

Asterix category 011 - Transmission of A-SMGCS Data

category: 011

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Preamble

Surveillance data exchange.

Description of standard data items

I011/000 - 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 transaction.

Structure:

- 8 bits [.]
- values:
 - 1: Target reports, flight plan data and basic alerts
 - 2: Manual attachment of flight plan to track
 - 3: Manual detachment of flight plan to track
 - 4: Insertion of flight plan data
 - 5: Suppression of flight plan data
 - 6: Modification of flight plan data
 - 7: Holdbar status

I011/010 - Data Source Identifier

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

Structure:

I011/010/SAC - System Area Code Fixed to Zero

- 8 bits [.]
- raw value

I011/010/SIC - System Identification Code

- 8 bits [.]
- raw value

Note: The SAC is fixed to zero to indicate a data flow local to the airport.

I011/015 - Service Identification

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

Structure:

- 8 bits [.]
- raw value

Note: The service identification is allocated by the A-SMGCS

I011/041 - Position in WGS-84 Coordinates

Definition: Position of a target in WGS-84 Coordinates.

Structure:

I011/041/LAT - *Latitude in WGS-84 in Two's Complement*

- 32 bits [.....]
- signed quantity
- unit: "°"
- $\text{LSB} = 180/2^{31} \text{ }^\circ \approx 8.38e - 8 \text{ }^\circ$
- value $\geq -90 \text{ }^\circ$
- value $\leq 90 \text{ }^\circ$

I011/041/LON - *Longitude in WGS-84 in Two's Complement*

- 32 bits [.....]
- signed quantity
- unit: "°"
- $\text{LSB} = 180/2^{31} \text{ }^\circ \approx 8.38e - 8 \text{ }^\circ$
- value $\geq -180 \text{ }^\circ$
- value $< 180 \text{ }^\circ$

I011/042 - Calculated Position in Cartesian Co-ordinates

Definition: Calculated position of a target in Cartesian co-ordinates (two's complement form).

Structure:

I011/042/X - *X-Component*

- 16 bits [.....]
- signed quantity
- unit: "m"
- $\text{LSB} = 1 \text{ m}$
- value $\geq -32768 \text{ m}$
- value $\leq 32768 \text{ m}$

I011/042/Y - *Y-Component*

- 16 bits [.....]
- signed quantity
- unit: "m"
- $\text{LSB} = 1 \text{ m}$
- value $\geq -32768 \text{ m}$
- value $\leq 32768 \text{ m}$

I011/060 - Mode-3/A Code in Octal Representation

Definition: Track Mode-3/A code converted into octal representation.

Structure:

I011/060/(spare)

- 4 bits [....]

I011/060/MOD3A - *Mode-3/A Reply in Octal Representation*

- 12 bits [.....]
- Octal string (3-bits per digit)

I011/090 - Measured Flight Level

Definition: Last valid and credible flight level used to update the track, in two's complement representation.

Structure:

- 16 bits [.....]
- signed quantity
- unit: "FL"
- $LSB = 1/2^2 FL \approx 0.25 FL$
- value $\geq -12 FL$
- value $\leq 1500 FL$

Note: The criteria to determine the credibility of the flight level are Tracker dependent. Credible means: within reasonable range of change with respect to the previous detection.

I011/092 - Calculated Track Geometric Altitude

Definition: Calculated geometric vertical distance above mean sea level, not related to barometric pressure.

Structure:

- 16 bits [.....]
- signed quantity
- unit: "ft"
- $LSB = 25/2^2 ft \approx 6.25 ft$
- value $\geq -1500 ft$
- value $\leq 150000 ft$

Note: The source of altitude is identified in bits (SRC) of item I011/170 Track Status.

I011/093 - Calculated Track Barometric Altitude

Definition: Calculated Barometric Altitude of the track.

