.11	September 1999	Modifications in General Principles, items and UAP	ALL
0.12	February 2000	Modifications in General Principles, items and UAP	ALL
0.13	March 2000	Modifications in General Principles, items and UAP	ALL
0.14	October 2000	Modifications in General Principles, items and UAP	ALL
0.15	February 2001	Modifications in items and UAP	ALL

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1. INTRODUCTION

1.1 Scope

1.1.1 This document describes the message structure for the transmission of SMGCS:

- surveillance and flight plan data,
- alerts,
- manual attachment / detachment of flight plan to track,
- flight plan data update,
- holdbar status.

NOTE: At a further stage, the scope may be extended to cover control and monitoring data, guidance data and planning data.

1.1.2 SMGCS data are out of Category 011.

2. REFERENCES

2.1 General

The following Documents and Standards contain provisions which, through references in this text, constitute provisions of this Eurocontrol Document.

At the time of publication of this Eurocontrol Document, the editions indicated for the referenced documents and standards were valid.

Any revision of the referenced ICAO Documents shall be immediately taken into account to revise this Eurocontrol Document.

Revisions of the other referenced documents shall not form part of the provisions of this Eurocontrol Document until they are formally reviewed and incorporated into this Eurocontrol Document.

In the case of a conflict between the requirements of this Eurocontrol Document and the contents of the other referenced documents, this Eurocontrol Document shall take precedence.

2.2 Reference Documents

1. Eurocontrol Standard 000-1-92. Directives for the Uniform Drafting and Presentation of Eurocontrol Standard Documents. 1992.
2. Eurocontrol Standard SUR.ET1.ST05.2000-STD-01-01. All Purpose Structured Eurocontrol Surveillance Information Exchange - ASTERIX. Edition 1.26, Draft, November 2000.

3. DEFINITIONS, ACRONYMS AND ABBREVIATIONS

3.1 Definitions

For the purposes of this Eurocontrol Document, the following definitions shall apply:

3.1.1	**Calculated Item:**	A piece of information (e.g. the position of a target) derived from the raw sensor information through an intermediate processing such as transformation of co-ordinates, tracking, code conversion, etc.
3.1.2	**Catalogue of Data Items:**	List of all the possible Data Items of each Data Category describing the Data Items by their reference, structure, size and units (where applicable).
3.1.3	**Data Block:**	Unit of information seen by the application as a discrete entity by its contents. A Data Block contains one or more Record(s) containing data of the same category.
3.1.4	**Data Category:**	Classification of the data in order to permit inter alia an easy identification.
3.1.5	**Data Field:**	Physical implementation for the purpose of communication of a Data Item, it is associated with a unique Field Reference Number and is the smallest unit of transmitted information.
3.1.6	**Data Item:**	The smallest unit of information in each Data Category.
3.1.7	**Measured Item:**	A piece of information (e.g. the position of a target) derived from the sensor information and transmitted without any smoothing.
3.1.8	**Record:**	A collection of transmitted Data Fields of the same category preceded by a Field Specification field, signalling the presence/absence of the various Data Fields
3.1.9	**User Application Profile:**	The mechanism for assigning Data Items to Data Fields, and containing all necessary information which needs to be standardised for the successful encoding and decoding of the messages.

3.2 Acronyms and Abbreviations

For the purposes of this Eurocontrol Document the following shall apply:

°	Degree (angle)
ASTERIX	**A**ll Purpose **ST**ructured **Eurocontrol** su**R**veillance **I**nformation E**X**change
CAT	Data Category
EATMP	European Air Traffic Management Programme
FL	Flight Level, unit of altitude (expressed in 100's of feet)
FRN	Field Reference Number
FSPEC	Field Specification
FX	Field Extension Indicator
ICAO	International Civil Aviation Organization
kt	knot = NM/hour, unit of speed
LEN	Length Indicator
LSB	Least Significant Bit
NM	Nautical Mile, unit of distance (1852 metres)
PSR	Primary Surveillance Radar
RE	Reserved Expansion Indicator
REP	Field Repetition Indicator
s	second, unit of time
SAC	System Area Code
SIC	System Identification Code
SMGCS	Surface Movement Ground Control System
SMR	Surface Movement Radar
SMS	Surface Movement System
SP	Special Purpose Indicator
SPI	Special Position Identification
SSR	Secondary Surveillance Radar
STFRDE	Surveillance Task Force on Radar Data Exchange
SURT	Surveillance Team (EATMP)
UAP	User Application Profile (see Definitions)
UTC	Co-ordinated Universal Time
WGS 84	World Geodetic System 84

4. GENERAL PRINCIPLES

4.1 General

The transmission of SMGCS data shall require the transmission of seven types of messages:

- target reports, flight plan data and basic alerts,
- manual attachment of flight plan to track,
- manual detachment of flight plan to track,
- insertion of flight plan data,
- suppression of flight plan data,
- modification of flight plan data,
- holdbar status.

4.2 Time Management

4.2.1 Definition

The time stamp shall be consistent with the reported target position.

4.2.2 Requirements for Time Stamping

The timestamping shall comply with ICAO Annex 5.

4.3 Projection Systems and Geographical Co-ordinates

The exported calculated position is expressed in a 2D Cartesian co-ordinate system, which is a plane tangential to the WGS-84 Ellipsoid at the location of the reference point. The Y-axis points to the geographical north at that position. The X-axis is perpendicular to the Y-axis and points to the east. The X, Y co-ordinates are calculated using a suitable projection technique for the final 3D to 2D conversion (e.g. a stereographical projection).

All tracker derived information elements, shall be a consistent set of values, expressed in the same co-ordinate reference system (state vector components and the corresponding elements of the track quality vector).

