

**ASTERIX Part 9
Category 062
Appendix A
Coding rules for
"Reserved Expansion
Field"**



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DOCUMENT IDENTIFICATION SHEET

DOCUMENT DESCRIPTION

Document Title
Coding rules for "Reserved Expansion Field"

EWP DELIVERABLE REFERENCE NUMBER

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EDITION : 1.2

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Abstract

Keywords

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DOCUMENT STATUS AND TYPE

STATUS	CATEGORY	CLASSIFICATION
Working Draft <input type="checkbox"/>	Executive Task <input type="checkbox"/>	General Public <input checked="" type="checkbox"/>
Draft <input type="checkbox"/>	Specialist Task <input type="checkbox"/>	EATCHIP <input type="checkbox"/>
Proposed Issue <input type="checkbox"/>	Lower Layer Task <input checked="" type="checkbox"/>	Restricted <input type="checkbox"/>
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ELECTRONIC BACKUP

INTERNAL REFERENCE NAME :

HOST SYSTEM	MEDIA	SOFTWARE(S)
Microsoft Windows	Type : Hard disk	
	Media Identification :	

DOCUMENT APPROVAL

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

AUTHORITY	NAME AND SIGNATURE	DATE
ASTERIX Manager	D. Doukas	
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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
1.0	October 2007	Creation	All
1.1	April 2010	Calculated Track Velocity in System Coordinates	2.5
1.2	August 2011	Data item "Supplementary Track Status" added	2.6

TABLE OF CONTENTS

DOCUMENT IDENTIFICATION SHEET.....	ii
DOCUMENT APPROVAL.....	iii
DOCUMENT CHANGE RECORD.....	iv
TABLE OF CONTENTS.....	v
EXECUTIVE SUMMARY.....	1
1. INTRODUCTION	2
1.1 Scope	2
2. DESCRIPTION OF THE CONTENT OF RESERVED EXPANSION FIELD	3
2.1 Length Indicator	3
2.2 Items indicator	4
2.3 Contributing Sensors With Local Tracknumbers.....	5
2.4 Contributing Sensors No Local Tracknumbers	7
2.5 Calculated Track Velocity Relative to System Reference Point	8
2.6 Supplementary Track Status	9

EXECUTIVE SUMMARY

The Reserved Expansion Field of category 062 enables an SDPS to indicate to subsequent systems which sensors were actually used to update the system track.

It also allows transmitting the Calculated Track Velocity relative to the position of the System Reference Point.

In data item STS (Supplementary Track Status) additional information qualifying the track can be submitted.

1. INTRODUCTION

1.1 Scope

This document describes the way to encode information in the Reserved Expansion Field of SDPS Track Messages from ASTERIX Cat 062.

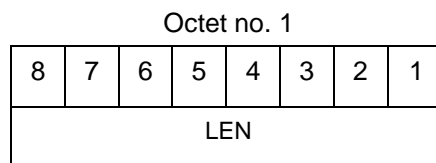
2. DESCRIPTION OF THE CONTENT OF RESERVED EXPANSION FIELD

2.1 Length Indicator

Definition : This field indicates the total length in octets of the Reserved Expansion Field (including the REF length itself)

Format : One-octet fixed length Data Item

Structure:



bits 8-1

(LEN)

Length of REF in octets,
including the Length Indicator
itself.

Encoding Rule :

This item shall be present in every REF

2.2 Items indicator

Definition : This field indicates what are the items encoded in the REF

Format : One-octet fixed length Data Item

Structure:

Octet no. 1

8	7	6	5	4	3	2	1
CST	CSN	TVS	STS	0	0	0	0

bits 8 (CST) = 0 "Contributing Sensors with local tracknumber" data item is not present in the REF
 = 1 "Contributing Sensors with local tracknumber" data item is present in the REF

bits 7 (CSN) = 0 "Contributing Sensors No local tracknumber" data item is not present in the REF
 = 1 "Contributing Sensors No local tracknumber" data item is present in the REF

bits 6 (TVS) = 0 "Calculated Track Velocity relative to System Reference Point" data item is not present in the REF
 = 1 "Calculated Track Velocity relative to System Reference Point" data item is present in the REF

bits 5 (STS) = 0 "Supplementary Track Status" data item is not present in the REF
 = 1 "Supplementary Track Status" data item is present in the REF