Structure:

I011/093/QNH - QNH Correction Applied

- 1 bit [.]
- values:
 - 0: No QNH correction applied
 - 1: QNH correction applied

I011/093/CTBA - Calculated Track Barometric Altitude

- 15 bits [.....]
- signed quantity
- unit: "FL"
- $LSB = 1/2^2 FL \approx 0.25 FL$
- value $\geq -15 FL$
- value $\leq 1500 FL$

I011/140 - Time of Track Information

Definition: Absolute time stamping expressed as UTC.

Structure:

- 24 bits [.]
- unsigned quantity
- unit: "s"
- $LSB = 1/2^7 \text{ s} \approx 7.81e - 3 \text{ s}$

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

I011/161 - Track Number

Definition: Identification of a fusion track (single track number).

Structure:

I011/161/(spare)

- 1 bit [.]

I011/161/FTN - Fusion Track Number

- 15 bits [.]
- raw value

I011/170 - Track Status

Definition: Status of track.

Structure:

Extended item.

I011/170/MON

- 1 bit [.]
- values:
 - 0: Multisensor Track
 - 1: Monosensor Track

I011/170/GBS

- 1 bit [.]
- values:
 - 0: Transponder Ground bit not set or unknown
 - 1: Transponder Ground bit set

I011/170/MRH

- 1 bit [.]
- values:
 - 0: Barometric altitude (Mode C) more reliable
 - 1: Geometric altitude more reliable

I011/170/SRC

- 3 bits [. . .]

- values:
 - 0: No source
 - 1: GPS
 - 2: 3d radar
 - 3: Triangulation
 - 4: Height from coverage
 - 5: Speed look-up table
 - 6: Default height
 - 7: Multilateration

I011/170/CNF

- 1 bit [.]
- values:
 - 0: Confirmed track
 - 1: Tentative track

(FX)

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

I011/170/SIM

- 1 bit [.]
- values:
 - 0: Actual Track
 - 1: Simulated track

I011/170/TSE

- 1 bit [.]
- values:
 - 0: Default value
 - 1: Track service end (i.e. last message transmitted to the user for the track)

I011/170/TSB

- 1 bit [.]
- values:
 - 0: Default value
 - 1: Track service begin (i.e. first message transmitted to the user for the track)

I011/170/FRIFOE

- 2 bits [.]
- values:
 - 0: No Mode 4 interrogation
 - 1: Friendly target
 - 2: Unknown target
 - 3: No reply

I011/170/ME

- 1 bit [.]
- values:

- 0: Default value
- 1: Military Emergency present in the last report received from a sensor capable of decoding this data

I011/170/MI

- 1 bit [.]
- values:
 - 0: End of Data Item
 - 1: Military Identification present in the last report received from a sensor capable of decoding this data

(FX)

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

I011/170/AMA

- 1 bit [.]
- values:
 - 0: Track not resulting from amalgamation process
 - 1: Track resulting from amalgamation process

I011/170/SPI

- 1 bit [.]
- values:
 - 0: Default value
 - 1: SPI present in the last report received from a sensor capable of decoding this data

I011/170/CST

- 1 bit [.]
- values:
 - 0: Default value
 - 1: Age of the last received track update is higher than system dependent threshold (coasting)

I011/170/FPC

- 1 bit [.]
- values:
 - 0: Not flight-plan correlated
 - 1: Flight plan correlated

I011/170/AFF

- 1 bit [.]
- values:
 - 0: Default value
 - 1: ADS-B data inconsistent with other surveillance information

I011/170/(spare)

- 2 bits [.]

(FX)

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

I011/202 - Calculated Track Velocity in Cartesian Coordinates

Definition: Calculated track velocity expressed in Cartesian co-ordinates.

Structure:

I011/202/VX - V_x

- 16 bits [.....]
- signed quantity
- unit: "m/s"
- $LSB = 1/2^2 \text{ m/s} \approx 0.25 \text{ m/s}$
- value $\geq -8192 \text{ m/s}$
- value $\leq 8192 \text{ m/s}$

I011/202/VY - V_y

- 16 bits [.....]
- signed quantity
- unit: "m/s"
- $LSB = 1/2^2 \text{ m/s} \approx 0.25 \text{ m/s}$
- value $\geq -8192 \text{ m/s}$
- value $\leq 8192 \text{ m/s}$

I011/210 - Calculated Acceleration

Definition: Calculated Acceleration of the target, in two's complement form.