4.4 Unused Bits in Data Items.

Decoders of ASTERIX data shall never assume and rely on specific settings of spare or unused bits. However in order to improve the readability of binary dumps of ASTERIX records, it is recommended to set all spare bits to zero.

4.5 User Application Profile and Data Blocks

4.5.1 A single User Application Profile (UAP) is defined and shall be used for both target reports and service messages.

4.5.2 Data Blocks shall have the following layout.

CAT = 011	**LEN**		**FSPEC**	Items of the first record		**FSPEC**	Items of the last record

where:

- Data Category (CAT) = 011, is a one-octet field indicating that the Data Block contains SMGCS data;
- Length Indicator (LEN) is a two-octet field indicating the total length in octets of the Data Block, including the CAT and LEN fields;
- FSPEC is the Field Specification.

4.6 Composition of Messages

4.6.1 Messages shall be composed of Data Items assembled in the order defined by the Field Reference Number (FRN) in the associated UAP.

4.6.2 When sent, items shall always be transmitted in a Record with the corresponding FSPEC bits set to one.

5. LAYOUT OF MESSAGES

5.1 Standard Data Items

The standardised Data Items which shall be used for the transmission of SMGCS data are defined in Table 1 and described in the following pages.

Table 1 - Standard Data Items of Category 011

Data Item Ref. No.	Description	System Units
I011/000	Message Type	N.A.
I011/010	Data Source Identifier	N.A.
I011/015	Service Identification	N.A.
I011/041	Position in WGS-84 Co-ordinates	$180°/2^{31}$
I011/042	Calculated Position in Cartesian Co-ordinates	1 m
I011/060	Mode-3/A Code in Octal Representation	N.A.
I011/090	Measured Flight Level	¼ FL
I011/092	Height	6.25 ft
I011/093	Calculated Flight Level	¼ FL
I011/140	Time of Track Information	1/128 s
I011/161	Track Number	N.A.
I011/170	Track Status	N.A.
I011/202	Calculated Track Velocity in Cartesian Coord.	1 m/s
I011/210	Calculated Acceleration	$0.25\ m/s^2$
I011/215	Calculated Rate of Climb/Descent	6.25 ft/min
I011/220	Aircraft Address	N.A.
I011/245	Target Identification	N.A.
I011/250	Mode S MB Data	N.A.
I011/270	Target Size & Orientation	Size: 1 m Orient.: 360°/128
I011/280	Type of Aircraft	N.A.
I011/282	Wake Vortex Category	N.A.
I011/284	Weight Category	N.A.
I011/286	Aircraft Registration	N.A.
I011/290	System Track Update Ages	N.A.
I011/300	Vehicle Fleet Identification	N.A.
I011/310	Pre-programmed Message	N.A.
I011/390	Flight Plan Related Data	N.A.
I011/430	Flight Status	N.A.
I011/500	Estimated Accuracies	N.A.
I011/600	Alert Messages	N.A.
I011/605	Tracks in Alert	N.A.
I011/610	Holdbar Status	N.A.

5.2 Description of Standard Data Items

5.2.1 Data Item I011/000, Message Type

Definition: This Data Item allows for a more convenient handling of the messages at the receiver side by further defining the type of transaction.

Format: One-octet fixed length Data Item.

Structure:

Octet no. 1

8	7	6	5	4	3	2	1
MESSAGE TYPE							

bits-8/1 Message Type

NOTES

1. In application where transactions of various types are exchanged, the Message Type Data Item facilitates the proper message handling at the receiver side.
2. All Message Type values are reserved for common standard use.
3. The following set of Message Types are standardised for category 011 records:
    1. Target reports, flight plan data and basic alerts
    2. Manual attachment of flight plan to track
    3. Manual detachment of flight plan to track
    4. Insertion of flight plan data
    5. Suppression of flight plan data
    6. Modification of flight plan data
    7. Holdbar status

5.2.2 Data Item I011/010, Data Source Identifier

Definition: Identification of the system from which the data are received.

Format: Two-octet fixed length Data Item.

Structure:

Octet no. 1								Octet no. 2							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
SAC = 00								SIC							

bits-16/9	(SAC)	System Area Code fixed to zero
bits-8/1	(SIC)	System Identification Code

NOTE: The SAC is fixed to zero to indicate a data flow local to the airport.

5.2.3 Data Item I011/015, Service Identification

Definition : Identification of the service provided to one or more users.
Format : One-Octet fixed length data item.
Structure:

Octet no. 1

8	7	6	5	4	3	2	1
Service Identification							

Bits-8/1	Service Identification

NOTE - the service identification is allocated by the SMGCS

5.2.4 Data Item I011/041, Position in WGS-84 Co-ordinates

Definition : Position of a target in WGS-84 Co-ordinates.
Format : Eight-octet fixed length Data Item
Structure:

Octet no. 8								Octet no. 7							
64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
Latitude in WGS - 84															

Octet no. 6								Octet no. 5							
48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
															LSB

Octet no. 4								Octet no. 3							
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Longitude in WGS - 84															

Octet no. 2								Octet no. 1							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
															LSB

bits-64/33	(Latitude)	In WGS.84 in two’s complement. Range -90 <= latitude <= 90 deg.
	(LSB)	= 180/2^{31} degrees
bits-32/1	(Longitude)	In WGS.84 in two’s complement. Range -180 <= longitude < 180
deg.		
	(LSB)	= 180/2^{31} degrees

5.2.5 Data Item I011/042, Calculated Position in Cartesian Co-ordinates

Definition: Calculated position of a target in Cartesian co-ordinates (two's complement form).

Format: Four-octet fixed length Data Item .

