EUROPEAN ORGANISATION FOR THE SAFETY OF AIR NAVIGATION

EUROCONTROL

EUROCONTROL STANDARD DOCUMENT

FOR

SURVEILLANCE DATA EXCHANGE

Part 11: Category 061

Transmission of SDPS Session and Service Control Messages

SUR.ET1.ST05.2000-STD-11-01

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Abstract

This document describes the application of ASTERIX to SDPS Session and Service Control Messages

Keywords

ASTERIX	Category 61	Service Messages

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

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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	Nov. 1999	Creation of Eurocontrol document	ALL
0.11	Feb. 2000	Definitions, Scope & General Principles amended	Parag.1; 3; 4
0.12	Jul. 2000	Definitions added, Items modified	ALL
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TABLE OF CONTENTS

1. INTRODUCTION

1.1 Scope

1.1.1   This document describes the structure for the transmission of session and service control messages between user and SDPS. It is applicable to point-to-point connections only. For broadcast, Category 063 (described in Part 10) is used.

1.1.2   This document defines the data out of Category 061.

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2.   REFERENCES

2.1 General

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

At the time of publication of this Eurocontrol Standard 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 Standard Document.

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

In the case of a conflict between the requirements of this Eurocontrol Standard Document and the contents of the other referenced documents, this Eurocontrol Standard 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 November 2000.

3.   Eurocontrol Standard SUR.ET1.ST05.2000-STD-09-01. Transmission of System Track Data, edition 0.18 March 2001.

4.   Eurocontrol Standard SUR.ET1.ST05.2000-STD-10-01. Transmission of SDPS Status Messages, edition 0.15 March 2001.

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3. DEFINITIONS, ACRONYMS AND ABBREVIATIONS

3.1 Definitions

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

3.1.1	**A-periodical Service:**	An a-periodical service is a service where the transmission of data is triggered by specified events based on the data content e.g. a data field changes value by more than a specified threshold.
3.1.2	**Broadcast Service:**	A service not needing a session establishment between a user and a SDPS.
3.1.3	**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).
3.1.4	**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.
3.1.5	**Data Category:**	Classification of the data in order to permit inter alia an easy identification.
3.1.6	**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.
3.1.7	**Data Item:**	The smallest unit of information in each Data Category.
3.1.8	**Periodical Service:**	A periodical service is a service where the information is transmitted at regular, user defined, intervals.
3.1.9	**Radar Synchronised Service:**	A radar synchronised service is a track service where the information is transmitted in synchronism with the revolution of a specified sensor.
3.1.10	**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

3.1.11	**Service:**	An SDPS information service is uniquely identified by a service identification and is composed of a track element and a sensor element. A track element is characterised by the track selection (e.g. set of Mode-3/A codes, filtering in height, primary only, secondary only…), the track item selection (e.g. WGS-84 position, Time of Day…), the track transmission characteristics (e.g. synchronised on sensor, periodical, a-periodical event-triggered). A sensor element is characterised by the sensor selection, the sensor item selection, the sensor transmission characteristics.
3.1.12	**Service Resumption:**	A service resumption causes the transmission of data to be resumed for the related service.
3.1.13	**Service Suspension:**	A service suspension causes the temporary suspension of data transmission for the related service.
3.1.14	**Service Termination:**	A service termination causes the transmission of data to cease and the service to be terminated.
3.1.15	**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)
ADS-B	Automatic Dependent Surveillance - Broadcast
ASTERIX	**A**ll Purpose **ST**ructured **Eurocontrol** su**R**veillance **I**nformation E**X**change
CAT	Data Category
EATMP	European Air Traffic Management Programme
FRN	Field Reference Number
FSPEC	Field Specification
FX	Field Extension Indicator
ICAO	International Civil Aviation Organization
LEN	Length Indicator
LSB	Least Significant Bit
PSR	Primary Surveillance Radar
RE	Reserved Expansion Indicator
REP	Field Repetition Indicator
s	second, unit of time
SAC	System Area Code
SDPS	Surveillance Data Processing System
SIC	System Identification Code
SP	Special Purpose Indicator
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 SDPS Session and Service Control Messages shall require the transmission of the following types of messages :

- Family 1 : Connection Messages
  - Nature 1 : Request for Connection (user to SDPS),
  - Nature 2 : Request for Disconnection (SDPS to user, user to SDPS),
  - Nature 3 : Connection Acknowledgement (SDPS to user),
  - Nature 4 : Connection Rejection (SDPS to user),
  - Nature 5 : Disconnection Acknowledgement (SDPS to user, user to SDPS),
  - Nature 6 : Disconnection Rejection (SDPS to user).
- Family 2 : Service Messages
  - Nature 1 : Service Definition Request (user to SDPS),
  - Nature 2 : Service Modification Request (user to SDPS),
  - Nature 3 : Service Suspension Request (SDPS to user, user to SDPS),
  - Nature 4 : Service Resumption Request (SDPS to user, user to SDPS),
  - Nature 5 : Service Termination Request (SDPS to user, user to SDPS),
  - Nature 6 : Service Acknowledgement (SDPS to user, user to SDPS),
  - Nature 7 : Service Rejection (SDPS to user),
  - Nature 8 : Service Report (SDPS to user).

4.2 User Session

A user can establish one and only one connection with an SDPS, as described below:

1. The user sends a request for connection, containing its user identification.

2. The SDPS replies with a connection acknowledgement or a connection rejection, containing, if the connection is acknowledged, the SDPS identification and application version number.

3. As long as the connection is active, the user can request, modify, suspend, resume and terminate services. The SDPS can also suspend, resume and terminate services.

4. The user or the SDPS sends a disconnection message.

5. Optionally, the user or the SDPS may send a disconnection acknowledgement. Optionally, the SDPS may send a disconnection rejection.

4.3 Service Definition and Control

NOTE   -   A mechanism is provided to ensure the synchronisation of different services. In this paragraph, it is explained in the notes, based on the following example: service 1 is a service on which services 2 and 3 are synchronised.

1. The user sends a service definition request. A service is composed of a track element and/or a sensor element.

NOTE   -   In our example, the user will make three requests: request for service 1, then request for service 2 synchronised on 1, then request for service 3 synchronised on 1.

2. The SDPS replies with a service acknowledgement or a service rejection. If acknowledged, it contains the service identification.

NOTE   -   In our example, the SDPS will reply with three reports. If all are successful, report 1 will contain service identification 1, report 2 service identification 2 and report 3 service identification 3.

3. The SDPS start sending data associated with the service. If the service is synchronised on another one, the service identification is the one of the service on which synchronisation is performed, and data are not duplicated.

NOTE   -   In our example, a track that meets the conditions to be provided by service 1 and by service 3 will be sent only once, with service 1 identification.

4. The user can send a service modification request, containing the user identification, the service identification, and the modified parameters.

5. This SDPS then replies with a service acknowledgement or a service rejection.

6. The user or the SDPS can suspend and resume a service.

NOTE   -   In our example, suspending/resuming service 1 will also suspend/resume services 2 and 3.

7. Optionally, the user or the SDPS may send a service acknowledgement for suspension/resumption. Optionally, the SDPS may send a service rejection for suspension/resumption.

8. The user or the SDPS sends a service termination message.

NOTE   -   In our example, terminating service 1 will also terminate services 2 and 3.

9. Optionally, the user or the SDPS may send a service acknowledgement for termination. Optionally, the SDPS may send a service rejection for termination.

4.4 Time Management

The time-stamping shall comply with ICAO Annex 5.

4.5 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.