Structure:

I011/210/AX - A_x

- 8 bits [.....]
- signed quantity
- unit: "m/s²"
- $LSB = 1/2^2 \text{ m/s}^2 \approx 0.25 \text{ m/s}^2$
- value $\geq -31 \text{ m/s}^2$
- value $\leq 31 \text{ m/s}^2$

I011/210/AY - A_y

- 8 bits [.....]
- signed quantity
- unit: "m/s²"
- $LSB = 1/2^2 \text{ m/s}^2 \approx 0.25 \text{ m/s}^2$
- value $\geq -31 \text{ m/s}^2$
- value $\leq 31 \text{ m/s}^2$

I011/215 - Calculated Rate Of Climb/Descent

Definition: Calculated rate of Climb/Descent of an aircraft, in two's complement form.

Structure:

- 16 bits [.....]
- signed quantity
- unit: "ft/min"
- $LSB = 25/2^2 \text{ ft/min} \approx 6.25 \text{ ft/min}$
- value $\geq -204800 \text{ ft/min}$
- value $\leq 204800 \text{ ft/min}$

I011/245 - Target Identification

Definition: Target (aircraft or vehicle) identification in 8 characters.

Structure:

I011/245/STI

- 2 bits [. .]
- values:
 - 0: Callsign or registration downlinked from transponder
 - 1: Callsign not downlinked from transponder
 - 2: Registration not downlinked from transponder

I011/245/(spare)

- 6 bits [.]

I011/245/TID - Target Identification

- 48 bits [. . . 48 bits . . .]
- ICAO string (6-bits per character)

Note: Characters 1-8 (coded on 6 bits each) defining target identification

I011/270 - Target Size and Orientation

Definition: Target size defined as length and with of the detected target, and orientation.

Structure:

Extended item.

I011/270/LENGTH - Length

- 7 bits [.]
- unsigned quantity
- unit: "m"
- LSB = 1 m

(FX)

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

I011/270/ORIENTATION - Orientation

- 7 bits [.]
- unsigned quantity
- unit: "°"
- $LSB = 360/2^7 \text{ °} \approx 2.81 \text{ °}$

(FX)

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

I011/270/WIDTH - Width

- 7 bits [.]

- unsigned quantity
- unit: "m"
- LSB = 1 m

(FX)

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

Note: The orientation gives the direction which the aircraft nose is pointing, relative to the Geographical North.

I011/290 - System Track Update Ages

Definition: Ages of the last plot/local track, or the last valid mode-A/mode-C, used to update the system track.

Structure:

Compound item (FX)

I011/290/PSR - *Age of The Last Primary Detection Used to Update the Track*

- 8 bits [.]
- unsigned quantity
- unit: "s"
- LSB = $1/2^2$ s \approx 0.25 s

I011/290/SSR - *Age of the Last Secondary Detection Used to Update the Track*

- 8 bits [.]
- unsigned quantity
- unit: "s"
- LSB = $1/2^2$ s \approx 0.25 s

I011/290/MDA - *Age of the Last Mode A Detection Used to Update the Track*

- 8 bits [.]
- unsigned quantity
- unit: "s"
- LSB = $1/2^2$ s \approx 0.25 s

I011/290/MFL - *Age of the Last Mode C Detection Used to Update the Track*

- 8 bits [.]
- unsigned quantity
- unit: "s"
- LSB = $1/2^2$ s \approx 0.25 s

I011/290/MDS - *Age of the Last Mode S Detection Used to Update the Track*

- 8 bits [.]
- unsigned quantity
- unit: "s"
- LSB = $1/2^2$ s \approx 0.25 s

I011/290/ADS - *Age of the Last ADS Report Used to Update the Track*

- 16 bits [.]
- unsigned quantity
- unit: "s"

- $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$

I011/290/ADB - *Age of the Last ADS-B Report Used to Update the Track*

- 8 bits [.]
- unsigned quantity
- unit: "s"
- $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$