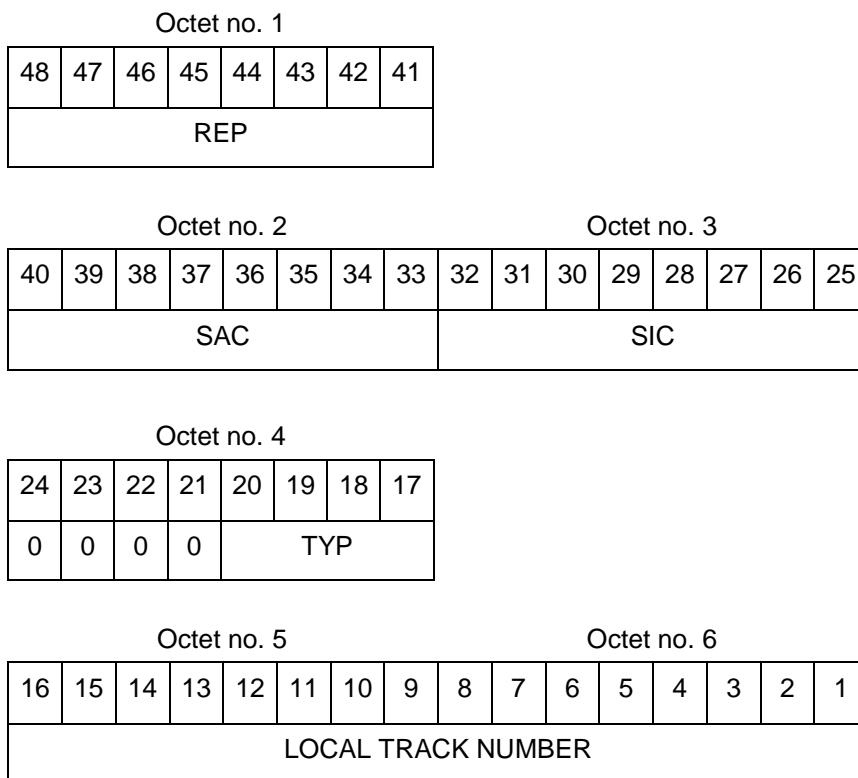
bits 4/1 Spare bits set to 0

Encoding Rule : This item shall be present in every REF

2.3 Contributing Sensors With Local Tracknumbers

Definition: List of Sensors contributing to the system track and providing a local track-number

Format: Repetitive data item comprising a one byte repetition factor followed by at least one 5 byte subfield



bits 48/41	(REP)	Repetition factor
bits 40/25	(SAC/SIC)	SAC and SIC of the sensor contributing to the track in the current update cycle.
bits 24/21	(spare)	Spare bits, set to zero
bits 20/17	(TYP)	=0000: No detection =0001: Single PSR detection =0010: Single SSR detection =0011: SSR+PSR detection =0100: Single Mode S All-Call =0101: Single Mode S Roll-Call =0110: Mode S All-Call + PSR =0111: Mode S Roll-Call + PSR =1000: ADS-B =1001: WAM =1010-1111 Reserved for future use