4.6 User Application Profile and Data Blocks

4.6.1   A single User Application Profile (UAP) is defined and shall be used for Session and Service Control messages.

4.6.2   Data Blocks shall have the following layout.

CAT = 061	LEN		FSPEC	Items of the first record		FSPEC	Items of the last record

where:

- Data Category (CAT) = 061, is a one-octet field indicating that the Data Block contains SDPS Session and Service Control messages;

- 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.

4.7   Composition of Messages

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

4.7.2   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 SDPS Session and Service Control messages are defined in Table 1 and described in the following pages.

Table 1 - Data Items of Category 061

Data Item Reference Number	Description	System Units
I061/000	MESSAGE TYPE	N.A.
I061/010	SDPS IDENTIFICATION	N.A.
I061/012	USER IDENTIFICATION	N.A.
I061/015	SERVICE IDENTIFICATION	N.A.
I061/020	TIME OF MESSAGE	1/128 s
I061/030	BATCH NUMBER	N.A.
I061/045	APPLICATION VERSION NUMBER	N.A.
I061/050	DEFAULT GEOGRAPHICAL VOLUME	N.A.
I061/060	GEOGRAPHICAL AREA	$180° / 2^{25}$
I061/070	LOWER LIMIT	1/4 FL
I061/080	UPPER LIMIT	1/4 FL
I061/100	CONNECTION RELATED REPORT	N.A.
I061/130	TRACK SELECTOR	N.A.
I061/210	ITEM SELECTOR	N.A.
I061/220	CYCLICAL UPDATE CHARACTERISTICS	N.A.
I061/230	RADAR SYNCHRONISATION CHARACTERISTICS	N.A.
I061/240	TRIGGERING CRITERIA FOR APERIODICAL SERVICES	N.A.
I061/330	SERVICE RELATED REPORT	N.A.
I061/350	SENSOR SELECTOR	N.A.
I061/360	SENSOR ITEM SELECTOR	N.A.
I061/370	PERIODICAL CHARACTERISTICS OF SENSOR INFORMATION SERVICE	1 s
I061/380	APERIODICAL CHARACTERISTICS OF SENSOR INFORMATION SERVICE	N.A.

5.2   Description of Standard Data Items

5.2.1   Data Item I061/000, Message Type

Definition :   This data item allows for a more convenient handling of the message 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
FAM				NAT			

bits 8/5 (FAM)   Message family
> 1 = Connection Messages
> 2 = Service Messages

bits 4/1 (NAT) Message nature within the family
> − Connection Messages (family 1):
>> 1 = Request for Connection (user to SDPS),
>> 2 = Request for Disconnection (SDPS to user, user to SDPS),
>> 3 = Connection Acknowledgement (SDPS to user),
>> 4 = Connection Rejection (SDPS to user),
>> 5 = Disconnection Acknowledgement (SDPS to user, user to SDPS),
>> 6 = Disconnection Rejection (SDPS to user).
> − Service Messages (family 2):
>> 1 = Service Definition Request (user to SDPS),
>> 2 = Service Modification Request (user to SDPS),
>> 3 = Service Suspension Request (SDPS to user, user to SDPS),
>> 4 = Service Resumption Request (SDPS to user, user to SDPS),
>> 5 = Service Termination Request (SDPS to user, user to SDPS),
>> 6 = Service Acknowledgement (SDPS to user, user to SDPS),
>> 7 = Service Rejection (SDPS to user),
>> 8 = Service Report (SDPS to user),
>> 15 = End of Batch (SDPS to user).

Table 2 – List of Items per Family / Nature

M = mandatory; O = optional.

Data Item		Family 1						Family 2								
Reference Number	Description	1	2	3	4	5	6	1	2	3	4	5	6	7	8	15
		Request for Connection	Request for Disconnection	Connection Acknowledgement	Connection Rejection	Disconnection Acknowledgement	Disconnection Rejection	Service Definition	Service Modification	Service Suspension	Service Resumption	Service Termination	Service Acknowledgement	Service Rejection	Service Report	End of Batch
I061/000	MESSAGE TYPE	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
I061/010	SDPS IDENTIFICATION	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
I061/012	USER IDENTIFICATION	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
I061/015	SERVICE IDENTIFICATION							O[1]	M	M	M	M	M	O[1]	M	M
I061/020	TIME OF MESSAGE	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
I061/045	APPLICATION VERSION NUMBER			M												
I061/050	DEFAULT GEOGRAPHICAL VOLUME							O	O							
I061/060	GEOGRAPHICAL AREA							O	O							
I061/070	LOWER LIMIT							O	O							
I061/080	UPPER LIMIT							O	O							
I061/090	PREFERRED FPPS IDENTIFICATION TAG							O	O							
I061/100	CONNECTION RELATED REPORT		O		O	O	O									
I061/110	SERVICE IDENTIFICATION							O	O							
I061/130	TRACK SELECTOR							O	O							
I061/210	ITEM SELECTOR							O	O							
I061/220	CYCLICAL UPDATE CHARACTERISTICS							O	O							
I061/230	RADAR SYNCHRONISATION CHARACTERISTICS							O	O							
I061/240	TRIGGERING CRITERIA FOR APERIODICAL SERVICES							O	O							
I061/330	SERVICE RELATED REPORT									O	O	O	O	O	O	M
I061/350	SENSOR SELECTOR							O	O							
I061/360	SENSOR ITEM SELECTOR							O	O							
I061/370	PERIODICAL CHARACTERISTICS OF SENSOR INFORMATION							O	O							
I061/380	APERIODICAL CHARACTERISTICS OF SENSOR INFORMATION SERVICE							O	O							

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[1] see encoding rule for I061/015

5.2.2   Data Item I061/010, SDPS Identification

Definition :   Identification of the SDPS providing track/sensor information
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								SIC							

bits-16/9   (SAC)   System Area Code

bits 8/1   (SIC)   System Identification Code

NOTE -   The up-to-date list of SACs is published on the Eurocontrol Web Site
            (http://www.eurocontrol.int).
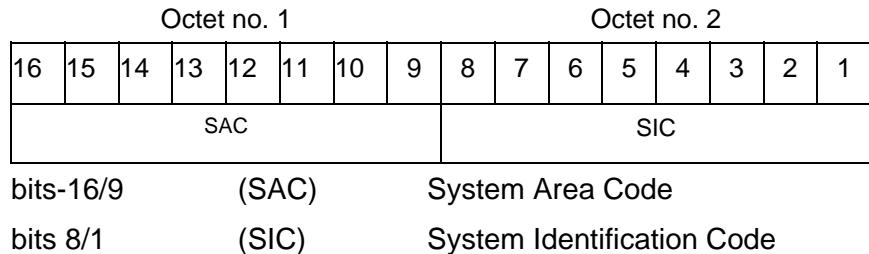
5.2.3   Data Item I061/012, User Identification

Definition :   Identification of the user requesting track/sensor information
Format :   One-Octet fixed length data item.
Structure:

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

bits8/1   (UID)   User Identification
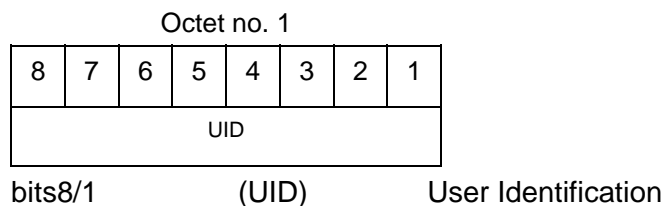
5.2.4   Data Item I061/015, Service Identification

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
SID							

bits8/1   (SID)   Service Identification
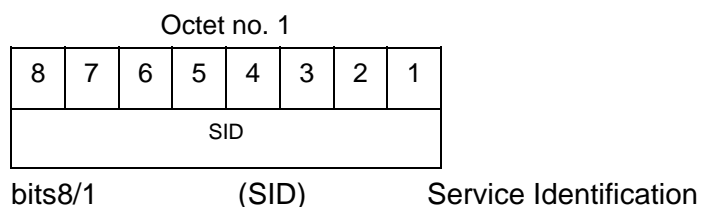
Encoding Rule : In case of service definition, this item shall only be sent to
indicate the service to be synchronised with. In case of service rejection, this item
shall only be sent to reject the following requests: service modification, service
suspension, service resumption, service termination.

