



cat023 category specification

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CNS/ATM Ground Station and Service Status Reports

2009-03-01

CONTENTS:

1	Preamble	3
2	Description of standard data items	5
2.1	I023/000 - Report Type	5
2.2	I023/010 - Data Source Identifier	5
2.3	I023/015 - Service Type and Identification	6
2.4	I023/070 - Time of Day	6
2.5	I023/100 - Ground Station Status	7
2.6	I023/101 - Service Configuration	8
2.7	I023/110 - Service Status	9
2.8	I023/120 - Service Statistics	10
2.9	I023/200 - Operational Range	11
2.10	I023/RE - Reserved Expansion Field	11
2.11	I023/SP - Special Purpose Field	11
3	User Application Profile for Category 023	13
4	Indices and tables	15

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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:

SAC - *System Area Code*

- 8 bits [.]
- raw value

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:

SID - *Service Identification*

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

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"
- $\text{LSB} = 1/2^7 \text{ s} = 1/128 \text{ s} \approx 0.0078125 \text{ s}$

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.

NOGO - *Operational Release Status of the Data*

- 1 bit [.]
- values:
 - 0: Data is released for operational use
 - 1: Data must not be used operationally

ODP - *Data Processor Overload Indicator*

- 1 bit [.]
- values:
 - 0: Default, no overload
 - 1: Overload in DP

OXT - *Ground Interface Data Communications Overload*

- 1 bit [.]
- values:
 - 0: Default, no overload
 - 1: Overload in transmission subsystem

MSC - *Monitoring System Connected Status*

- 1 bit [.]
- values:
 - 0: Monitoring system not connected or unknown
 - 1: Monitoring system connected

TSV - *Time Source Validity*

- 1 bit [.]
- values:
 - 0: valid
 - 1: invalid

SPO - *Indication of spoofing attack*

- 1 bit [.]
- values:
 - 0: no spoofing detected
 - 1: potential spoofing attack

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

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.

RP - *Report Period for Category 021 Reports*

- 8 bits [.]
- values:
 - 0: Data driven mode

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

(spare)

- 4 bits [. . . .]

(FX)

- extension bit

0: End of data item

1: Extension into next extent

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.

(spare)

- 4 bits [. . . .]

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.

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.

REF - *Reference from which the messages are countered*

- 1 bit [.]
- values:
 - 0: From midnight
 - 1: From the last report

(spare)

- 7 bits [.]

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

INDICES AND TABLES

- `genindex`
- `modindex`
- `search`