Structure:

Octet no. 1 Octet no. 2

32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
X-Component															LSB

Octet no. 3 Octet no. 4

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Y-Component															LSB

bit-17 (LSB) = 1 m, max. range +/- 32767 m

bit-1 (LSB) = 1 m, max. range +/- 32767 m

NOTE: it is considered extending the item from 4 to 8 bytes, in order to obtain a thinner resolution (0.25 m) and a higher range. This would facilitate a future merging with category 062.

5.2.6 Data Item I011/060, Mode-3/A Code in Octal Representation

Definition: Track Mode-3/A code converted into octal representation.

Format: Two-octet fixed length Data Item.

Structure:

Octet no. 1								Octet no. 2							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
0	0	0	0	A4	A2	A1	B4	B2	B1	C4	C2	C1	D4	D2	D1

bits-16/13	Spare bits set to 0
bits-12/1	Mode-3/A reply in octal representation

5.2.7 Data Item I011/090, Measured Flight Level

Definition : Last valid and credible flight level used to update the track, in two's complement representation.

Structure: Two-Octet fixed length data item.

Structure:

Octet no. 1								Octet no. 2							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
0	0	Measured Track Flight Level													LSB

bit 16-15	Spare bits set to zero
bit 14/1	Measured Track Flight Level (LSB) = 1/4 FL

5.2.8 Data Item I011/092, Height

Definition: Height above local 2D co-ordinate reference system (two's complement).

Format: Two-octet fixed length Data Item.

Structure:

Octet no. 1								Octet no. 2							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Height															LSB

bits-8/1	Height
	LSB= 6.25 ft
	Range= +/- 204 800 ft

5.2.9 Data Item I011/093, Calculated Flight Level

Definition: Calculated Flight Level of the track (smoothed), from barometric measurements (two's complement form).

Format: Two-octet fixed length Data Item.

Structure:

Octet no. 1 Octet no. 2

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
0	0	Flight Level													LSB

bits-16/15		spare bits set to zero
bits-14/1	(Flight Level)	LSB= 1/4 FL

5.2.10 Data Item I011/140, Time of Track Information

Definition: Absolute time stamping expressed as UTC.

Format: Three-octet fixed length Data Item.

Structure:

Octet no. 1

24	23	22	21	20	19	18	17
Time of							

Octet no. 2 Octet no. 3

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Track Information															LSB

bit-1 (LSB) = (2^{-7})s = 1/128 s

NOTE - The time of day value is reset to zero each day at midnight.

5.2.11 Data Item I011/161, Track Number

Definition: Identification of a fusion track (single track number)

Format: Two-octet fixed length Data Item.

Structure:

Octet no. 1 Octet no. 2

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
0	0	0	0	FUSION TRACK NUMBER(0…4095)											

bits-16/13	Spare bits set to zero.
bits-12/1	Fusion Track Number.

5.2.12 Data Item I011/170, Track Status

Definition : Status of a track.
Format : Variable length data item comprising a first part of one Octet, followed by 1-Octet extents as necessary.
Structure:

Octet no. 1

8	7	6	5	4	3	2	1
MON	GBS	MRH	SRC			CNF	FX

bit 8	(MON)	= 0	Multisensor track
		= 1	Monosensor track
bit 7	(GBS)	= 0	Transponder Ground bit not set or unknown
		= 1	Transponder Ground bit set
bit 6	(MRH)		Most Reliable Height
		= 0	Barometric altitude (Mode C) more reliable
		= 1	Geometric altitude more reliable
bits 5/3	(SRC)		Source of height for I011/092
		= 000	no source
		= 001	GPS
		= 010	3D radar
		= 011	triangulation
		= 100	height from coverage
		= 101	speed look-up table
		= 110	default height
		= 111	other or multiple
bit 2	(CNF) =	= 0	Confirmed track
		= 1	Tentative track
bit 1	(FX) =	= 0	end of data item
		= 1	extension into first extent

Structure of First Extent :

Octet no. 1

8	7	6	5	4	3	2	1
SIM	TSE	TSB	FRI/FOE		ME	MI	FX

bit-16	(SIM)	= 0	Actual track
		= 1	Simulated track
bit 7	(TSE)	= 0	default value
		= 1	track service end (i.e. last message transmitted to the user for the track).
bit 6	(TSB)	= 0	default value
		= 1	track service begin (i.e. first message transmitted to the user for the track)
bit 5/4	(FRI/FOE)	= 00	No Mode 4 interrogation
		= 01	Friendly target
		= 10	Unknown target
		= 11	No reply
bit 3	(ME)	= 0	default value
		= 1	Military Emergency present in the last report received from a sensor capable of decoding this data
bit 2	(MI)	= 0	default value
		= 1	Military Identification present in the last report received from a sensor capable of decoding this data
bit 1	(FX) =	= 0	End of data item
		= 1	Extension into second extent

Structure of Second Extent :

Octet no. 1

8	7	6	5	4	3	2	1
AMA	SPI	CST	0	0	0	0	FX

bit 8	(AMA)	= 0	track not resulting from amalgamation process
		= 1	track resulting from amalgamation process
bit 7	(SPI)	= 0	default value
		= 1	SPI present in the last report received from a sensor capable of decoding this data
bit 6	(CST)	= 0	default value
		= 1	coasted track
bits 5/2		spare bits set to zero	
bit 1	(FX)	= 0	End of data item
		= 1	Extension into next extent

5.2.13 Data Item I011/202, Calculated Track Velocity in Cartesian Co-ordinates

Definition: Calculated track velocity expressed in Cartesian co-ordinates.

Format: Three-octet fixed length Data Item.

Structure:

Octet no. 1

24	23	22	21	20	19	18	17
				VX			

Octet no. 2 Octet no. 3

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
			LSB						VY						LSB

bit-13& 1 (LSB) = 1 m/s
Max. range ± 2047 m/s

NOTE: it is considered extending the item from 3 to 4 bytes. This would allow a thinner LSB (0.25 m/s).