5.2.5 **Data Item I061/020, Time of Message**

Definition : Absolute time stamping of the message, in the form of elapsed time since last midnight, expressed as UTC.

Format : Three-Octet fixed length data item.

Structure:

Octet no. 1

24	23	22	21	20	19	18	17
Time

Octet no. 2   Octet no. 3

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Of Message															LSB
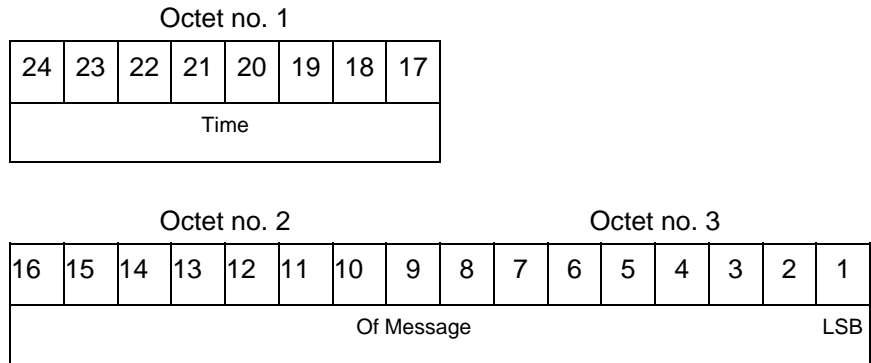
bit-16   (LSB) $= 2^{-7}$ s = 1/128 s

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

5.2.6 **Data Item I061/030, Batch Number**

Definition : A number indicating the completion of a service for that batch of track data, from 0 to N-1, N being the number of batches used to make one complete processing cycle.

Format : One-Octet fixed length data item.

Structure:

Octet no. 1

8	7	6	5	4	3	2	1
BTN

bits8/1   (BTN)   Batch Number
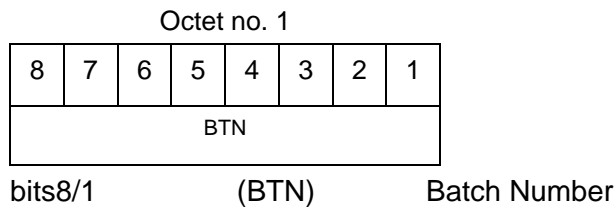
5.2.7 **Data Item I061/045, Application Version Number**

Definition : Version number of the SDPS application .

Format : One-Octet fixed length data item.

Structure:

Octet no. 1

8	7	6	5	4	3	2	1
AVN

Bits-8/1   (AVN)   Application Version Number
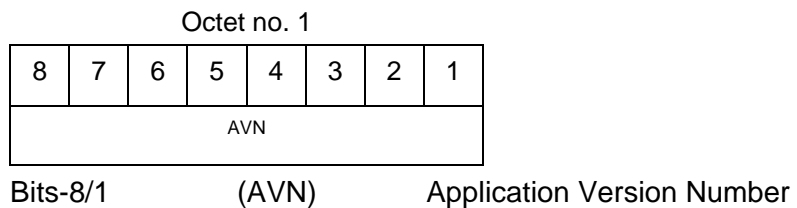
5.2.8   **Data Item I061/050, Default Geographical Volume**

Definition :   Identifies the default geographical volume of interest of the user
Format :   One-octet fixed length Data Item
Structure:

Octet no. 1

8	7	6	5	4	3	2	1
DGA	0	0	0	0	0	0	0

Bit-8   (DGA) = 0 most recently defined volume of interest for
                              the user
                      = 1 geographical volume covered by the SDPS

Bits-7/1   spare bits set to zero

NOTE   -   This item is exclusive with I061/060, and with I061/070, and with
                I061/080.

5.2.9   **Data Item I061/060, Geographical Area**

Definition :   Geographical area of interest of the user
Format :   One-octet repetition factor (REP >= 3), followed by N eight-octet geographical points expressed in WGS-84 co-ordinates, which are the consecutive vertices of the area.

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
Latitude in WGS - 84															

Octet no. 4   Octet no. 5

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

Octet no. 6   Octet no. 7

32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Longitude in WGS - 84															

Octet no. 8   Octet no. 9

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
															LSB
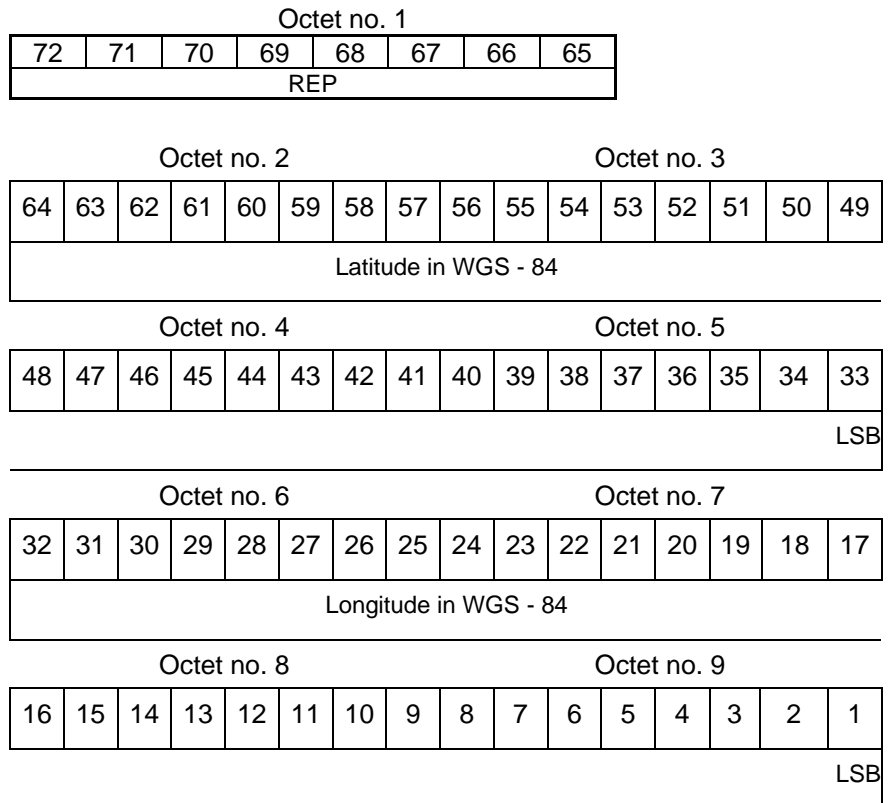
bits-72/65	(REP)	Repetition Factor
bits-64/33	(Latitude)	In WGS.84 in two's complement. Range -90 <= latitude <= 90 deg.
bit 33	(LSB)	$= 180/2^{25}$ degrees approx. $5.364418 * 10^{-06}$ degrees. This corresponds to a resolution of at least 0.6 meters
bits-32/1	(Longitude)	In WGS.84 in two's complement. Range -180 <= longitude <= 180 deg.
Bit-1	(LSB)	$= 180/2^{25}$ degrees approx. $5.364418 * 10^{-06}$ degrees This corresponds to a resolution of at least 0.6 meters.

