cat019 category specification

Release 2010-12-01, 1.3

Multilateration System Status Messages

2010-12-01

CONTENTS:

category: 019

edition: 1.3

date: 2010-12-01

CHAPTER

ONE

PREAMBLE

Surveillance data exchange.

CHAPTER

TWO

DESCRIPTION OF STANDARD DATA ITEMS

2.1 I019/000 - 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 information.

Structure:

- 8 bits [. . . . . .]
- values:

  1: Start of Update Cycle
  2: Periodic Status Message
  3: Event-triggered Status Message

NOTES:

1. In applications where data of various types is exchanged, the Message Type Data Item facilitates the proper message handling at the receiver side.
2. All Message Type values are reserved for common standard use.

2.2 I019/010 - Data Source Identifier

Definition: Identification of the system from which the data is received.

Structure:

I019/010/SAC - *System Area Code*

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

I019/010/SIC - *System Identification code*

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

Note:

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

2.3 I019/140 - Time of Day

Definition: Absolute time stamping expressed as UTC.

Structure:

- 24 bits [. . . . . .]
- unsigned quantity
- scaling factor: 1
- fractional bits: 7
- unit: "s"
- LSB = $1/2^7$ s = $1/128$ s ≈ 0.0078125 s

Note:

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

2.4 I019/550 - System Status

Definition: Information concerning the configuration and status of a System.

Structure:

I019/550/NOGO - *Operational Release Status of the System*

- 2 bits [. .]
- values:

  0: Operational
  1: Degraded
  2: NOGO
  3: undefined

I019/550/OVL - *Overload indicator*

- 1 bit [.]
- values:

  0: No overload
  1: Overload

I019/550/TSV - *Time Source Validity*

- 1 bit [.]
- values:

  0: valid
  1: invalid

I019/550/TTF - *Test Target*

- 1 bit [.]
- values:

  0: Test Target Operative
  1: Test Target Failure

I019/550/(spare)

- 3 bits [. . .]

Note:

A time source is considered as valid when either externally synchronised or running on a local oscillator within the required accuracy of UTC.

2.5 I019/551 - Tracking Processor Detailed Status

Definition: Information concerning the configuration and status of the Tracking processors.

Structure:

I019/551/TP1A

- 1 bit [.]
- values:

  0: Standby
  1: Exec

I019/551/TP1B

- 1 bit [.]
- values:

  0: Faulted
  1: Good

I019/551/TP2A

- 1 bit [.]
- values:

  0: Standby
  1: Exec

I019/551/TP2B

- 1 bit [.]
- values:

  0: Faulted
  1: Good

I019/551/TP3A

- 1 bit [.]
- values:

  0: Standby
  1: Exec

I019/551/TP3B

- 1 bit [.]
- values:

  0: Faulted
  1: Good

I019/551/TP4A

- 1 bit [.]
- values:

  0: Standby
  1: Exec

I019/551/TP4B

- 1 bit [.]
- values:

  0: Faulted
  1: Good

Note:

Both Bits of one TP set to zero means, that this TP is not used in the system.

2.6 I019/552 - Remote Sensor Detailed Status

Definition: Information concerning the configuration and status of the Remote Sensors (RS)

Structure:

Repetitive item, repetition factor 8 bits.

I019/552/RSI - *8-bit Identification number of RS*

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

I019/552/(spare)

- 1 bit [.]

I019/552/RS1090 - *Receiver 1090 MHz*

- 1 bit [.]
- values:

  0: Not present
  1: present

I019/552/TX1030 - *Transmitter 1030 MHz*

- 1 bit [.]
- values:

  0: Not present
  1: present

I019/552/TX1090 - *Transmitter 1090 MHz*

- 1 bit [.]
- values:

  0: Not present
  1: present

I019/552/RSS - *RS Status*

- 1 bit [.]

- values:

  0: Faulted
  1: Good

I019/552/RSO - *RS Operational*

- 1 bit [.]
- values:

  0: Offline
  1: Online

I019/552/(spare)

- 2 bits [. .]

2.7 I019/553 - Reference Transponder Detailed Status

Definition: Information concerning the configuration and status of the Reference Transponder.

Structure:

Extended item with first part `8 bits` long and optional `8 bits` extends.

I019/553/REFTR1 - *Ref Trans 1 Status*

- 2 bits [. .]
- values:

  1: Warning
  2: Faulted
  3: Good

I019/553/(spare)

- 2 bits [. .]

I019/553/REFTR2 - *Ref Trans 2 Status*

- 2 bits [. .]
- values:

  1: Warning
  2: Faulted
  3: Good

I019/553/(spare)

- 1 bit [.]

`(FX)`

- extension bit

  0: End of data item
  1: Extension into next extent

I019/553/REFTR3 - *Ref Trans 3 Status*

- 2 bits [. .]
- values:

  1: Warning

2: Faulted
3: Good

I019/553/(spare)

- 2 bits [. .]

I019/553/REFTR4 - *Ref Trans 4 Status*

- 2 bits [. .]
- values:

1: Warning
2: Faulted
3: Good

I019/553/(spare)

- 1 bit [.]

(FX)

- extension bit

0: End of data item
1: Extension into next extent

2.8 I019/600 - Position of the MLT System Reference Point

Definition: Position of the MLT reference point in WGS-84 Coordinates.

Structure:

I019/600/LAT - *Latitude*

- 32 bits [. . . . . .]
- signed quantity
- scaling factor: 180
- fractional bits: 30
- unit: “deg”
- LSB = $180/2^{30}$ deg = $180/1073741824$ deg $\approx 1.6763806343078613e-07$ deg
- value $>= -90$ deg
- value $<= 90$ deg

I019/600/LON - *Longitude*

- 32 bits [. . . . . .]
- signed quantity
- scaling factor: 180
- fractional bits: 30
- unit: “deg”
- LSB = $180/2^{30}$ deg = $180/1073741824$ deg $\approx 1.6763806343078613e-07$ deg
- value $>= -180$ deg
- value < 180 deg

2.9 I019/610 - Height of the MLT System Reference Point

Definition: Height of the MLT system reference point in two's complement form. The height shall use mean sea level as the zero reference level.

Structure:

- 16 bits [. . . . .]
- signed quantity
- scaling factor: 1
- fractional bits: 2
- unit: "m"
- LSB = $1/2^2$ m = $1/4$ m ≈ 0.25 m
- value $>= -8192$ m
- value $<= 8192$ m

2.10 I019/620 - WGS-84 Undulation

Definition: WGS-84 undulation value of the MLT system reference point, in meters. Geoid undulation value is the difference between the ellipsoidal height and the height above mean sea level

Structure:

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

2.11 I019/RE - Reserved Expansion Field

Definition: Expansion

Structure:

Explicit item

2.12 I019/SP - Special Purpose Field

Definition: Special Purpose Field

Structure:

Explicit item

CHAPTER

THREE

USER APPLICATION PROFILE FOR CATEGORY 019

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CHAPTER

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