5.2.14 Data Item I011/210, Calculated Acceleration

Definition : Calculated Acceleration of the target, in two's complement form.
Format : Two-Octet fixed length data item.
Structure:

Octet no. 1

16	15	14	13	12	11	10	9
			Ax				LSB

Octet no. 2

8	7	6	5	4	3	2	1
			Ay				LSB

bits 9 & 1 (LSB) = 0.25 m/s^2
Max. range ± 31 m/s^2

5.2.15 Data Item I011/215, Calculated Rate Of Climb/Descent

Definition : Calculated rate of Climb/Descent of an aircraft, in two's complement form.
Format : Two-Octet fixed length data item.
Structure:

Octet no. 1 Octet no. 2

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
							Rate of Climb/Descent								LSB

bit 1 (LSB) = 6.25 feet/minute
Max. range ± 204800 feet/minute

5.2.16 Data Item I011/220, Aircraft Address

Definition: Aircraft address (24-bits address) assigned uniquely to each aircraft.

Format: Three-octet fixed length Data Item.

Structure:

Octet no. 1

24	23	22	21	20	19	18	17
Aircraft							

Octet no. 2 Octet no. 3

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Address															

bits-24/1	24-bits address, A23 to A0

5.2.17 Data Item I011/245, Target Identification

Definition: Target (aircraft or vehicle) identification in 8 characters.

Format: Seven-octet fixed length Data Item.

Structure:

Octet no. 1

56	55	54	53	52	51	50	49
STI		0	0	0	0	0	0

Octet no. 2 Octet no. 3

48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
MSB Character 1						Character 2						Character 3			

Octet no. 4 Octet no. 5

32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
		Character 4						Character 5							

Octet no. 6 Octet no. 7

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Character 6				Character 7						Character 8 LSB					

bits-56/55	(STI) = 00	Callsign or registration downlinked from transponder
	= 01	Callsign or registration not downlinked from transponder
	= 10	Registration not downlinked from transponder
bits-54/49		Spare bits set to zero
bits-48/1		Characters 1-8 (coded on 6 bits each) defining target identification.

5.2.18 Data Item I011/250, Mode S MB Data

Definition: Mode S Comm B data as extracted from the aircraft transponder.

Format: Repetitive Data Item starting with a one-octet Field Repetition Indicator (REP) followed by at least one BDS report comprising one seven octet BDS register and one octet BDS code.

Structure:

Octet no. 1

72	71	70	69	68	67	66	65
REP							

Octet no. 2 Octet no. 3

64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
MSB									MB						

Octet no. 4 Octet no. 5

48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
								DATA							

Octet no. 6 Octet no. 7

32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

Octet no. 8 Octet no. 9

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
							LSB	BDS1				BDS2			

bits-72/65	(REP)	Repetition factor
bits-64/9	(MB Data)	56-bit message conveying Mode S Comm B message data
bits-7/5	(BDS1)	Comm B Data Buffer Store 1 Address
bits-4/1	(BDS2)	Comm B Data Buffer Store 2 Address

5.2.19 Data Item I011/270, Target Size

Definition: Target size defined as the diameter of the circle that includes the detected target, and orientation of the target.

Format: Variable length Data Item comprising a first part of one octet, followed by one-octet extents as necessary.

Structure of First Part:

Octet no. 1

8	7	6	5	4	3	2	1
SIZE						LSB	FX

bit-2 (LSB) = 1 m

bit-1 (FX) = 0 End of Data Item
= 1 Extension into first extent

Structure of First Extent:

Octet no. 1

8	7	6	5	4	3	2	1
ORIENTATION						LSB	FX

bit-2 (LSB) = 360° / 128 = approx. 2.73°

bit-1 (FX) = 0 End of Data Item
= 1 Extension into next extent

NOTE: FX allows a potential extension of the item, as sending width is under study.

NOTE: ITEMS 280 282 284 286 WERE TO BE SUPPRESSED. TO FACILITATE A FUTURE MERGING WITH CAT062, IT IS PROPOSED TO INSERT THEM INTO AN ITEM LIKE I062/380

5.2.20 Data Item I011/280, Type of Aircraft TO BE SUPPRESSED?

Definition : Type of aircraft, as defined in ICAO Document 4444.

Format: Four octet fixed length data item.

Structure:

Octet no. 1								Octet no. 2							
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Character 1								Character 2							

Octet no. 3								Octet no. 4							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Character 3								Character 4							

NOTE: Each one of the four bytes composing the type of an aircraft contains an ASCII Character (upper-case alphanumeric characters with trailing spaces).

5.2.21 Data Item I011/282, Wake Vortex Category TO BE SUPPRESSED?

Definition: Wake Vortex Category of an aircraft.

Format: One octet fixed length data item.

Structure:

Octet no. 1							
8	7	6	5	4	3	2	1
Wake Vortex Category							

bits-8/1 ASCII character :

L : Light
S : Small
M : Medium
H : Heavy

5.2.22 Data Item I011/284, Weight Category TO BE SUPPRESSED?

Definition: Weight Category of an aircraft.

Format: One octet fixed length data item.

Structure:

Octet no. 1							
8	7	6	5	4	3	2	1
Weight Category							

bits-8/1 ASCII character :
L : Light
M : Medium
H : Heavy

5.2.23 Data Item I011/286, Aircraft Registration TO BE SUPPRESSED?

Definition: Registration of an aircraft.

Format: Seven octet fixed length data item.