NOTES

1.   Closure of the polygon is not required

2.   None of the border segments that make up the geographical area should
      cross or overlap
3.   This item is exclusive with I061/050

5.2.10   Data Item I061/070, Lower Limit

Definition :   Lower limit of the geographical volume of interest
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
Lower Limit															
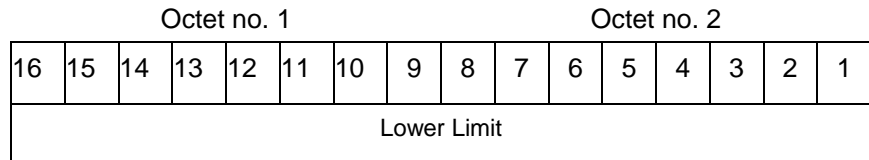
bits-16/1   (Lower Limit)

LSB = ¼ FL
Min = -15 FL
Max = 1500 FL

5.2.11   Data Item I061/080, Upper Limit

Definition :   Upper limit of the geographical volume of interest
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
Upper Limit															
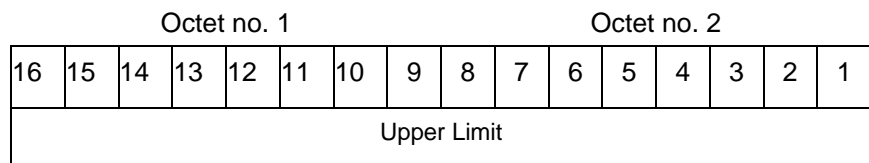
bits-16/1   (Upper Limit)

LSB = ¼ FL
Min = -15 FL
Max = 1500 FL

5.2.12   Data Item I061/100 : Connection Related Report

Definition :   Report message sent by the SDPS to the User in relation to a connection.

Format :   Repetitive data item, starting with a one-Octet Repetition Factor indicating the number of items, followed by series of 1-octet as necessary.

Structure:

Octet no. 1

16	15	14	13	12	11	10	9
Repetition Factor								

Octet no. 2

8	7	6	5	4	3	2	1
CODE							

Bits 16/9   Repetition Factor : 1 to 255

(The Repetition Factor will be > 1 when e.g. several errors have been detected within a connection Request).

bits 8/1 :   Report (CODE) – System Dependent.

5.2.13   **Data Item I061/130 : Track Selector**

Definition : Track Selection elements in a Service Request.
Format : Compound Data Item, comprising a primary subfield of two octets, followed by up to nine subfields.

**Structure of
Primary Subfield:**

Octet no. 1

16	15	14	13	12	11	10	9
TNS	AAS	AIS	CFS	DPS	DTS	ATS	FX

Octet no. 2

8	7	6	5	4	3	2	1
CCS	TCS	0	0	0	0	0	FX

bit-16   (TNS)   Track Number Selector
                                = 0 Absence of Subfield #1
                                = 1 Presence of Subfield #1

bit-15   (AAS)   Aircraft Address Selector
                                = 0 Absence of Subfield #2
                                = 1 Presence of Subfield #2

bit-14   (AIS)   Aircraft Identification Selector
                                = 0 Absence of Subfield #3
                                = 1 Presence of Subfield #3

bit-13   (CFS)   Code Family Selector
                                = 0 Absence of Subfield #4
                                = 1 Presence of Subfield #4

bit-12   (DPS)   Departure Airport Selector
                                = 0 Absence of Subfield #5
                                = 1 Presence of Subfield #5

bit-11   (DTS)   Destination Airport Selector
                                = 0 Absence of Subfield #6
                                = 1 Presence of Subfield #6

bit-10   (ATS)   Aircraft Type Selector
                                = 0 Absence of Subfield #7
                                = 1 Presence of Subfield #7

bit-9   FX   Extension indicator
                                = 0 no extension
                                = 1 extension

bit-8	(CCS)	Current Control Position Selector
		= 0 Absence of Subfield #8
		= 1 Presence of Subfield #8
bit-7	(TCS)	Track/Flight Categories Selector
		= 0 Absence of Subfield #9
		= 1 Presence of Subfield #9
bits-6/2	spare bits set to zero	
bit-1	FX	Extension indicator
		= 0 no extension
		= 1 extension

Structure of Subfield # 1:

Track Number Selector

Octet no. 1

24	23	22	21	20	19	18	17
Repetition Factor							

Octet no. 2								Octet no. 3							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
0	TRACK NUMBER														
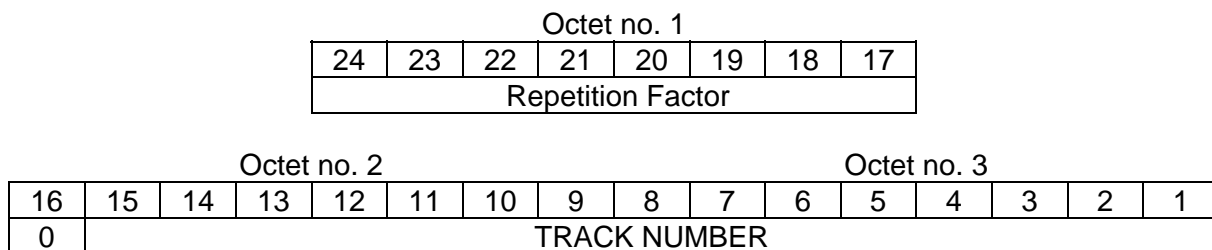
Bits 24/17 Repetition Factor

Bit 16   Spare bit set to zero

Bits 15/1   Track Number

Structure of Subfield # 2:

Aircraft Address Selector

Octet no. 1

32	31	30	29	28	27	26	25
Repetition Factor							

Octet no. 2

24	23	22	21	20	19	18	17
MSB	Aircraft						

Octet no. 3								Octet no. 4							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Address															LSB
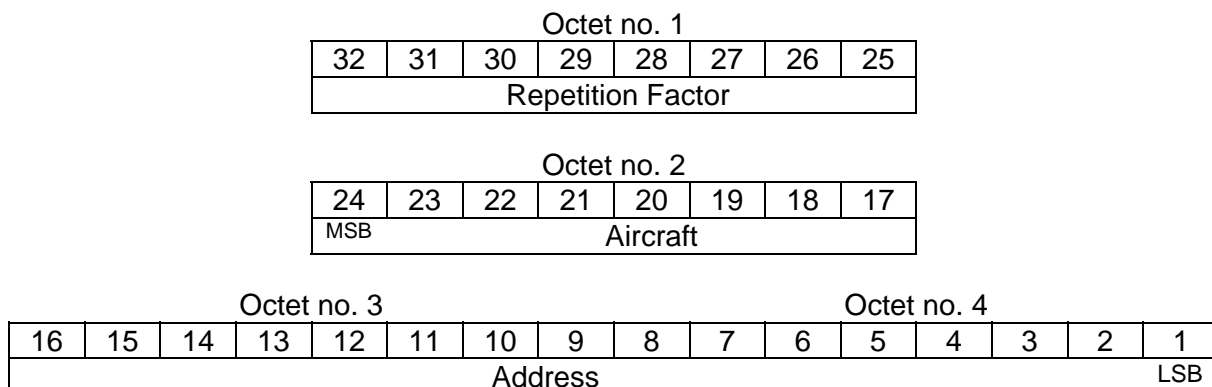
Bits 32/25 Repetition Factor
bits 24/1   24 bits aircraft address

Structure of Subfield # 3:

Aircraft Identification Selector

Octet no. 1

56	55	54	53	52	51	50	49
Repetition Factor							

Octet no. 2								Octet no. 3							
48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
Character 1						Character 2						Char 3/1			

Octet no. 4								Octet no. 5							
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Char 3/2		Character 4						Character 5						Char 6/1	

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

Bits 56/49   Repetition Factor

Bits 48/1   characters 1-8 (coded on 6 bits each) defining callsign when flight plan is available or the registration marking when no flight plan is available. See ICAO document Annex 10, Volume I, Part I, section 3.8.2.9 for the coding rules.

