EUROCONTROL

cat023 category specification

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CNS/ATM Ground Station and Service Status Reports

2009-03-01

CONTENTS:

category: 023

edition: 1.2

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PREAMBLE

Surveillance data exchange.

DESCRIPTION OF STANDARD DATA ITEMS

2.1 I023/000 - Report Type

Definition: This Data Item allows for a more convenient handling of the reports at the receiver side by further defining the type of transaction.

Structure:

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

    1: Ground station status report
    2: Service status report
    3: Service statistics report

NOTES:

1. In applications where transactions of various types are exchanged, the Report Type Data Item facilitates the proper report handling at the receiver side.

2. All Report Type values are reserved for common standard use.

2.2 I023/010 - Data Source Identifier

Definition: Identification of the Ground Station from which the data is received.

Structure:

I023/010/SAC - *System Area Code*

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

I023/010/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 I023/015 - Service Type and Identification

Definition: Identifies the type of service being reported.

Structure:

    I023/015/SID - *Service Identification*

- 4 bits [. . . .]
- raw value

    I023/015/STYP - *Type of Service*

- 4 bits [. . . .]
- values:

        1: ADS-B VDL4
        2: ADS-B Ext Squitter
        3: ADS-B UAT
        4: TIS-B VDL4
        5: TIS-B Ext Squitter
        6: TIS-B UAT
        7: FIS-B VDL4
        8: GRAS VDL4
        9: MLT

Note:

- The service identification is allocated by the system.
- The service identification is also available in item I021/015.

2.4 I023/070 - Time of Day

Definition: Absolute time stamping expressed as UTC time.

Structure:

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

Notes:

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

2.5 I023/100 - Ground Station Status

Definition: Information concerning the status of a Ground Station.

Structure:

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

    I023/100/NOGO - *Operational Release Status of the Data*

- 1 bit [.]

- values:

    0: Data is released for operational use
    1: Data must not be used operationally

    I023/100/ODP - *Data Processor Overload Indicator*

- 1 bit [.]

- values:

    0: Default, no overload
    1: Overload in DP

    I023/100/OXT - *Ground Interface Data Communications Overload*

- 1 bit [.]

- values:

    0: Default, no overload
    1: Overload in transmission subsystem

    I023/100/MSC - *Monitoring System Connected Status*

- 1 bit [.]

- values:

    0: Monitoring system not connected or unknown
    1: Monitoring system connected

    I023/100/TSV - *Time Source Validity*

- 1 bit [.]

- values:

    0: valid
    1: invalid

    I023/100/SPO - *Indication of spoofing attack*

- 1 bit [.]

- values:

    0: no spoofing detected
    1: potential spoofing attack

    I023/100/RN - *Renumbering Indication for Track ID*

- 1 bit [.]

- values:

    0: default
    1: track numbering has restarted

    `(FX)`

- extension bit

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

I023/100/GSSP - *Ground Station Status Reporting Period*

- 7 bits [. . . . . . .]

- signed quantity

- scaling factor: 1

- fractional bits: 0

- unit: "s"

- LSB = 1 s

- value $>= 1$ s

- value $<= 127$ s

(FX)

- extension bit

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

Notes:

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

2. Bit 8 (NOGO), when set to "1" indicates that the data transmitted by the GS is not released for operational use.

3. Bit 2 indicates that the allocation of Track-IDs (Item I021/161) was re-started.

2.6 I023/101 - Service Configuration

Definition: Information concerning the configuration of a Service.

Structure:

Extended item with first part `16 bits` long and optional `8 bits` extends.

I023/101/RP - *Report Period for Category 021 Reports*

- 8 bits [. . . . .]

- unsigned quantity

- scaling factor: 1

- fractional bits: 1

- unit: "s"

- LSB = $1/2^1$ s = $1/2$ s ≈ 0.5 s

I023/101/SC - *Service Class*

- 3 bits [. . .]

- values:

    0: No information
    1: NRA class

    2: reserved for future use
    3: reserved for future use
    4: reserved for future use
    5: reserved for future use
    6: reserved for future use
    7: reserved for future use

I023/101/(spare)

  • 4 bits [. . . .]

(FX)

  • extension bit

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

I023/101/SSSP - *Service Status Reporting Period*

  • 7 bits [. . . . . . .]

  • signed quantity

  • scaling factor: 1

  • fractional bits: 0

  • unit: "s"

  • LSB = 1 s

  • value >= 1 s

  • value <= 127 s

(FX)

  • extension bit

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

2.7 I023/110 - Service Status

Definition: Information concerning the status of the Service provided by a Ground Station.

Structure:

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

I023/110/(spare)

  • 4 bits [. . . .]

I023/110/STAT - *Status of the Service*

  • 3 bits [. . .]

  • values:

    0: Unknown
    1: Failed
    2: Disabled
    3: Degraded
    4: Normal
    5: Initialisation

(FX)

- extension bit

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

2.8 I023/120 - Service Statistics

Definition: Statistics concerning the service. Provides counts of various ADS-B message types that have been received since the report was last sent.

Structure:

Repetitive item, repetition factor 8 bits.

I023/120/TYPE - *Type of report counter*

- 8 bits [........]

- values:

    0: Number of unknown messages received
    1: Number of too old messages received
    2: Number of failed message conversions
    3: Total Number of messages received
    20: Number of TIS-B management messages received
    21: Number of Basic messages received
    22: Number of High Dynamic messages received
    23: Number of Full Position messages received
    24: Number of Basic Ground messages received
    25: Number of TCP messages received
    26: Number of UTC time messages received
    27: Number of Data messages received
    28: Number of High Resolution messages received
    29: Number of Aircraft Target Airborne messages received
    30: Number of Aircraft Target Ground messages received
    31: Number of Ground Vehicle Target messages received
    32: Number of 2 slots TCP messages received

I023/120/REF - *Reference from which the messages are countered*

- 1 bit [.]

- values:

    0: From midnight
    1: From the last report

I023/120/(spare)

- 7 bits [.......]

I023/120/CV - *32-bit counter value*

- 32 bits [................................]

- raw value

2.9 I023/200 - Operational Range

Definition: Currently active operational range of the Ground Station.

Structure:

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

Notes:

1. Maximum value indicates "maximum value or above".

2.10 I023/RE - Reserved Expansion Field

Definition: Expansion

Structure:

Explicit item

2.11 I023/SP - Special Purpose Field

Definition: Special Purpose Field

Structure:

Explicit item

USER APPLICATION PROFILE FOR CATEGORY 023

- (1) `I023/010` - Data Source Identifier
- (2) `I023/000` - Report Type
- (3) `I023/015` - Service Type and Identification
- (4) `I023/070` - Time of Day
- (5) `I023/100` - Ground Station Status
- (6) `I023/101` - Service Configuration
- (7) `I023/200` - Operational Range
- `(FX)` - Field extension indicator
- (8) `I023/110` - Service Status
- (9) `I023/120` - Service Statistics
- (10) `(spare)`
- (11) `(spare)`
- (12) `(spare)`
- (13) `I023/RE` - Reserved Expansion Field
- (14) `I023/SP` - Special Purpose Field
- `(FX)` - Field extension indicator

CHAPTER

FOUR

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