Structure:

Octet no. 1							
56	55	54	53	52	51	59	49
Character 1							

Octet no. 2								Octet no. 3							
48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
Character 2								Character 3							

Octet no. 4								Octet no. 5							
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Character 4								Character 5							

Octet no. 6								Octet no. 7							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Character 6								Character 7							

NOTE - Each one of the seven Octets contains an ASCII Character. The Registration is always left adjusted. It contains up to seven upper-case alphanumeric characters, the remaining character positions (if any) are padded with space characters.

5.2.24 Data Item I011/290, System Track Update Ages

Definition : Ages of the last plot/local track, or the last *valid* mode-A/mode-C, used to update the system track.

Format : Compound Data Item, comprising a primary subfield of two octets, followed by up to twelve subfields.

Structure of Primary Subfield:

Octet no. 1								Octet no. 2							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
PSR	SSR	MDA	MFL	MDS	ADS	ADB	FX	MD1	MD2	LOP	TRK	MUL	0	0	FX

bit-16	(PSR)	PSR age = 0 Absence of Subfield #1 = 1 Presence of Subfield #1
bit-15	(SSR)	SSR age = 0 Absence of Subfield #2 = 1 Presence of Subfield #2
bit-14	(MDA)	Mode A age = 0 Absence of Subfield #3 = 1 Presence of Subfield #3
bit-13	(MFL)	Measured Flight Level age = 0 Absence of Subfield #4 = 1 Presence of Subfield #4
bit-12	(MDS)	Mode S age = 0 Absence of Subfield #5 = 1 Presence of Subfield #5
bit-11	(ADS)	ADS age = 0 Absence of Subfield #6 = 1 Presence of Subfield #6
bit-10	(ADB)	ADS-B age = 0 Absence of Subfield #7 = 1 Presence of Subfield #7
bit-9	FX	Extension indicator = 0 no extension = 1 extension
bit-8	(MD1)	Mode 1 age = 0 Absence of Subfield #8 = 1 Presence of Subfield #8
bit-7	(MD2)	Mode 2 age = 0 Absence of Subfield #9 = 1 Presence of Subfield #9
bit-6	(LOP)	Loop age = 0 Absence of Subfield #10 = 1 Presence of Subfield #10
bit-5	(TRK)	Track age = 0 Absence of Subfield #11 = 1 Presence of Subfield #11

bit-4	(MUL)	Multilateration age = 0 Absence of Subfield #12 = 1 Presence of Subfield #12
bits-3/2	(spare)	Spare bits set to zero
bit-1	FX	Extension indicator = 0 no extension = 1 extension

Structure of Subfield # 1:

PSR Age

Octet no. 1

8	7	6	5	4	3	2	1
PSR							LSB

bits-8/1	(PSR)	Age of the last primary report used to update the track
bit-1	(LSB)	= 1/4 s Maximum value =63.75s

Structure of Subfield # 2:

SSR Age

Octet no. 1

8	7	6	5	4	3	2	1
SSR							LSB

bits-8/1 report	(SSR)	Age of the last secondary used to update the track
bit-1	(LSB)	= 1/4 s Maximum value = 63.75s

Structure of Subfield # 3:

Mode A Age

Octet no. 1

8	7	6	5	4	3	2	1
MDA							LSB

bits-8/1	(MDA)	Age of the last valid Mode A report used to update the track
bit-1	(LSB)	= 1/4 s Maximum value = 63.75s

Structure of Subfield # 4:

Measured Flight Level Age

Octet no. 1

8	7	6	5	4	3	2	1
MFL							LSB

bits-8/1	(MFL)	Age of the last valid and credible Mode C used to update the track
bit-1	(LSB)	= 1/4 s Maximum value = 63.75s

Structure of Subfield # 5:

Mode S Age

Octet no. 1

8	7	6	5	4	3	2	1
MDS							LSB

bits-8/1	(MDS)	Age of the last Mode S report used to update the track
bit-1	(LSB)	= 1/4 s Maximum value = 63.75s

Structure of Subfield # 6:

ADS Age

Octet no. 1 Octet no. 2

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
ADS															LSB

bits-8/1	(ADS)	Age of the last ADS report used to update the track
bit-1	(LSB)	= 1/4 s Max. value = 16383.75s (> 4 hours)

Structure of Subfield # 7:

ADS-B Age

Octet no. 1

8	7	6	5	4	3	2	1
ADB							LSB

bits-8/1	(ADB)	Age of the last ADS-B report used to update the track
bit-1	(LSB)	= 1/4 s Maximum value = 63.75s

Structure of Subfield # 8:

Mode 1 Age

Octet no. 1

8	7	6	5	4	3	2	1
MD1							LSB

bits-8/1	(MD1)	Age of the last valid Mode 1 used to update the track
bit-1	(LSB)	= 1/4 s Maximum value = 63.75s

Structure of Subfield # 9:

Mode 2 Age

Octet no. 1

8	7	6	5	4	3	2	1
MD2							LSB

bits-8/1	(MD2)	Age of the last valid Mode 2 used to update the track
bit-1	(LSB)	= 1/4 s Maximum value = 63.75s

Structure of Subfield # 10:

Loop Age

Octet no. 1

8	7	6	5	4	3	2	1
LOP							LSB

bits-8/1	(LOP)	Age of the last magnetic loop detection
bit-1	(LSB)	= 1/4 s Maximum value = 63.75s

Structure of Subfield # 11:

Track Age

Octet no. 1

8	7	6	5	4	3	2	1
			TRK				LSB

bits-8/1	(TRK)	Actual track age since first occurrence
bit-1	(LSB)	= 1/4 s Maximum value = 63.75s

Structure of Subfield # 12:

Multilateration Age

Octet no. 1

8	7	6	5	4	3	2	1
			MUL				LSB

bits-8/1	(MUL)	Age of the last multilateration detection
bit-1	(LSB)	= 1/4 s Maximum value = 63.75s

NOTE - The ages are counted from Data Item I011/140, Time Of Track Information, using the following formula:

Age = Time of track information - Time of last (valid) update

If the computed age is greater than the maximum value or if the data has never been received, then the corresponding subfield is not sent.