Structure of Subfield # 4:

Code Family Selector

Octet no. 1

24	23	22	21	20	19	18	17
Repetition Factor							

Octet no. 2								Octet no. 3							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
W1	W2	W3	W4	A4	A2	A1	B4	B2	B1	C4	C2	C1	D4	D2	D1

Bits 24/17   Repetition Factor

bits 16/13   Wildcard Indicators :
                For each code digit (A, B, C, D), a Wildcard (respectively W1, W2, W3, W4) can be set to indicate that the track selection will have to be done whatever is the value of the digit in question.

                (Wi) =   1   Wildcard is set,
                                0   Wildcard not set.

bits 12/1   Mode 3/A Code under the form of 4 digits in octal representation

Structure of Subfield # 5:

Departure Airport Selector
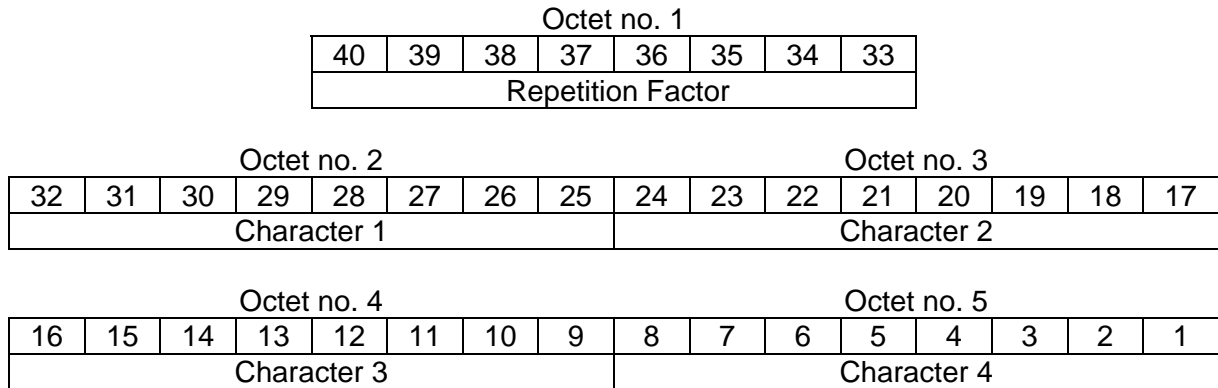
Octet no. 1

40	39	38	37	36	35	34	33
Repetition Factor							

Octet no. 2								Octet no. 3							
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Character 1								Character 2							

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

Bits 40/33   Repetition Factor

Bits 32/1   Airport Name. Each one of the four Octets composing the name of an airport contains an ASCII Character (upper-case alphabetic).

> **NOTE** - the airport names are indicated in the ICAO location indicators book.

Structure of Subfield # 6:

Destination Airport Selector

Octet no. 1

40	39	38	37	36	35	34	33
Repetition Factor							

Octet no. 2								Octet no. 3							
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Character 1								Character 2							

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

Bits 40/33   Repetition Factor

Bits 32/1   Airport Name. Each one of the four Octets composing the name of an airport contains an ASCII Character (upper-case alphabetic).

> **NOTE** - the airport names are indicated in the ICAO location indicators book.

Structure of Subfield # 7:

Aircraft Type Selector

Octet no. 1

40	39	38	37	36	35	34	33
Repetition Factor							

Octet no. 2   Octet no. 3

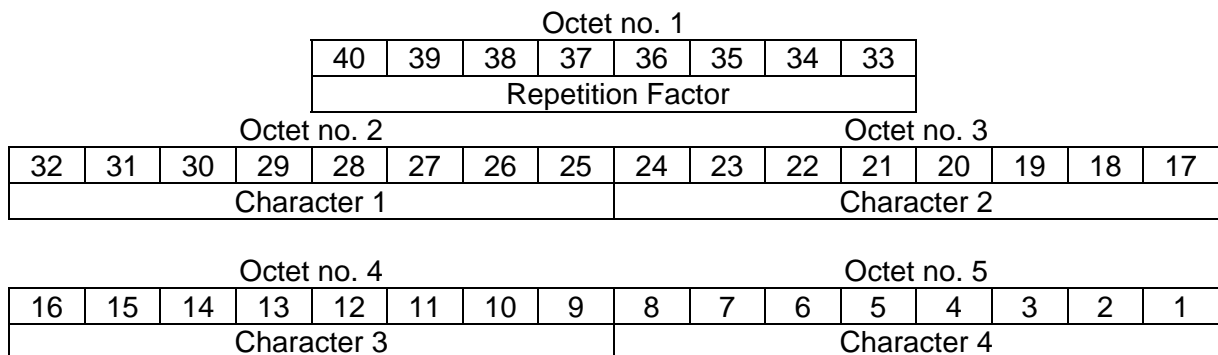| 32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Character 1								Character 2							

Octet no. 4   Octet no. 5

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

Bits 40/33   Repetition Factor

Bits 32/1   Type of Aircraft. Each one of the four Octets composing the type of an aircraft
              contains an ASCII Character (upper-case alphabetic with trailing spaces).

   NOTE -   the types of aircraft are defined in ICAO Document 4444.

Structure of Subfield # 8:

Current Control Position Selector

Octet no. 1

24	23	22	21	20	19	18	17
Repetition Factor							

Octet no. 2   Octet no. 3

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

Bits 24/17 Repetition Factor

bits 16/9   (CENTRE)   8-bit group identification code (0 to 255)

bits 8/1   (POSITION)   8-bit Control Position identification code
                                (0 to 255)

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

Structure of Subfield # 9:

Track/Flight Categories Selector

Octet no. 1										Octet no. 2					
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
SIM		CSR	PSR	SSR	MDS	ADS	VALT		FPC		CNF	SPI	0	GAT/OAT	