bits 16/1

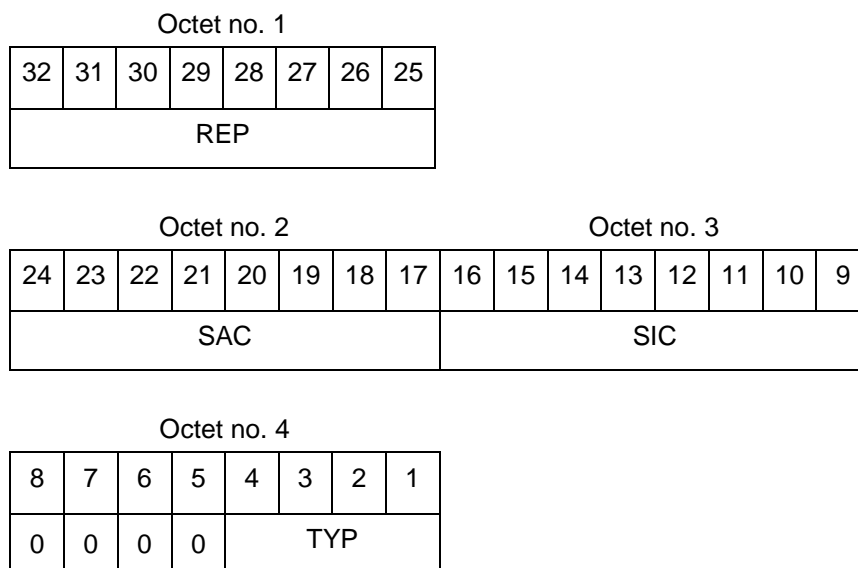
local Track Number allocated by
the sensor denominated by
SAC/SIC

Encoding Rule: This item is optional

2.4 Contributing Sensors No Local Tracknumbers

Definition: List of Sensors contributing to the system track and not providing a local track-number

Format: Repetitive data item comprising a one byte repetition factor followed by at least one 3 byte subfield



bits 32/25	(REP)	Repetition factor
bits 24/9	(SAC/SIC)	SAC and SIC of the sensor contributing to the track in the current update cycle.
bits 8/5	(Spare)	Spare bits, set to 0
bits 4/1	(TYP)	=0000: No detection =0001: Single PSR detection =0010: Single SSR detection =0011: SSR+PSR detection =0100: Single Mode S All-Call =0101: Single Mode S Roll-Call =0110: Mode S All-Call + PSR =0111: Mode S Roll-Call + PSR =1000: ADS-B =1001: WAM =1010-1111 Reserved for future use

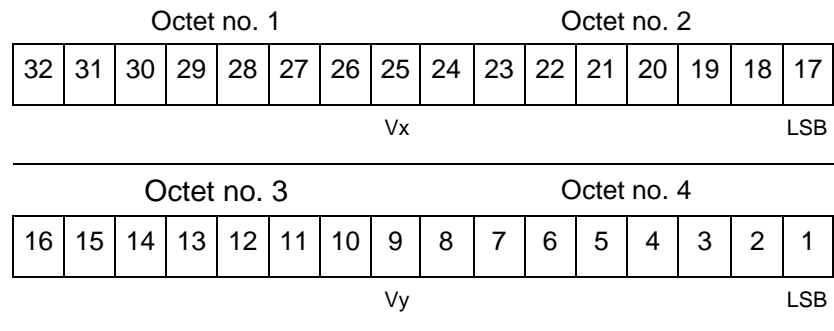
Encoding Rule: This item is optional

2.5 Calculated Track Velocity Relative to System Reference Point

Definition: Calculated track velocity expressed in Cartesian co-ordinates relative to the system reference point, in two's complement form.

Format: Four-octet fixed length Data Item .

Structure:



bits-32/17

Vx

(LSB) = 0.25 m/s

$-8192\text{m/s} \leq Vx \leq 8191.75\text{m/s}$

bits-16/1

Vy

(LSB) = 0.25 m/s

$-8192\text{m/s} \leq Vy \leq 8191.75\text{m/s}$

NOTE - The y-axis points to the Geographical North at the system reference point as available in the Reserved Expansion Field of category 065.

Encoding Rule :

This Item is optional

2.6 Supplementary Track Status

Definition: Track status information to be transmitted in addition to the information available in data item I062/080 (Track Status).

Format: One-octet extensible Data Item .

Structure:

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

bit 8	(FDR)	= 0	Flight Data Retained
		= 1	Flight plan data from active FDPS
			Flight plan data retained from no longer active FDPS
bit 15	(FX)	= 0	End of data item
		= 1	Extension of data item into next octet

Encoding Rule: This data item is optional