5.2.25 Data Item I011/300, Vehicle Fleet Identification

Definition: Vehicle fleet identification number.

Format: One octet fixed length Data Item.

Structure:

Octet no. 1

8	7	6	5	4	3	2	1
VFI							

Bits 8-1 (VFI) = 0 Flyco (follow me)
= 1 ATC equipment maintenance
= 2 Airport maintenance
= 3 Fire
= 4 Bird scarer
= 5 Snow plough
= 6 Runway sweeper
= 7 Emergency
= 8 Police
= 9 Bus
= 10 Tug (push/tow)
= 11 Grass cutter
= 12 Fuel
= 13 Baggage
= 14 Catering
= 15 Aircraft maintenance
= 16 Unknown

5.2.26 Data Item I011/310, Pre-programmed Message

Definition: Number related to a pre-programmed message that can be transmitted by a vehicle.

Format: One octet fixed length Data Item.

Structure:

Octet no. 1

8	7	6	5	4	3	2	1
TRB	MSG						

Bit-8 (TRB) = 0 Default
= 1 In Trouble

Bits 7-1 (MSG) = 1 Towing aircraft
= 2 “Follow me” operation
= 3 Runway check
= 4 Emergency operation (fire, medical…)
= 5 Work in progress (maintenance, birds scarer, sweepers…)

5.2.27 Data Item I011/390, Flight Plan Related Data

Definition : All flight plan related information.

Format : Compound Data Item, comprising a primary subfield of two octets, followed by up to fourteen subfields.

Structure of Primary Subfield:

Octet no. 1

16	15	14	13	12	11	10	9
TAG	CSN	IFI	FCT	TAC	WTC	DEP	FX

Octet no. 2

8	7	6	5	4	3	2	1
DST	RDS	CFL	CTL	TOD	AST	STS	FX

bit-16	(TAG)	FPPS Identification Tag = 0 Absence of Subfield #1 = 1 Presence of Subfield #1
bit-15	(CSN)	Callsign = 0 Absence of Subfield #2 = 1 Presence of Subfield #2
bit-14	(IFI)	IFPS_FLIGHT_ID = 0 Absence of Subfield #3 = 1 Presence of Subfield #3
bit-13	(FCT)	Flight Category = 0 Absence of Subfield #4 = 1 Presence of Subfield #4
bit-12	(TAC)	Type of Aircraft = 0 Absence of Subfield #5 = 1 Presence of Subfield #5
bit-11	(WTC)	Wake Turbulence Category = 0 Absence of Subfield #6 = 1 Presence of Subfield #6
bit-10	(DEP)	Departure Airport = 0 Absence of Subfield #7 = 1 Presence of Subfield #7
bit-9	FX	Extension indicator = 0 no extension = 1 extension

bit-8	(DST)	Destination Airport = 0 Absence of Subfield #8 = 1 Presence of Subfield #8
bit-7	(RDS)	Runway Designation = 0 Absence of Subfield #9 = 1 Presence of Subfield #9
bit-6	(CFL)	Current Cleared Flight Level = 0 Absence of Subfield #10 = 1 Presence of Subfield #10
bit-5	(CTL)	Current Control Position = 0 Absence of Subfield #11 = 1 Presence of Subfield #11
bit-4	(TOD)	Time of Departure = 0 Absence of Subfield #12 = 1 Presence of Subfield #12
bit-3	(AST)	Aircraft Stand = 0 Absence of Subfield #13 = 1 Presence of Subfield #13
bit-2	(STS)	Stand Status = 0 Absence of Subfield #14 = 1 Presence of Subfield #14
bit-1	FX	Extension indicator = 0 no extension = 1 extension

Structure of Subfield # 1:

FPPS Identification Tag

Octet no. 1								Octet no. 2							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
SAC								SIC							

bits 16/9	(SAC)	System Area Code
bits 8/1	(SIC)	System Identity Code

Structure of Subfield # 2:

Callsign

Octet no. 1							
56	55	54	53	52	51	59	49
Character 1							

Octet no. 2								Octet no. 3							
48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
Character 2								Character 3							

Octet no. 4								Octet no. 5							
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Character 4								Character 5							

Octet no. 6								Octet no. 7							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Character 6								Character 7							

NOTE - Each one of the seven Octets contains an ASCII Character. The Callsign is always left adjusted. It contains up to seven upper-case alphanumeric characters, the remaining character positions (if any) are padded with space characters.

Structure of Subfield # 3: IFPS_FLIGHT_ID

Octet no. 1 Octet no. 2

32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
TYP		0	0	0	NBR										

Octet no. 3 Octet no. 4

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
															LSB

Bits-32/31	(TYP)	= 00	Plan Number
		= 01	Unit 1 internal flight number
		= 10	Unit 2 internal flight number
		= 11	Unit 3 internal flight number
Bits-30/28	spare bits set to zero		
Bits-27/1	(NBR)		Number from 0 to 99 999 999

Structure of Subfield # 4: Flight Category

Octet no. 1

8	7	6	5	4	3	2	1
GAT/OAT		FR1/FR2		RVSM		HPR	0

bits 8/7	(GAT/OAT)	= 00	Unknown
		= 01	General Air Traffic
		= 10	Operational Air Traffic
		= 11	Not applicable
bits 6/5 Rules	(FR1/FR2)	= 00	Instrument Flight
		= 01	Visual Flight rules
		= 10	Not applicable
		= 11	Controlled Visual Flight Rules
bits 4/3	(RVSM)	= 00	Unknown
		= 01	Approved
		= 10	Exempt
		= 11	Not Approved
bit 2	(HPR)	= 0	Normal Priority Flight
		= 1	High Priority Flight
bit 1	Spare bit set to zero		

Structure of Subfield # 5: Type of Aircraft

Octet no. 1								Octet no. 2							
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Character 1								Character 2							

Octet no. 3								Octet no. 4							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Character 3								Character 4							

NOTES

1. Each one of the four Octets composing the type of an aircraft contains an ASCII Character (upper-case alphabetic characters with trailing spaces).
2. The types of aircraft are defined in the ICAO Document 4444.