I011/290/MD1 - *Age of the Last Valid Mode 1 Used to Update the Track*

- 8 bits [.]
- unsigned quantity
- unit: "s"
- $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$

I011/290/MD2 - *Age of the Last Mode 2 Used to Update the Track*

- 8 bits [.]
- unsigned quantity
- unit: "s"
- $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$

I011/290/LOP - *Age of the Last Magnetic Loop Detection*

- 8 bits [.]
- unsigned quantity
- unit: "s"
- $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$

I011/290/TRK - *Actual Track Age Since First Occurrence*

- 8 bits [.]
- unsigned quantity
- unit: "s"
- $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$

I011/290/MUL - *Age of the Last Multilateration Detection*

- 8 bits [.]
- unsigned quantity
- unit: "s"
- $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$

Note: The ages are counted from Data Item I011/140, Time Of Track Information, using the following formula: $\text{Age} = \text{Time of track information} - \text{Time of last (valid) update}$ If the computed age is greater than the maximum value or if the data has never been received, then the corresponding subfield is not sent.

I011/300 - Vehicle Fleet Identification

Definition: Vehicle fleet identification number.

Structure:

- 8 bits [.]
- values:

- 0: Flyco (follow me)
- 1: ATC equipment maintenance
- 2: Airport maintenance
- 3: Fire
- 4: Bird scarer
- 5: Snow plough
- 6: Runway sweeper
- 7: Emergency
- 8: Police
- 9: Bus
- 10: Tug (push/tow)
- 11: Grass cutter
- 12: Fuel
- 13: Baggage
- 14: Catering
- 15: Aircraft maintenance
- 16: Unknown

I011/310 - Pre-programmed Message

Definition: Number related to a pre-programmed message that can be transmitted by a vehicle.

Structure:

I011/310/TRB - In Trouble

- 1 bit [.]
- values:
 - 0: Default
 - 1: In Trouble

I011/310/MSG - Message

- 7 bits [.....]
- values:
 - 1: Towing aircraft
 - 2: FOLLOW-ME operation
 - 3: Runway check
 - 4: Emergency operation (fire, medical...)
 - 5: Work in progress (maintenance, birds scarer, sweepers...)

I011/380 - Mode-S / ADS-B Related Data

Definition: Data specific to Mode-S ADS-B.

Structure:

Compound item (FX)

I011/380/MB - BDS

Repetitive item, repetition factor 8 bits.

- 64 bits [... 64 bits ...]
- BDS register with address

I011/380/ADR - 24 Bits Aircraft Address

- 24 bits [.....]
- raw value

(empty subitem)

I011/380/COMACAS - *Communications/ACAS Capability and Flight Status*

I011/380/COMACAS/COM - *Communications Capability of the Transponder*

- 3 bits [. . .]
- values:
 - 0: No communications capability (surveillance only)
 - 1: Comm. A and Comm. B capability
 - 2: Comm. A, Comm. B and Uplink ELM
 - 3: Comm. A, Comm. B, Uplink ELM and Downlink ELM
 - 4: Level 5 Transponder capability
 - 5: Not assigned
 - 6: Not assigned
 - 7: Not assigned

I011/380/COMACAS/STAT - *Flight Status*

- 4 bits [. . . .]
- values:
 - 0: No alert, no SPI, aircraft airborne
 - 1: No alert, no SPI, aircraft on ground
 - 2: Alert, no SPI, aircraft airborne
 - 3: Alert, no SPI, aircraft on ground
 - 4: Alert, SPI, aircraft airborne or on ground
 - 5: No alert, SPI, aircraft airborne or on ground
 - 6: General Emergency
 - 7: Lifeguard / medical
 - 8: Minimum fuel
 - 9: No communications
 - 10: Unlawful

I011/380/COMACAS/(spare)

- 1 bit [.]

