Asterix category 063 - Sensor Status Reports

category: 063

edition: 1.6

date: 2020-08-04

Preamble

Surveillance data exchange.

Description of standard data items

I063/010 - Data Source Identifier

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

Group

I063/010/SAC - System Area Code

Element
bit size: 8
Raw Content

I063/010/SIC - System Identification Code

Element
bit size: 8
Raw Content

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

I063/015 - Service Identification

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

Element
bit size: 8
Raw Content

The service identification is allocated by the SDPS

I063/030 - Time of Message

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

Element
bit size: 24
Unsigned quantity
LSB = $1/2^7$ s $\approx 7.8125e-3$ s
unit: ”s”

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

I063/050 - Sensor Identifier

Group

I063/050/SAC - System Area Code

Element
bit size: 8
Raw Content

I063/050/SIC - System Identification Code

Element
bit size: 8
Raw Content

- 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.

I063/060 - Sensor Configuration and Status

definition: Configuration and status of the sensor

Extended

I063/060/CON

Element
bit size: 2
Values:

0: Operational
1: Degraded
2: Initialization
3: Not currently connected

I063/060/PSR

Element
bit size: 1
Values:

0: PSR GO
1: PSR NOGO

I063/060/SSR

Element
bit size: 1
Values:

0: SSR GO
1: SSR NOGO

I063/060/MDS

Element
bit size: 1
Values:

0: MDS GO
1: MDS NOGO

I063/060/ADS

Element
bit size: 1
Values:

0: ADS GO
1: ADS NOGO

I063/060/MLT

Element
bit size: 1
Values:

0: MLT GO
1: MLT NOGO

(FX) - extension bit

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

Element
bit size: 1
Values:

0: System is released for operational use
1: Operational use of System is inhibited

I063/060/ODP - Data Processor Overload Indicator

Element
bit size: 1
Values:

0: Default, no overload
1: Overload in DP

I063/060/OXT - Transmission Subsystem Overload Status

Element
bit size: 1
Values:

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

I063/060/MSC - Monitoring System Connected Status

Element
bit size: 1
Values:

0: Monitoring system connected
1: Monitoring system disconnected

I063/060/TSV - Time Source Validity

Element
bit size: 1
Values:

0: Valid
1: Invalid

I063/060/NPW - No Plot Warning

Element
bit size: 1
Values:

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

Spare bits: 1

(FX) - extension bit

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).

I063/070 - Time Stamping Bias

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

Element
bit size: 16
Signed quantity
LSB = 1 ms ≈ 1.0 ms
unit: ”ms”

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

definition: SSR / Mode S Range Gain and Range Bias, in two’s complement form.
Group

I063/080/SRG - Mode S Range Gain

Element
bit size: 16
Signed quantity
LSB = $1/100000 \approx 1.0e-5$
unit: ””

I063/080/SRB - Mode S Range Bias

Element
bit size: 16
Signed quantity
LSB = $1/2^7$ NM ≈ $7.8125e-3$ NM
unit: ”NM”

Note:

The following formula is used to correct range:

$$\rho_{\text{corrected}} = \frac{\rho_{\text{measured}} - range\_bias}{1 + range\_gain}$$

I063/081 - SSR Mode S Azimuth Bias

definition: SSR / Mode S Azimuth Bias, in two’s complement form.

Element
bit size: 16
Signed quantity
LSB = $360/2^16$ ° ≈ $5.4931640625e-3$ °
unit: ”°”

Note:

The following formula is used to correct azimuth:

$$\theta_{\text{corrected}} = \theta_{\text{measured}} - azimuth\_bias$$

I063/090 - PSR Range Gain and Bias

definition: PSR Range Gain and PSR Range Bias, in two’s complement form.
Group

I063/090/PRG - PSR Range Gain

Element
bit size: 16
Signed quantity
LSB = $1/100000 \approx 1.0e-5$
unit: ””

I063/090/PRB - PSR Range Bias

Element
bit size: 16
Signed quantity
LSB = $1/2^7$ NM ≈ $7.8125e-3$ NM
unit: ”NM”

Note:

The following formula is used to correct range:

rho_mathrm{corrected} = frac{rho_mathrm{measured} - range_bias}{1 + range_gain}

I063/091 - PSR Azimuth Bias

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

Element
bit size: 16
Signed quantity
LSB = $360/2^16$ ° ≈ $5.4931640625e-3$ °
unit: ”°”

Note:

The following formula is used to correct azimuth:

$$\theta_{\text{corrected}} = \theta_{\text{measured}} - azimuth\_bias$$

I063/092 - PSR Elevation Bias

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

Element
bit size: 16
Signed quantity
LSB = $360/2^16$ ° ≈ $5.4931640625e-3$ °
unit: ”°”

I063/RE - Reserved Expansion Field

definition: Expansion
Explicit (ReservedExpansion)

I063/SP - Special Purpose Field

definition: Special Purpose Field
Explicit (SpecialPurpose)

User Application Profile

- 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
- *Spare*
- 13: `I063/RE` - Reserved Expansion Field
- 14: `I063/SP` - Special Purpose Field
- (FX) - Field extension indicator