Octet no. 3										Octet no. 4					
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
IFR	VFR	CFR	RVSM		FRI/FOE		ME	MI	0	0	0	0	0	0	0

bits 32/31 (SIM) = 00 tracks from live surveillance reports
= 01 tracks from simulated surveillance reports
= 10 tracks from both live and simulated surveillance reports

bit 30 (CSR) = 0 no combined radar reports
= 1 combined radar reports

bit 29 (PSR) = 0 no primary radar reports
= 1 primary radar reports

bit 28 (SSR) = 0 no secondary radar reports
= 1 secondary radar reports

bit 27 (MDS) = 0 no Mode S radar reports
= 1 Mode S radar reports

bit 26 (ADS) = 0 no ADS reports
= 1 ADS reports

bits 25/24 (VALT) = 00 default
= 01 tracks with altitude using valid Flight Level reports (e.g. Mode C) only
= 10 tracks with altitude using assumed height only

bits 23/22 (FPC) = 00 default
= 01 tracks correlated to Flight Plan(s) only
= 10 tracks not correlated to Flight Plan(s) only

bit 21 (CNF) = 0 tentative tracks shall be sent
= 1 tentative tracks shall not be sent

bit 20 (SPI) = 0 tracks with SPI flag shall be sent
= 1 tracks with SPI flag shall not be sent

bit 19 spare bit set to zero

bits 18/17 (GAT/OAT) = 00 All Traffic
= 01 General Air Traffic
= 10 Operational Air Traffic

bit 16 (IFR) = 0 No IFR
= 1 IFR selected

bit 15	(VFR)	= 0	No VFR
		= 1	VFR selected

bit 14	(CFR)	= 0	No CVFR
		= 1	CVFR selected

bits 13/12	(RVSM)	= 00	All
		= 01	Approved
		= 10	Exempt
		= 11	Not approved

bits 11/10	(FRI/FOE)	= 00	Tracks shall be sent irrespectively of Mode 4 value
		= 01	Tracks shall be sent for friendly targets only
		= 10	Tracks shall be sent for unknown targets only
		= 11	Tracks shall be sent for not replying targets only

bit 9	(ME)	= 0	tracks with ME flag shall be sent
		= 1	tracks with ME flag shall not be sent

bit 8	(MI)	= 0	tracks with MI flag shall be sent
		= 1	tracks with MI flag shall not be sent

bits 7/1   spare bits set to 0

5.2.14 **Data Item I061/210 : Item Selector**

Definition : The Item Selector is used to define the composition of the track information messages. The bits that compose the Item Selector points the items composing the category 062 UAP.

Format : Extended 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
N1	N2	N3	N4	N5	N6	N7	FX	N8	N9	N10	N11	N12	N13	N14	FX

Octet no. 3 | | | | | | | Octet no. 4

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
N15	N16	N17	N18	N19	N20	N21	FX	N22	N23	N24	N25	N26	N27	N28	FX

Bits 32/26
Bits 24/18   (Ni) = 0   Data Item corresponding to FRN #i of category 062 UAP not selected
Bits 16/10   = 1   Data Item corresponding to FRN #i of category 062 UAP selected
Bits 8/2

Bit 25
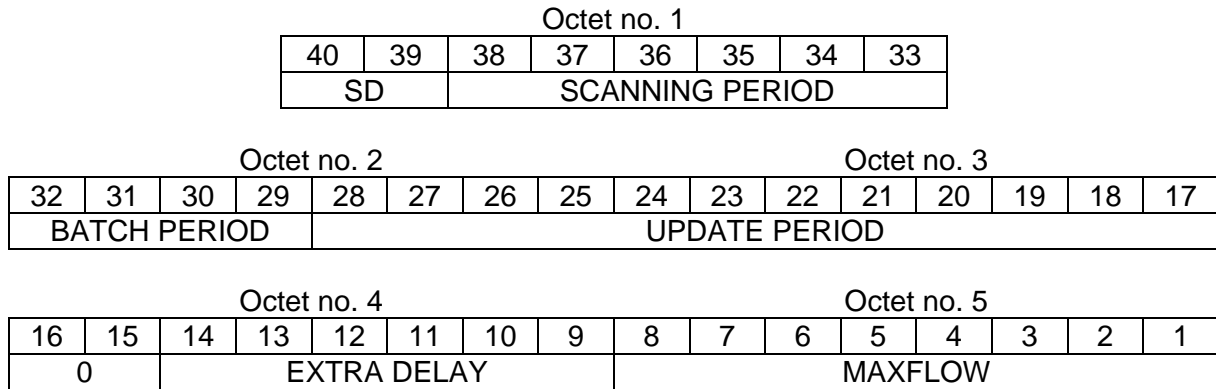Bit 17   (FX) field extension
Bit 9
Bit 1

     NOTE   -   The bits in the item selector are arranged in the order defined in Category 062 User Application Profile, described in [Ref.3].

5.2.15   Data Item I061/220 : Cyclical Update Characteristics

Definition :   Definition of the Scanning Period, Update Period, Max Data Flow and Extra Delay (to be considered for the track extrapolation) in case of periodical service.

Format :   Five-Octet fixed length data item.

Structure:

Octet no. 1

40	39	38	37	36	35	34	33
SD		SCANNING PERIOD					

Octet no. 2 · Octet no. 3

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

Octet no. 4 · Octet no. 5

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
0		EXTRA DELAY						MAXFLOW							

bits 40/39   Directive for scanning:
     (SD) = 00 no directive
          = 01 scanning by column
          = 10 scanning by row

bits 38/33   (SCANNING PERIOD) time for scanning the mosaic (number of batch periods)

bits 32/29   (BATCH PERIOD) time period between two consecutive batches (number of 100ms steps)

bits 28/17   (UPDATE PERIOD) time period between the same batch of two consecutive scans (number of 100ms steps)

bits 16/15   spare bits set to 0

bits 14/9   (DELAY) : number of 100ms steps

bits 8/1   (MAXFLOW) Maximum User input Data Flow in kbytes/second

   NOTE   -   Value 255 means no maximum user input data flow

5.2.16 Data Item I061/230 : Radar Synchronisation Characteristics

Definition : Transmission Characteristics for a radar synchronised service.
Format : Variable length data item comprising a first part of three Octets, followed by three Octets as necessary.

Structure:

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

Octet no. 3							
32	31	30	29	28	27	26	25
NOP	0						FX

Octet no. 4								Octet no. 5							
24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9
BSAC								BSIC							

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

Main Radar Identification Tag :
bits 48/41 (MSAC)   Source Area Code
bits 40/33 (MSIC)   Source Identity Code

bit 32 Directive with respect to tracks falling in the radar range but which are not updated by plots from the reference radar :

      (NOP) = 0   no information shall be sent,
          = 1   a track update shall be sent after the time-window for the plot-to-track association is passed without a plot has been associated.

bits 31/26 spare bits set to 0

bit 25   (FX)   Field Extension

Backup Radar Identification Tag :
bits 24/17 (BSAC)   Source Area Code
bits 16/9 (BSIC)   Source Identity Code

bits 8/2   spare bits set to 0

bit 1   (FX)   Field Extension

NOTE -   The up-to-date list of SACs is published on the Eurocontrol Web Site (http://www.eurocontrol.int).

5.2.17   **Data Item I061/240 : Triggering Criteria for Aperiodical Services**

Definition :   This item contains a number of flags to indicate which events shall be considered for triggering the track information transmission (aperiodical way of transmission).

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

Structure of
Primary Subfield:

Octet no. 1

16	15	14	13	12	11	10	9
DPF	0	RCT	PT	RTT	TAT	GST	FX

Octet no. 2

8	7	6	5	4	3	2	1
LAT	AT	FK	RP	MNP	0	0	FX

bit-16   (DPF)   Discrete Parameters Flags
                                   = 0 Absence of Subfield #1
                                   = 1 Presence of Subfield #1

bit-15   (spare)

bit-14   (RCT)   Rate of Climb/Descent Threshold
                                   = 0 Absence of Subfield #3
                                   = 1 Presence of Subfield #3

bit-13   (PT)   Position Threshold
                                   = 0 Absence of Subfield #4
                                   = 1 Presence of Subfield #4

bit-12   (RTT)   Rate of Turn Threshold
                                   = 0 Absence of Subfield #5
                                   = 1 Presence of Subfield #5

bit-11   (TAT)   Track Angle Threshold
                                   = 0 Absence of Subfield #6
                                   = 1 Presence of Subfield #6

bit-10   (GST)   Ground Speed Threshold
                                   = 0 Absence of Subfield #7
                                   = 1 Presence of Subfield #7

bit-9   FX   Extension indicator
                                   = 0 no extension
                                   = 1 extension

bit-8	(LAT)	Longitudinal Acceleration Threshold = 0 Absence of Subfield #8 = 1 Presence of Subfield #8
bit-7	(AT)	Altitude Threshold = 0 Absence of Subfield #9 = 1 Presence of Subfield #9
bit-6	(FK)	Factor K = 0 Absence of Subfield #10 = 1 Presence of Subfield #10
bit-5	(RP)	Refreshment Period = 0 Absence of Subfield #11 = 1 Presence of Subfield #11
bit-4	(MNP)	Minimal Period = 0 Absence of Subfield #12 = 1 Presence of Subfield #12
bits-3/2	spare bits set to zero	
bit-1	FX	Extension indicator = 0 no extension = 1 extension