I011/380/COMACAS/SSC - *Specific Service Capability*

- 1 bit [.]
- values:
 - 0: No
 - 1: Yes

I011/380/COMACAS/ARC - *Altitude Reporting Capability*

- 1 bit [.]
- values:
 - 0: 100 ft resolution
 - 1: 25 ft resolution

I011/380/COMACAS/AIC - *Aircraft Identification Capability*

- 1 bit [.]
- values:
 - 0: No
 - 1: Yes

I011/380/COMACAS/B1A - *BDS 1,0 Bit 16*

- 1 bit [.]
- raw value

I011/380/COMACAS/B1B - *BDS 1,0 Bit 37/40*

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

I011/380/COMACAS/AC - *ACAS Operational*

- 1 bit [.]
- values:
 - 0: No
 - 1: Yes

I011/380/COMACAS/MN - *Multiple Navigational Aids Operating*

- 1 bit [.]
- values:
 - 0: No
 - 1: Yes

I011/380/COMACAS/DC - *Differential Correction*

- 1 bit [.]
- values:
 - 0: Yes
 - 1: No

I011/380/COMACAS/(spare)

- 5 bits [.....]

(empty subitem)

(empty subitem)

(empty subitem)

I011/380/ACT - *Aircraft Derived Aircraft Type*

- 32 bits [.....]
- Ascii string (8-bits per character)

I011/380/ECAT - *Emitter Category*

- 8 bits [.....]
- values:
 - 1: Light aircraft <= 7000 kg
 - 2: Reserved
 - 3: 7000 kg < medium aircraft < 136000 kg
 - 4: Reserved
 - 5: 136000 kg <= heavy aircraft
 - 6: Highly manoeuvrable (5g acceleration capability) and high speed (>400 knots cruise)
 - 7: Reserved
 - 8: Reserved
 - 9: Reserved
 - 10: Rotocraft
 - 11: Glider / sailplane
 - 12: Lighter-than-air
 - 13: Unmanned aerial vehicle
 - 14: Space / transatmospheric vehicle
 - 15: Ultralight / handglider / paraglider
 - 16: Parachutist / skydiver
 - 17: Reserved
 - 18: Reserved
 - 19: Reserved
 - 20: Surface emergency vehicle
 - 21: Surface service vehicle
 - 22: Fixed ground or tethered obstruction
 - 23: Reserved
 - 24: Reserved

(empty subitem)

I011/380/AVTECH - *Available Technologies*

I011/380/AVTECH/VDL - *VDL Mode 4*

- 1 bit [.]
- values:
 - 0: VDL Mode 4 available
 - 1: VDL Mode 4 not available

I011/380/AVTECH/MDS - *Mode S*

- 1 bit [.]
- values:
 - 0: Mode S available
 - 1: Mode S not available

I011/380/AVTECH/UAT - *UAT*

- 1 bit [.]
- values:
 - 0: UAT available
 - 1: UAT not available

I011/380/AVTECH/(spare)

- 5 bits [.....]

I011/390 - Flight Plan Related Data

Definition: All flight plan related information.

Structure:

Compound item (FX)

I011/390/FPPSID - *FPPS Identification Tag*

I011/390/FPPSID/SAC - *System Area Code*

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

I011/390/FPPSID/SIC - *System Identity Code*

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

I011/390/CSN - *Callsign*

- 56 bits [... 56 bits ...]
- Ascii string (8-bits per character)

I011/390/IFPSFLIGHTID - *IFPS_FLIGHT_ID*

I011/390/IFPSFLIGHTID/TYP - *IFPS Flight ID Type*

- 2 bits [..]
- values:
 - 0: Plan number
 - 1: Unit 1 internal flight number
 - 2: Unit 2 internal flight number
 - 3: Unit 3 internal flight number

I011/390/IFPSFLIGHTID/(spare)

- 3 bits [...]

