

**ASTERIX Part 21  
Category 007  
Appendix A  
Coding rules for  
"Reserved Expansion  
Field"**

**SUR.ET1.ST05.2000-STD-21-02**

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# DOCUMENT IDENTIFICATION SHEET

## DOCUMENT DESCRIPTION

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Coding rules for "Reserved Expansion Field"

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**Abstract**

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## ELECTRONIC BACKUP

**INTERNAL REFERENCE NAME :**

HOST SYSTEM	MEDIA	SOFTWARE(S)
Microsoft Windows	Type : Hard disk	
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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
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## DOCUMENT CHANGE RECORD

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

<b>EDITION</b>	<b>DATE</b>	<b>REASON FOR CHANGE</b>	<b>SECTIONS PAGES AFFECTED</b>
0.1	February 2010	Creation	All
0.2	March 2010	Definition and Note to TA item updated	2.3
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## EXECUTIVE SUMMARY

## **1. INTRODUCTION**

### **1.1 Scope**

This document describes the way to encode information in the Reserved Expansion Field of ASTERIX Cat 007 (Directed Interrogations).

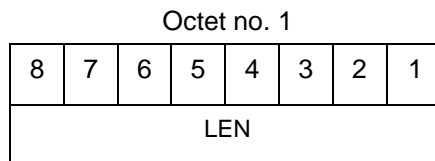
## 2. DESCRIPTION OF THE CONTENT OF RESERVED EXPANSION FIELD

### 2.1 Length Indicator

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

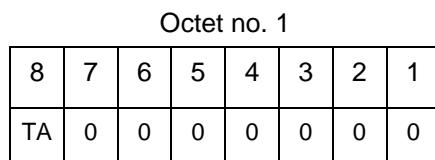
This item shall be present in every REF

### 2.2 Items indicator

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

**Format :** One-octet fixed length Data Item

**Structure:**



bit 8 (TA) = 0 Target Altitude is not present in the REF  
= 1 Target Altitude is present in the REF

bits 7/1 Spare bits set to 0

**Encoding Rule :**

This item shall be present in every REF



## 2.3 TA Target Altitude

**Definition:** Potential height of a target to be interrogated. The height shall use mean sea level as the zero reference level.

**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
0	0	TA <sub>max</sub>											LSB		

Octet no. 3							Octet no. 4								
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
0	0	TA <sub>min</sub>											LSB		

bits-32/31	(spare)	Spare bits, set to 0
bits-30/17	(TA <sub>max</sub> )	Maximum value of potential target altitude
bit 17	(LSB)	=25ft
bits-16/15	(spare)	Spare bits, set to 0
bits-14/1	(TA <sub>min</sub> )	Minimum value of potential target altitude
bit 1	(LSB)	=25ft

**NOTE:** Negative Values are expressed in two's complement  
 $TA_{min} \leq TA_{max}$

**Encoding Rule :**  
 This Item is optional.

### Application :

When operating a sensor on a moving platform (such as a ship) it is subjected to movements around the three special axes (heading, roll, pitch).

As shown in the diagram hereafter, the start and end value for the interrogation window differs depending on the movement of the sensor. In order to compensate for these variations, it is required to indicate to the sensor the altitude of the target in order to calculate the potential differences in the start and end angle of the interrogation window.

This REF implements the capability to indicate to the sensor the potential height band in which the target to be interrogated can be expected.