Structure of Subfield # 1:

Discrete Parameters Flags

Octet no. 1

8	7	6	5	4	3	2	1
TLF	TNB	0	PLN	M3A	COR	SPE	MOF

Set of selection flags meaning that, when set to 1, a track information update shall be sent at each occurrence of the discrete event.

bit 8	(TLF)	Track Life events (Birth, Death, no radar update)
bit 7	(TNB)	Composed Track Number changes,
bit 6	spare bit set to zero	
bit 5	(PLN)	Modification of Flight Plan related information,
bit 4	(M3A)	Change of Mode 3/A identity
bit 3	(COR)	Flight-plan to Track correlation/end of correlation
bit 2	(SPE)	Special Mode 3/A transponding (7500, 7600 and 7700),
bit 1	(MOF)	Change of Mode-of-Flight.

Structure of Subfield # 2

Spare

Structure of Subfield # 3

Rate of Climb/Descent Threshold

An update will be triggered when the difference between the current rate of climb/descent and the previously sent rate of climb/descent for the track exceeds the indicated threshold.

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

bit 1   (LSB)   6.25 feet/minute

Structure of Subfield # 4

Position Threshold – TO BE DELETED?

An update will be triggered when the difference between the current track position and the position that could have been extrapolated from the previously sent track information, exceeds the indicated threshold.

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

The Position Threshold is expressed in Nautical Miles and applies on both X and Y coordinates.

bit 1   (LSB) = (2^{-6})NM = 1/64 NM

Structure of Subfield # 5

Rate of Turn Threshold

An update will be triggered when the difference between the current rate of turn and the previously sent rate of turn for the track exceeds the indicated threshold.

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

bit 1   (LSB) = (2^{-2}) °/s = 1/4 °/s

Structure of Subfield # 6

Track Angle Threshold

An update will be triggered when the difference between the current track angle and the previously sent track angle for the track exceeds the indicated threshold.

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

The Track Angle Threshold is expressed in degrees.

bit 1   (LSB) = $180°/(2^{8})$ = 0.703°

Structure of Subfield # 7

Ground Speed Threshold

An update will be triggered when the difference between the current ground speed and the previously sent groundspeed for the track exceeds the indicated threshold.

Octet no. 1

8	7	6	5	4	3	2	1
							LSB

The Ground Speed Threshold is expressed in Knots.

bit 1   (LSB) =   1 kt

Structure of Subfield # 8

Longitudinal Acceleration Threshold – What happens if Cartesian Acceleration?

An update will be triggered when the difference between the current longitudinal acceleration and the previously sent rate longitudinal acceleration for the track exceeds the indicated threshold.

Octet no. 1

8	7	6	5	4	3	2	1
							LSB

bit 1   (LSB) = $1/16 \ m/s^2$

Structure of Subfield # 9

Altitude Threshold

An update will be triggered when the difference between the current track geometric altitude and the previously sent track geometric altitude for the track exceeds the indicated threshold.

An update will also be triggered when the difference between the current track barometric altitude and the previously sent track barometric for the track exceeds the indicated threshold.

Octet no. 1

8	7	6	5	4	3	2	1
							LSB

bit 1   (LSB) =   1/4 FL (25 feet)

Structure of Subfield # 10

Factor K

The Factor K is used to trigger the data transmission as a function of the internal accuracy by which the tracker has estimated the state vector elements. An update will be sent each time one of the state vector elements has varied from more than K time the standard deviation associated to this element.
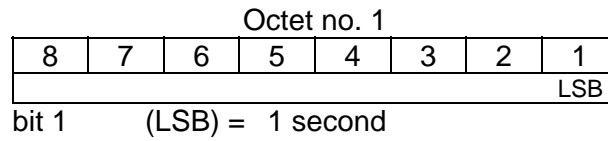
Octet no. 1

8	7	6	5	4	3	2	1
							LSB

bit 1   (LSB) = (2^{-3}) = 1/8

Structure of Subfield # 11

Refreshment Period

If no track update is triggered by any of the other aperiodical criteria within the refreshment period since the last track update was sent, then a track update shall be sent.

Octet no. 1

8	7	6	5	4	3	2	1
							LSB

bit 1   (LSB) =   1 second

Structure of Subfield # 12

Minimal Period

The minimum time between successive track updates for a track in an aperiodical service. It is intended to prevent track updates being generated too quickly for rapidly manoeuvring aircraft.
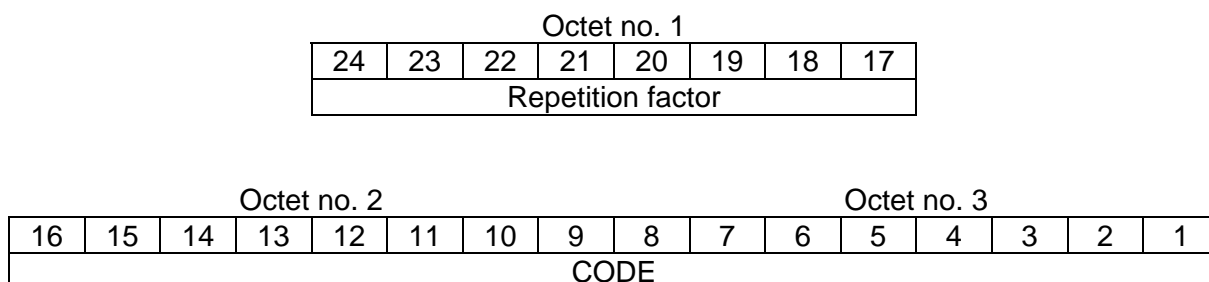
Octet no. 1

8	7	6	5	4	3	2	1
							LSB

bit 1   (LSB) =   1 second
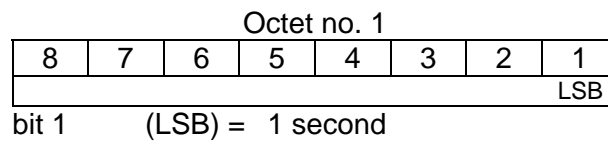
5.2.18 Data Item I061/330 : Service Related Report

Definition : Report message sent by the Server to the User in relation to a connection or a service.

Format : Repetitive data item, starting with a one-Octet Repetition Factor indicating the number of items, followed by series of 2-Octets (Acknowledgement message) as necessary.