Structure of Subfield # 6: Wake Turbulence Category

Octet no. 1							
8	7	6	5	4	3	2	1
Wake Turbulence Category							

bits 8/1	Wake Turbulence Category is an ASCII character code which may have the following values :
	L = Light
	M = Medium
	H = Heavy

Structure of Subfield # 7: Departure Airport

Octet no. 1								Octet no. 2							
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Character 1								Character 2							

Octet no. 3								Octet no.4							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Character 3								Character 4							

NOTES

1. Each one of the four Octets composing the name of an airport contains an ASCII Character (upper case alphabetic).
2. The Airport Names are indicated in the ICAO Location Indicators book.

Structure of Subfield # 8 Destination Airport

Octet no. 1								Octet no. 2							
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Character 1								Character 2							

Octet no. 3								Octet no. 4							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Character 3								Character 4							

NOTES

1. Each one of the four Octets composing the name of an airport contains an ASCII Character (upper case alphabetic).
2. The Airport Names are indicated in the ICAO Location Indicators book.

Structure of Subfield # 9: Runway Designation

Octet no. 1								Octet no. 2							
24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9
NU1								NU2							

Octet no. 3							
8	7	6	5	4	3	2	1
LTR							

bits 24/17	(NU1)	First number
bits 16/9	(NU2)	Second number
bits 8/1	(LTR)	Letter

NOTES

1. NU1, NU2 and LTR each contain an ASCII character (upper-case alphabetic).
2. For details refer to ICAO Annex 14, chapter 5.

Structure of Subfield # 10: Current Cleared Flight Level

Octet no. 1								Octet no. 2							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CFL															lsb

bits 16/1	(CFL)
	LSB = 1/4 FL

Structure of Subfield # 11: Current Control Position

Octet no. 1								Octet no. 2							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Centre								Position							

bits 16/9	(Centre)	8-bit group Identification code
bits 8/1	(Position)	8-bit Control Position identification code

NOTE - The centre and the control position identification codes have to be defined between communication partners.

Structure of Subfield # 12:
Time of Departure

Octet no. 1

40	39	38	37	36	35	34	33
REP							

Octet no. 2

32	31	30	29	28	27	26	25
TYP					DAY		0

Octet no. 3 Octet no. 4

24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9
0	0	0	HOR				LSB	0	0	MIN					LSB

Octet no. 5

8	7	6	5	4	3	2	1
AVS	0	SEC					LSB

Bits-40/33	(REP)	Repetition Factor	
bits-32/28	(TYP)	= 0	Scheduled off-block time
		= 1	Estimated off-block time
		= 2	Estimated take-off time
		= 3	Actual off-block time
		= 4	Predicted time at runway hold
		= 5	Actual time at runway hold
		= 6	Actual line-up time
		= 7	Actual take-off time
		= 8	Estimated time of arrival
		= 9	Predicted landing time
		= 10	Actual landing time
		= 11	Actual time off runway
		= 12	Predicted time to gate
		= 13	Actual on-block time
bits-27/26	(DAY)	= 00	Today
		= 01	Yesterday
		= 10	Tomorrow
bits-25/22	spare bits set to zero		

bits-21/17 (HOR) Hours, from 0 to 23

bits-16/15 spare bits set to zero

bits-14/9 (MIN) Minutes, from 0 to 59

bit-8 (AVS) = 0 Seconds available
= 1 Seconds not available

bit-7 spare bits set to zero

bits-6/1 (SEC) Seconds, from 0 to 59

NOTE - Estimated times are derived from flight plan systems. Predicted times are derived by the fusion system, based on surveillance data.

Structure of Subfield # 13:
Aircraft Stand

Octet no. 1								Octet no. 2							
48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
Character 1								Character 2							

Octet no. 3								Octet no. 4							
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Character 3								Character 4							

Octet no. 5								Octet no. 6							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Character 5								Character 6							

NOTE - Each one of the six Octets contains an ASCII Character. The Aircraft Stand identification is always left adjusted. It contains up to six upper-case alphanumeric characters, the remaining character positions (if any) are padded with space characters.

Structure of Subfield # 14:
Stand Status

Octet no. 1							
8	7	6	5	4	3	2	1
EMP		AVL		0	0	0	0

bits-8/7 (EMP) = 00 Empty
= 01 Occupied
= 10 Unknown

bits-6/5 (AVL) = 00 Available
= 01 Not available
= 10 Unknown

5.2.28 Data Item I011/430, Flight Status

Definition: Current status of the flight.

Format: One-octet fixed length Data Item.

Structure:

Octet no. 1

<table>
<tr><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr>
<tr><td colspan="8">FLS</td></tr>
</table>

Bits 8-1 (FLS) = 0 unknown
= 1 on stand
= 2 taxiing for departure
= 3 taxiing for arrival
= 4 runway for departure
= 5 runway for arrival
= 6 hold for departure
= 7 hold for arrival
= 8 push back
= 9 on finals

5.2.29 Data Item I011/500, Estimated Accuracies

Definition : Overview of all important accuracies (standard deviations)

Format : Compound Data Item, comprising a primary subfield of one octets, followed by subfields of predefined length.