I011/390/IFPSFLIGHTID/NBR - *IFPS Flight ID Number*

- 27 bits [.....]
- raw value

I011/390/FLIGHTCAT - *Flight Category*

I011/390/FLIGHTCAT/GATOAT - *Flight Type*

- 2 bits [.]
- values:
 - 0: Unknown
 - 1: General Air Traffic
 - 2: Operational Air Traffic
 - 3: Not applicable

I011/390/FLIGHTCAT/FR1FR2 - *Flight Rules*

- 2 bits [.]
- values:
 - 0: Instrument Flight Rules
 - 1: Visual Flight rules
 - 2: Not applicable
 - 3: Controlled Visual Flight Rules

I011/390/FLIGHTCAT/RVSM - *RVSM*

- 2 bits [.]
- values:
 - 0: Unknown
 - 1: Approved
 - 2: Exempt
 - 3: Not Approved

I011/390/FLIGHTCAT/HPR - *Flight Priority*

- 1 bit [.]
- values:
 - 0: Normal Priority Flight
 - 1: High Priority Flight

I011/390/FLIGHTCAT/(spare)

- 1 bit [.]

I011/390/TOA - *Type of Aircraft*

- 32 bits [.....]
- Ascii string (8-bits per character)

I011/390/WTC - *Wake Turbulence Category*

- 8 bits [.....]
- values:
 - 76: Light
 - 77: Medium
 - 72: Heavy
 - 74: Super

I011/390/ADEP - *Departure Airport*

- 32 bits [.....]
- Ascii string (8-bits per character)

I011/390/ADES - *Destination Airport*

- 32 bits [.....]

- Ascii string (8-bits per character)

I011/390/RWY - *Runway Designation*

- 24 bits [.]
- Ascii string (8-bits per character)

I011/390/CFL - *Current Cleared Flight Level*

- 16 bits [.]
- unsigned quantity
- unit: "FL"
- LSB = $1/2^2$ FL \approx 0.25 FL

I011/390/CCP - *Current Control Position*

I011/390/CCP/CENTRE - *8-bit Group Identification Code*

- 8 bits [.]
- raw value

I011/390/CCP/POSITION - *8-bit Control Position Identification Code*

- 8 bits [.]
- raw value

I011/390/TOD - *Time of Departure*

Repetitive item, repetition factor 8 bits.

I011/390/TOD/TYP - *Time Type*

- 5 bits [.]
- values:
 - 0: Scheduled off-block time
 - 1: Estimated off-block time
 - 2: Estimated take-off time
 - 3: Actual off-block time
 - 4: Predicted time at runway hold
 - 5: Actual time at runway hold
 - 6: Actual line-up time
 - 7: Actual take-off time
 - 8: Estimated time of arrival
 - 9: Predicted landing time
 - 10: Actual landing time
 - 11: Actual time off runway
 - 12: Predicted time to gate
 - 13: Actual on-block time

I011/390/TOD/DAY - *Day*

- 2 bits [. .]
- values:
 - 0: Today
 - 1: Yesterday
 - 2: Tomorrow

I011/390/TOD/(spare)

- 4 bits [. . . .]

I011/390/TOD/HOR - *Hours, from 0 to 23*

- 5 bits [.]
- unsigned integer
- value \geq 0
- value \leq 23

I011/390/TOD/(spare)

- 2 bits [..]

I011/390/TOD/MIN - *Minutes, from 0 to 59*

- 6 bits [.....]
- unsigned integer
- value ≥ 0
- value ≤ 59

I011/390/TOD/AVS - *Seconds Available*

- 1 bit [.]
- values:
 - 0: Seconds available
 - 1: Seconds not available

I011/390/TOD/(spare)

- 1 bit [.]

I011/390/TOD/SEC - *Seconds, from 0 to 59*

- 6 bits [.....]
- unsigned integer
- value ≥ 0
- value ≤ 59

I011/390/AST - *Aircraft Stand*

- 48 bits [... 48 bits ...]
- Ascii string (8-bits per character)

I011/390/STS - *Stand Status*

I011/390/STS/EMP - *Stand Empty*

- 2 bits [..]
- values:
 - 0: Empty
 - 1: Occupied
 - 2: Unknown

I011/390/STS/AVL - *Stand Available*

- 2 bits [..]
- values:
 - 0: Available
 - 1: Not available
 - 2: Unknown

I011/390/STS/(spare)

- 4 bits [....]