Structure:

Octet no. 1

24	23	22	21	20	19	18	17
Repetition factor							

Octet no. 2 — Octet no. 3

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

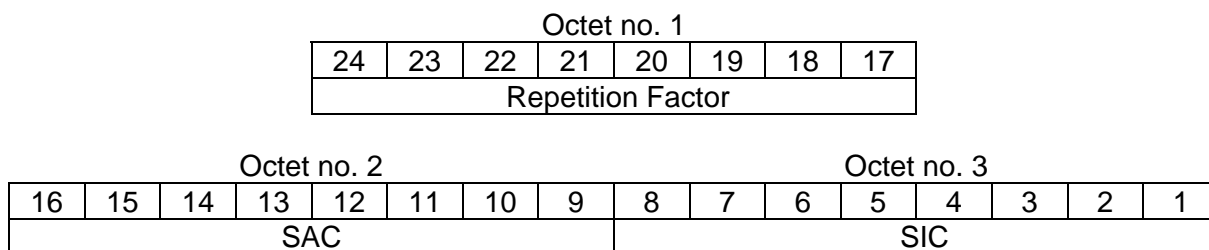Bits 24/17   Repetition Factor

Bits 16/12   (CODE) – system dependent value

5.2.19 Data Item I061/350 : Sensor Selector

Definition : List of Sensor SAC/SIC identifications for which Sensor information are to be provided.

Format : Repetitive data item, starting with a one-Octet Repetition Factor indicating the number of selected sensors, followed by series of 2-Octet (sensor identifications) as necessary.

Structure:

Octet no. 1

24	23	22	21	20	19	18	17
Repetition Factor							

Octet no. 2 — Octet no. 3

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

Bits 24/17   Repetition Factor = 0 to 30

bits 16/9   (SAC)   Source Area Code

bits 8/1   (SIC)   Source Identity Code

NOTE - The up-to-date list of SACs is published on the Eurocontrol Web Site (http://www.eurocontrol.int).

5.2.20 **Data Item I061/360 : Sensor Item Selector**

Definition : The Item Selector is used to define the composition of the Sensor information messages. The bits that compose the Item Selector point to the items composing the category 063 UAP.

Format : Extended length data item

Structure:

Octet no. 1   Octet no. 2

24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9
N1	N2	N3	N4	N5	N6	N7	FX	N8	N9	N10	N11	N12	N13	N14	FX

Octet no. 3

8	7	6	5	4	3	2	1
N15	N16	N17	N18	N19	N20	N21	FX

Bits 24/18
Bits 16/10   (Ni) = 0 Data Item corresponding to FRN #i of category 063 UAP not selected
Bits 8/2   = 1 Data Item corresponding to FRN #i of category 063 UAP selected

Bit 17
Bit 9   (FX) field extension
Bit 1

> **NOTE** - The bits in the item selector are arranged in the order defined in Category 063 User Application Profile, described in [Ref.4].

5.2.21 **Data Item I061/370 : Periodical Characteristics of Sensor Information Service**

Definition : Update period of a periodical service of Sensor Information messages.

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
						UPDATE PERIOD									LSB

bits 16/1   (UPDATE PERIOD)

(LSB) = 1s

5.2.22 **Data Item I061/380 : Aperiodical Characteristics of Sensor Information Service**

Definition : This item is used to define the composition of the Sensor Information messages.

Format : Compound data item, comprising a primary subfield, of up to 2 Octets, followed by up to 9 subfields.

Structure:

Primary subfield

Octet no. 1

16	15	14	13	12	11	10	9
RP	DP	TSB	SRB	SGB	SAB	PRB	FX

Octet no. 2

8	7	6	5	4	3	2	1
PGB	PAB			sb			FX

bit 16 (RP) Presence of a Refresh Period
bit 15 (DP) Presence of criteria based on Discrete Parameters
bit 14 (TSB) Presence of a Time Stamping Bias change threshold
bit 13 (SRB) Presence of a SSR Range Bias change threshold
bit 12 (SGB) Presence of a SSR Range gain change threshold
bit 11 (SAB) Presence of a SSR Azimuth Bias change threshold
bit 10 (PRB) Presence of a PSR Range Bias change threshold
bit 9 (FX) Primary Subfield Extension
bit 8 (PGB) Presence of a PSR Range gain change threshold
bit 7 (PAB) Presence of a PSR Azimuth Bias change threshold
bits 6/2 Spare bits set to 0
bit 1 (FX) Primary Subfield Extension

Subfield N°1 : refresh period

Octet no. 1   Octet no. 2

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

bits 16/1 (REFRESH PERIOD) period of refresh when no change is detected.

bit 1 (LSB) = 1s
        range : from 4 to 3600 s

Subfield N°2 : discrete parameters

Octet no. 1

8	7	6	5	4	3	2	1
SSC				sb			

bit 8 (SSC) Sensor Status Change
bits 7/1 (sb) spare bits set to 0

Subfield N°3 : Time Stamping Bias change threshold

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

bits 16/1   (TIME STAMPING BIAS) variation threshold of the time stamping bias
bit 1   (LSB) = 1 ms

Subfield N°4 : SSR Range Bias change threshold

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

bits 16/1   (SSR RANGE BIAS)   variation threshold of the SSR range bias
bit 1   (LSB) = 1/128 NM

Subfield N°5 : SSR range Gain change threshold

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

bits 16/1   (SSR RANGE GAIN)   variation threshold of the SSR range gain
bit 1   (LSB) = 10^{-6}

Subfield N°6 : SSR Azimuth Bias change threshold

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

bits 16/1   (SSR AZIMUTH BIAS)   variation threshold of the SSR azimuth bias
bit 1   (LSB) = $360°/(2^{16}) \cong 0.0055°$

Subfield N°7 : PSR Range Bias change threshold

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

bits 16/1   (PSR RANGE BIAS)   variation threshold of the PSR range bias
bit 1   (LSB) = 1/128 NM

Subfield N°8 : PSR range Gain change threshold

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

bits 16/1   (PSR RANGE GAIN)   variation threshold of the PSR range gain
bit 1   (LSB) = 10^{-6}

Subfield N°9 : PSR Azimuth Bias change threshold

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

bits 16/1   (PSR AZIMUTH BIAS)   variation threshold of the PSR azimuth bias
bit 1   (LSB) = $360°/(2^{16}) \cong 0.0055°$

5.3 User Application Profile for Category 061

The following User Application Profile shall be used for the transmission of SDPS session and service control messages.

Table 3 – SDPS Session and Service Control Messages UAP

FRN	Data Item	Information	Length
1	I061/010	SDPS Identification	2
2	I061/000	Message Type	1
3	I061/012	User Identification	1
4	I061/015	Service Identification	1
5	I061/020	Time of Message	3
6	I061/030	Batch Number	1
7	I061/045	Application Version Number	1
FX	-	Field extension indicator	-
8	I061/050	Default Geographical Volume	1
9	I061/060	Geographical Area	1+8*N
10	I061/070	Lower Limit	2
11	I061/080	Upper Limit	2
12	I061/100	Connection Related Report	1+1*N
13	I061/130	Track Selector	1+
14	I061/210	Item Selector	1+
FX	-	Field extension indicator	-
15	I061/220	Cyclical Update Characteristics	5
16	I061/230	Radar Synchronisation Characteristics	3+
17	I061/240	Triggering Criteria for Aperiodical Services	1+
18	I061/330	Service Related Report	1+2*N
19	I061/350	Sensor Selector	1+2*N
20	I061/360	Sensor Item Selector	1+
21	I061/370	Periodical Characteristics of Sensor Information Service	2
FX	-	Field extension indicator	-
22	I061/380	Aperiodical Characteristics of Sensor Information Service	1+
23	-	-	-
24	-	-	-
25	-	-	-
26	-	-	-
27	RE	Reserved Expansion Field	1+
28	SP	Special Purpose Field	1+
FX	-	Field extension indicator	-

In the above table

- the first column indicates the Field Reference Number (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 1 octet followed by n-octets extents as necessary.