Structure of Primary Subfield:

Octet no. 1

8	7	6	5	4	3	2	1
APC	APW	ATH	AVC	ARC	AAC	0	FX

bit 8	(APC)	Estimated Accuracy Of Track Position (Cartesian) = 0 Absence of subfield #1 = 1 Presence of subfield #1
bit 7	(APW)	Estimated Accuracy Of Track Position (WGS-84) = 0 Absence of subfield #2 = 1 Presence of subfield #2
bit 6	(ATH)	Estimated Accuracy Of Track Height = 0 Absence of subfield #3 = 1 Presence of subfield #3
bit 5	(AVC)	Estimated Accuracy Of Track Velocity (Cartesian) = 0 Absence of subfield #4 = 1 Presence of subfield #4
bit 4	(ARC)	Estimated Accuracy Of Rate Of Climb / Descent = 0 Absence of subfield #5 = 1 Presence of subfield #5
bit 3	(AAC)	Estimated Accuracy Of Acceleration (Cartesian) = 0 Absence of subfield #6 = 1 Presence of subfield #6
bit 2		Spare bit set to 0
bit 1	(FX)	= 0 End of Primary Subfield = 1 Extension into next Octet

Structure of Subfield # 1:
Estimated Accuracy Of Track Position (Cartesian)

Octet no. 1

16	15	14	13	12	11	10	9
APC (X-Component)							

Octet no. 2

8	7	6	5	4	3	2	1
APC (Y-Component)							

bits 16-1	(APC)	Estimated accuracy of the calculated position (Cartesian).
bits 9 and 1	(LSB)	= 0.25 m

Structure of Subfield #2:
Estimated Accuracy Of Track Position (WGS-84)

Octet no. 1 Octet no. 2

32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
APW (Latitude Component)															LSB

Octet no. 3 Octet no. 4

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
APW (Longitude Component)															LSB

bits 32-1	(APW)	Estimated accuracy (i.e. standard deviation) of the calculated position of an aircraft expressed in WGS-84.
bits 17 and 1	(LSB)	$180/2^{31}$ degrees = approx. $8.3819 * 10^{-08}$ degrees.

Structure of Subfield #3:
Estimated Accuracy Of Height

Octet no. 1								Octet no. 2							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
ATH															LSB

bits 16-1	(ATA)	Estimated accuracy (i.e. standard deviation) of the calculated altitude of an aircraft.
bit 1	(LSB)	= 0.5 m

Structure of Subfield #4:
Estimated Accuracy Of Track Velocity (Cartesian)

Octet no. 1							
16	15	14	13	12	11	10	9
AVC (X-Component)							

Octet no. 2							
8	7	6	5	4	3	2	1
AVC (Y-Component)							

bits 16-1	(AVC)	Estimated accuracy of the calculated velocity (Cartesian).
bits 9 and 1	(LSB)	= 0.1 m/s

Structure of Subfield #5:
Estimated Accuracy Of Rate Of Climb/Descent

Octet no. 1							
8	7	6	5	4	3	2	1
ARC							LSB

bits 8-1	(ARC)	Estimated accuracy of the calculated rate of Climb/Descent of an aircraft.
bit 1	(LSB)	= 0.1 m/s

Structure of Subfield #6: Estimated Accuracy Of Acceleration (Cartesian)

Octet no. 1

16	15	14	13	12	11	10	9
AAC (X-Component)							

Octet no. 2

8	7	6	5	4	3	2	1
AAC (Y-Component)							

bits 16-1	(AAC)	Estimated accuracy of the calculated acceleration (Cartesian).
bits 9 and 1	(LSB)	= 0.01 m/s^2

5.2.30 Data Item I011/600, Alert Messages

Definition: Alert involving the targets indicated in I011/605.

Format: Three-octet fixed length Data Item.

Structure:

Octet no. 1

24	23	22	21	20	19	18	17
ACK	SVR		0	0	0	0	0

Octet no. 2								Octet no. 3							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Alert Type								Alert Number							

Bit-24	(ACK)	0 = Alert acknowledged 1 = Alert not acknowledged
Bits-23/22	(SVR)	00 = End of alert 01 = Pre-alarm 10 = Severe alert
Bits-16/9	Alert Type	
Bits-8/1	Alert Number	

5.2.31 Data Item I011/605, Tracks in Alert

Definition: List of track numbers of the targets concerned by the alert described in I011/600.

Format: Repetitive Data Item starting with a one-octet Field Repetition Indicator (REP) followed by two-octet track numbers.

Structure:

Octet no. 1

24	23	22	21	20	19	18	17
REP							

Octet no. 2 Octet no. 3

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
0	0	0	0	FUSION TRACK NUMBER (0..4095)											

Bits-24/17	(REP)	Repetition Factor
Bits-12/1	Fusion Track Number	

5.2.32 Data Item I011/610, Holdbar Status

Definition: Status of up to sixteen banks of twelve indicators.

Format: Repetitive Data Item starting with a one-octet Field Repetition Indicator (REP) followed by two-octet banks/indicators.

Structure:

Octet no. 1

24	23	22	21	20	19	18	17
REP							

Octet no. 2 Octet no. 3

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
BKN				I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12

Bits-24/17	(REP)	Repetition Factor
Bits-16/13	Bank Number	
Bits-12/1	(Ii)	0 = Indicator i off 1 = Indicator i on

5.3 Standard User Application Profile – TO BE UPDATED

5.3.1 The following UAP shown in Table 3 shall be used for the transmission of SMGCS messages :

where:

- the first column indicates the FRN associated to each Data Item used in the UAP;
- the fourth column gives the format and the length of each item. A stand-alone figure indicates the octet count of a fixed-length Data Item, 1+ indicates a variable-length Data Item comprising a first part of one-octet followed by n-octets extents as necessary.