

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.

Structure:

- 8 bits [.]
- 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.

Structure:

I009/010/SAC - System Area Code

- 8 bits [.]
- raw value

I009/010/SIC - System Identification Code

- 8 bits [.]
- raw value

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.

Structure:

Extended item.

I009/020/ORG

- 1 bit [.]
- values:
 - 0: Local Coordinates
 - 1: System Coordinates

I009/020/I - *Intensity Level*

- 3 bits [...]
- unsigned integer

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

- 3 bits [...]
- values:
 - 0: 0°
 - 1: 22.5°
 - 2: 45°
 - 3: 67.5°
 - 4: 90°
 - 5: 112.5°
 - 6: 135°
 - 7: 157.5°

(FX)

- extension bit
 - 0: End of data item
 - 1: Extension into next extent

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.

Structure:

Repetitive item, repetition factor 8 bits.

I009/030/X - *X-coordinate*

- 16 bits [.....]
- signed quantity
- scaling factor: 1
- fractional bits: 0
- unit: "NM"
- LSB = 1 NM

remark Adjust with scaling factor 'F'

I009/030/Y - *Y-coordinate*

- 16 bits [.....]
- signed quantity
- scaling factor: 1
- fractional bits: 0
- unit: "NM"
- LSB = 1 NM

remark Adjust with scaling factor 'F'

I009/030/L - *Vector Length*

- 16 bits [.]
- unsigned integer

remark Adjust with scaling factor 'F'

'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.

Structure:

Extended item.

I009/060/SN - *Step Number*

- 6 bits [.]
- unsigned integer

I009/060/(spare)

- 1 bit [.]

(FX)

- extension bit
 - 0: End of data item
 - 1: Extension into next extent

I009/070 - **Time of Day**

Definition: Absolute time stamping expressed as UTC time.

Structure:

- 24 bits [.]
- unsigned quantity
- scaling factor: 1
- fractional bits: 7
- unit: "s"
- $\text{LSB} = 1/2^7 \text{ s} = 1/128 \text{ s} \approx 7.8125e-3 \text{ s}$

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

I009/080 - **Processing Status**

Definition: Processing status of the Track Server.

Structure:

Extended item.

I009/080/F - *Scaling Factor*

- 5 bits [.]
- signed quantity

- scaling factor: 1
- fractional bits: 0
- LSB = 1

I009/080/R - *Current Reduction Stage in Use*

- 3 bits [...]
- raw value

I009/080/Q - *Processing Parameters*

- 15 bits [.....]
- raw value

(FX)

- extension bit
 - 0: End of data item
 - 1: Extension into next extent

I009/090 - Radar Configuration and Status

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

Structure:

Repetitive item, repetition factor 8 bits.

I009/090/SAC - *SAC of Radar Concerned*

- 8 bits [.....]
- raw value

I009/090/SIC - *SIC of Radar Concerned*

- 8 bits [.....]
- raw value

I009/090/(spare)

- 3 bits [...]

I009/090/CP - *Circular Polarisation*

- 1 bit [.]
- raw value

I009/090/WO - *Weather Channel Overload*

- 1 bit [.]
- raw value

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

- 3 bits [...]
- raw value

I009/100 - Vector Count

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

Structure:

- 16 bits [.....]
- unsigned integer

User Application Profile for Category 009

- (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
- (10) (spare)
- (11) (spare)
- (12) (spare)
- (13) (spare)
- (14) (spare)
- (FX) - Field extension indicator