



cat063 category specification

Release 2020-08-04, 1.6

Sensor Status Reports

2020-08-04

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PREAMBLE

Surveillance data exchange.

DESCRIPTION OF STANDARD DATA ITEMS

2.1 I063/010 - Data Source Identifier

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

Structure:

I063/010/SAC - *System Area Code*

- 8 bits [.]
- raw value

I063/010/SIC - *System Identification Code*

- 8 bits [.]
- raw value

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

2.2 I063/015 - Service Identification

Definition: Identification of the service provided to one or more users.

Structure:

- 8 bits [.]
- raw value

The service identification is allocated by the SDPS

2.3 I063/030 - Time of Message

Definition: Absolute time stamping of the message, in the form of elapsed time since last midnight, expressed as UTC.

Structure:

- 24 bits [.]
- unsigned quantity
- scaling factor: 1
- fractional bits: 7
- unit: "s"

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

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

2.4 I063/050 - Sensor Identifier

Definition: None

Structure:

I063/050/SAC - System Area Code

- 8 bits [.]
- raw value

I063/050/SIC - System Identification Code

- 8 bits [.]
- raw value
- The up-to-date list of SACs is published on the EUROCONTROL Web Site (<http://www.eurocontrol.int/asterix>).
- If the SAC/SIC refers to an SDPS used as input, the respective sensor status information will be transmitted using the Reserved Expansion Field.

2.5 I063/060 - Sensor Configuration and Status

Definition: Configuration and status of the sensor

Structure:

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

I063/060/CON

- 2 bits [. .]
- values:
 - 0: Operational
 - 1: Degraded
 - 2: Initialization
 - 3: Not currently connected

I063/060/PSR

- 1 bit [.]
- values:
 - 0: PSR GO
 - 1: PSR NOGO

I063/060/SSR

- 1 bit [.]
- values:
 - 0: SSR GO
 - 1: SSR NOGO

I063/060/MDS

- 1 bit [.]
- values:
 - 0: MDS GO
 - 1: MDS NOGO

I063/060/ADS

- 1 bit [.]
- values:
 - 0: ADS GO
 - 1: ADS NOGO

I063/060/MLT

- 1 bit [.]
- values:
 - 0: MLT GO
 - 1: MLT NOGO

(FX)

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

I063/060/OPS - *Operational Release Status of the System*

- 1 bit [.]
- values:
 - 0: System is released for operational use
 - 1: Operational use of System is inhibited

I063/060/ODP - *Data Processor Overload Indicator*

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

I063/060/OXT - *Transmission Subsystem Overload Status*

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

I063/060/MSC - *Monitoring System Connected Status*

- 1 bit [.]
- values:
 - 0: Monitoring system connected
 - 1: Monitoring system disconnected

I063/060/TSV - *Time Source Validity*

- 1 bit [.]

- values:

0: Valid
1: Invalid

I063/060/NPW - *No Plot Warning*

- 1 bit [.]

- values:

0: Default (no meaning)
1: No plots being received

I063/060/(spare)

- 1 bit [.]

(FX)

- extension bit

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

1. GO/NOGO information from PSR, SSR, Mode S, ADS and MLT is derived from monosensor categories and has a meaning only for operational sensors, whereas (CON) is derived by the SDPS.
2. The information (OPS), (ODP), (OXT), (MSC) and (TSV) are only related to CNS/ATM Ground Station and are derived from monosensor category (ASTERIX Cat 023).

2.6 I063/070 - Time Stamping Bias

Definition: Plot Time stamping bias, in two's complement form

Structure:

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

2.7 I063/080 - SSR / Mode S Range Gain and Bias

Definition: SSR / Mode S Range Gain and Range Bias, in two's complement form.

Structure:

I063/080/SRG - *Mode S Range Gain*

- 16 bits [.....]
- signed quantity
- scaling factor: 0.00001
- fractional bits: 0

- LSB = 0.00001

I063/080/SRB - Mode S Range Bias

- 16 bits [.....]
- signed quantity
- scaling factor: 1
- fractional bits: 7
- unit: "NM"
- LSB = $1/2^7$ NM = $1/128$ NM ≈ 0.0078125 NM

Note:

The following formula is used to correct range:

$$\rho_{\text{corrected}} = \frac{\rho_{\text{measured}} - \text{range_bias}}{1 + \text{range_gain}}$$

2.8 I063/081 - SSR Mode S Azimuth Bias

Definition: SSR / Mode S Azimuth Bias, in two's complement form.

Structure:

- 16 bits [.....]
- signed quantity
- scaling factor: 360
- fractional bits: 16
- unit: "deg"
- LSB = $360/2^{16}$ deg = $360/65536$ deg ≈ 0.0054931640625 deg

Note:

The following formula is used to correct azimuth:

$$\theta_{\text{corrected}} = \theta_{\text{measured}} - \text{azimuth_bias}$$

2.9 I063/090 - PSR Range Gain and Bias

Definition: PSR Range Gain and PSR Range Bias, in two's complement form.

Structure:

I063/090/PRG - PSR Range Gain

- 16 bits [.....]
- signed quantity
- scaling factor: 0.00001
- fractional bits: 0
- LSB = 0.00001

I063/090/PRB - PSR Range Bias

- 16 bits [.....]

- signed quantity
- scaling factor: 1
- fractional bits: 7
- unit: “NM”
- $\text{LSB} = 1/2^7 \text{ NM} = 1/128 \text{ NM} \approx 0.0078125 \text{ NM}$

Note:

The following formula is used to correct range:

2.10 I063/091 - PSR Azimuth Bias

Definition: PSR Azimuth Bias, in two’s complement form.

Structure:

- 16 bits [.....]
- signed quantity
- scaling factor: 360
- fractional bits: 16
- unit: “deg”
- $\text{LSB} = 360/2^{16} \text{ deg} = 360/65536 \text{ deg} \approx 0.0054931640625 \text{ deg}$

Note:

The following formula is used to correct azimuth:

$$\theta_{\text{corrected}} = \theta_{\text{measured}} - azimuth_bias$$

2.11 I063/092 - PSR Elevation Bias

Definition: PSR Elevation Bias, in two’s complement form.

Structure:

- 16 bits [.....]
- signed quantity
- scaling factor: 360
- fractional bits: 16
- unit: “deg”
- $\text{LSB} = 360/2^{16} \text{ deg} = 360/65536 \text{ deg} \approx 0.0054931640625 \text{ deg}$

2.12 I063/RE - Reserved Expansion Field

Definition: Expansion

Structure:

Explicit item

2.13 I063/SP - Special Purpose Field

Definition: Special Purpose Field

Structure:

Explicit item

USER APPLICATION PROFILE FOR CATEGORY 063

- (1) I063/010 - Data Source Identifier
- (2) I063/015 - Service Identification
- (3) I063/030 - Time of Message
- (4) I063/050 - Sensor Identifier
- (5) I063/060 - Sensor Configuration and Status
- (6) I063/070 - Time Stamping Bias
- (7) I063/080 - SSR / Mode S Range Gain and Bias
- (FX) - Field extension indicator
- (8) I063/081 - SSR Mode S Azimuth Bias
- (9) I063/090 - PSR Range Gain and Bias
- (10) I063/091 - PSR Azimuth Bias
- (11) I063/092 - PSR Elevation Bias
- (12) (spare)
- (13) I063/RE - Reserved Expansion Field
- (14) I063/SP - Special Purpose Field
- (FX) - Field extension indicator

INDICES AND TABLES

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