I011/430 - Phase of Flight

Definition: Current phase of the flight.

Structure:

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

- 0: Unknown
- 1: On stand
- 2: Taxiing for departure
- 3: Taxiing for arrival
- 4: Runway for departure
- 5: Runway for arrival
- 6: Hold for departure
- 7: Hold for arrival
- 8: Push back
- 9: On finals

I011/500 - Estimated Accuracies

Definition: Overview of all important accuracies (standard deviations).

Structure:

Compound item (FX)

I011/500/APC - Estimated Accuracy Of Track Position (Cartesian)

I011/500/APC/X - *Estimated Accuracy of the Calculated Position of X Component*

- 8 bits [.]
- unsigned quantity
- unit: "m"
- $LSB = 1/2^2 \text{ m} \approx 0.25 \text{ m}$

I011/500/APC/Y - *Estimated Accuracy of the Calculated Position of Y Component*

- 8 bits [.]
- unsigned quantity
- unit: "m"
- $LSB = 1/2^2 \text{ m} \approx 0.25 \text{ m}$

I011/500/APW - Estimated Accuracy Of Track Position (WGS84)

I011/500/APW/LAT - *APW Latitude Component Accuracy*

- 16 bits [.]
- signed quantity
- unit: "°"
- $LSB = 180/2^{31} \text{ °} \approx 8.38e - 8 \text{ °}$

I011/500/APW/LON - *APW Longitude Component Accuracy*

- 16 bits [.]
- signed quantity
- unit: "°"
- $LSB = 180/2^{31} \text{ °} \approx 8.38e - 8 \text{ °}$

I011/500/ATH - Estimated Accuracy Of Track Height

- 16 bits [.]
- signed quantity
- unit: "m"
- $LSB = 1/2 \text{ m} \approx 0.50 \text{ m}$

I011/500/AVC - Estimated Accuracy Of Track Velocity (Cartesian)

I011/500/AVC/X - *Estimated Accuracy of the Calculated Velocity of X Component*

- 8 bits [.]

- unsigned quantity
- unit: "m/s"
- LSB = 1/10 m/s \approx 0.10 m/s

I011/500/AVC/Y - *Estimated Accuracy of the Calculated Velocity of Y Component*

- 8 bits [.]
- unsigned quantity
- unit: "m/s"
- LSB = 1/10 m/s \approx 0.10 m/s

I011/500/ARC - *Estimated Accuracy Of Rate Of Climb / Descent*

- 16 bits [.]
- signed quantity
- unit: "m/s"
- LSB = 1/10 m/s \approx 0.10 m/s

I011/500/AAC - *Estimated Accuracy Of Acceleration (Cartesian)*

I011/500/AAC/X - *Estimated Accuracy Of Acceleration of X Component*

- 8 bits [.]
- unsigned quantity
- unit: "m/s²"
- LSB = 1/100 m/s² \approx 1.00e - 2 m/s²

I011/500/AAC/Y - *Estimated Accuracy Of Acceleration of Y Component*

- 8 bits [.]
- unsigned quantity
- unit: "m/s²"
- LSB = 1/100 m/s² \approx 1.00e - 2 m/s²

I011/600 - Alert Messages

Definition: Alert involving the targets indicated in I011/605.

Structure:

I011/600/ACK - *Alert Acknowledged*

- 1 bit [.]
- values:
 - 0: Alert acknowledged
 - 1: Alert not acknowledged

I011/600/SVR - *Alert Severity*

- 2 bits [. .]
- values:
 - 0: End fo alert
 - 1: Pre-alarm
 - 2: Severe alert

I011/600/(spare)

- 5 bits [.]

I011/600/AT - *Alert Type*

- 8 bits [.]
- raw value

I011/600/AN - *Alert Number*

- 8 bits [.]
- raw value

I011/605 - Tracks in Alert

Definition: List of track numbers of the targets concerned by the alert described in I011/600.

Structure:

Repetitive item, repetition factor 8 bits.

