Asterix category 009 - Composite Weather Reports

category: 009

edition: 2.1

date: 2014-10-22

Preamble

Surveillance data exchange.

Description of standard data items

I009/000 - 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.

Element
bit size: 8
Values:

2: Cartesian vector
253: Intermediate-update-step message
254: Start-of-picture message
255: End-of-picture message

I009/010 - Data Source Identifier

definition: Identification of the radar station from which the data are received.

Group

I009/010/SAC - System Area Code

Element
bit size: 8
Raw Content

I009/010/SIC - System Identification Code

Element
bit size: 8
Raw Content

Note: The defined SACs are on the EUROCONTROL ASTERIX website (www.eurocontrol.int/asterix)

I009/020 - Vector Qualifier

definition: This Data Item defines the orientation of the following sequence of Cartesian vectors, their intensity level and the relevant coordinate system.

Extended

I009/020/ORG

Element
bit size: 1
Values:

0: Local Coordinates
1: System Coordinates

I009/020/I - Intensity Level

Element
bit size: 3
Unsigned integer

I009/020/S - Shading Orientation with Respect to North

Element
bit size: 3
Values:

0: 0°
1: 22.5°
2: 45°
3: 67.5°
4: 90°
5: 112.5°
6: 135°
7: 157.5°

(FX) - extension bit

For polar vectors ”S-bits” are meaningless and shall be set to zero.

I009/030 - Sequence of Cartesian Vectors

definition: Sequence of weather vectors in local or system Cartesian coordinates.

Repetitive

Regular, 1 byte(s) REP field size.

Group

I009/030/X - X-coordinate

Element
bit size: 16
Signed integer

Adjust with scaling factor '080/F' 2exp (-6+f), where f is the scaling factor applied, modifying the standard quantisation unit. Range:-2exp (9+f) =<X<2exp (9+f) NM.

I009/030/Y - Y-coordinate

Element
bit size: 16
Signed integer

Adjust with scaling factor '080/F' 2exp (-6+f), where f is the scaling factor applied, modifying the standard quantisation unit. Range:-2exp (9+f) =<Y<2exp (9+f) NM.

I009/030/L - Vector Length

Element
bit size: 16
Unsigned integer

Adjust with scaling factor '080/F' 2exp (-6+f). Max. range = 2exp (9+f) NM.

'F' shall be incorporated as a parameter in the SOP message.

I009/060 - Synchronisation/Control Signal

definition: This Data Item provides the serial Step Number.

Extended

I009/060/SN - Step Number

Element
bit size: 6
Unsigned integer

Spare bits: 1

(FX) - extension bit

I009/070 - Time of Day

definition: Absolute time stamping expressed as UTC time.

Element
bit size: 24
Unsigned quantity
LSB = $1/2^7$ s ≈ $7.8125e-3$ s
unit: ”s”

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

I009/080 - Processing Status

definition: Processing status of the Track Server.

Extended

I009/080/F - Scaling Factor

Element
bit size: 5
Signed integer

I009/080/R - Current Reduction Stage in Use

Element
bit size: 3
Raw Content

I009/080/Q - Processing Parameters

Element
bit size: 15
Raw Content

(FX) - extension bit

I009/090 - Radar Configuration and Status

definition: Current radar configuration and status of all operational radars.

Repetitive

Regular, 1 byte(s) REP field size.

Group

I009/090/SAC - SAC of Radar Concerned

Element
bit size: 8
Raw Content

I009/090/SIC - SIC of Radar Concerned

Element
bit size: 8
Raw Content

Spare bits: 3

I009/090/CP - Circular Polarisation

Element
bit size: 1
Raw Content

I009/090/WO - Weather Channel Overload

Element
bit size: 1
Raw Content

I009/090/R - Reduction Step in Use By Radar Concerned

Element
bit size: 3
Raw Content

I009/100 - Vector Count

definition: Total number of vectors defining a complete weather picture.

Element
bit size: 16
Unsigned integer

User Application Profile

- 1: `I009/010` - Data Source Identifier
- 2: `I009/000` - Message Type
- 3: `I009/020` - Vector Qualifier
- 4: `I009/030` - Sequence of Cartesian Vectors
- 5: `I009/060` - Synchronisation/Control Signal
- 6: `I009/070` - Time of Day
- 7: `I009/080` - Processing Status
- (FX) - Field extension indicator
- 8: `I009/090` - Radar Configuration and Status
- 9: `I009/100` - Vector Count
- *Spare*
- *Spare*
- *Spare*
- *Spare*
- *Spare*
- (FX) - Field extension indicator