I011/605/(spare)

- 4 bits [. . . .]

I011/605/FTN - Fusion Track Number

- 12 bits [.]
- raw value

I011/610 - Holdbar Status

Definition: Status of up to sixteen banks of twelve indicators.

Structure:

Repetitive item, repetition factor 8 bits.

I011/610/BKN - Bank Number

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

I011/610/I1 - Indicator 1

- 1 bit [.]
- values:
 - 0: Indicator on
 - 1: Indicator off

I011/610/I2 - Indicator 2

- 1 bit [.]
- values:
 - 0: Indicator on
 - 1: Indicator off

I011/610/I3 - Indicator 3

- 1 bit [.]
- values:
 - 0: Indicator on
 - 1: Indicator off

I011/610/I4 - Indicator 4

- 1 bit [.]
- values:
 - 0: Indicator on
 - 1: Indicator off

I011/610/I5 - Indicator 5

- 1 bit [.]

- values:
 - 0: Indicator on
 - 1: Indicator off

I011/610/I6 - *Indicator 6*

- 1 bit [.]
- values:
 - 0: Indicator on
 - 1: Indicator off

I011/610/I7 - *Indicator 7*

- 1 bit [.]
- values:
 - 0: Indicator on
 - 1: Indicator off

I011/610/I8 - *Indicator 8*

- 1 bit [.]
- values:
 - 0: Indicator on
 - 1: Indicator off

I011/610/I9 - *Indicator 9*

- 1 bit [.]
- values:
 - 0: Indicator on
 - 1: Indicator off

I011/610/I10 - *Indicator 10*

- 1 bit [.]
- values:
 - 0: Indicator on
 - 1: Indicator off

I011/610/I11 - *Indicator 11*

- 1 bit [.]
- values:
 - 0: Indicator on
 - 1: Indicator off

I011/610/I12 - *Indicator 12*

- 1 bit [.]
- values:
 - 0: Indicator on
 - 1: Indicator off

I011/SP - Special Purpose Field

Definition: Special Purpose Field

Structure:

Explicit item (SP)

I011/RE - Reserved Expansion Field

Definition: Expansion

Structure:

Explicit item (RE)

User Application Profile for Category 011

- (1) I011/010 - Data Source Identifier
- (2) I011/000 - Message Type
- (3) I011/015 - Service Identification
- (4) I011/140 - Time of Track Information
- (5) I011/041 - Position in WGS-84 Coordinates
- (6) I011/042 - Calculated Position in Cartesian Co-ordinates
- (7) I011/202 - Calculated Track Velocity in Cartesian Coordinates
- (FX) - Field extension indicator
- (8) I011/210 - Calculated Acceleration
- (9) I011/060 - Mode-3/A Code in Octal Representation
- (10) I011/245 - Target Identification
- (11) I011/380 - Mode-S / ADS-B Related Data
- (12) I011/161 - Track Number
- (13) I011/170 - Track Status
- (14) I011/290 - System Track Update Ages
- (FX) - Field extension indicator
- (15) I011/430 - Phase of Flight
- (16) I011/090 - Measured Flight Level
- (17) I011/093 - Calculated Track Barometric Altitude
- (18) I011/092 - Calculated Track Geometric Altitude
- (19) I011/215 - Calculated Rate Of Climb/Descent
- (20) I011/270 - Target Size and Orientation
- (21) I011/390 - Flight Plan Related Data
- (FX) - Field extension indicator
- (22) I011/300 - Vehicle Fleet Identification
- (23) I011/310 - Pre-programmed Message
- (24) I011/500 - Estimated Accuracies
- (25) I011/600 - Alert Messages
- (26) I011/605 - Tracks in Alert
- (27) I011/610 - Holdbar Status

- (28) I011/SP - Special Purpose Field
- (FX) - Field extension indicator
- (29) I011/RE - Reserved Expansion Field
- (30) (spare)
- (31) (spare)
- (32) (spare)
- (33) (spare)
- (34) (spare)
- (35) (spare)
- (FX) - Field extension indicator