**BUFR Table D** *– List of common sequences*

F X Category of sequences

3 00 BUFR table entries sequences

3 01 Location and identification sequences

3 02 Meteorological sequences common to surface data

3 03 Meteorological sequences common to vertical soundings data

3 04 Meteorological sequences common to satellite observations

3 05 Meteorological or hydrological sequences common to hydrological observations

3 06 Meteorological or oceanographic sequences common to oceanographic observations

3 07 Surface report sequences (land)

3 08 Surface report sequences (sea)

3 09 Vertical sounding sequences (conventional data)

3 10 Vertical sounding sequences (satellite data)

3 11 Single level report sequences (conventional data)

3 12 Single level report sequences (satellite data)

3 13 Sequences common to image data

3 14 Reserved

3 15 Oceanographic report sequences

3 16 Synoptic feature sequences

3 18 Radiological report sequences

3 21 Radar report sequences

3 22 Chemical and aerosol sequences

3 40 Additional satellite report sequences

Notes:

(1) From a conceptual point of view, Table D is *not* necessary:

(a) The Data description section can fully and completely describe the data using only element descriptors, operator descriptors and the rules of description;

(b) Such a means of defining the data would involve considerable overheads in terms of the length of the Data description section. Table D is a device to reduce these overheads;

(c) Each entry within Table D contains a list of descriptors. Each sequence descriptor that references to Table D may be “expanded” by replacing it with the list corresponding to that entry. The process of “expansion” is well defined, provided it results in a set of element descriptors and operator descriptors;

(d) Descriptors listed in entries to Table D may themselves refer to Table D, provided no circularity results on repeated expansion;

(e) The initial Table D has been limited to lists of descriptors likely to be used frequently. Every attempt has been made not to produce initial tables that are too comprehensive. *Minor differences of reporting* *practice can be accommodated by not endeavouring to reduce each observation type to a single descriptor.* Indeed, much more flexibility is retained if the Data description section is envisaged as containing three or four descriptors.

(2) It should be noted that, initially, effort has been concentrated on the requirements for observational data. Extensions to forecast data, time series data, products, etc., follow logically, and can be added at an appropriate future date.

(3) Category 01 contains common sequences of non-meteorological descriptors; categories 02 to 06 contain common sequences of meteorological descriptors; categories 07 to 21 contain sequences which define reports, or major subsets of reports.

(4) Underwater soundings are included, with some minor omissions, to illustrate the facility to describe data of slightly different contents.

(5) Satellite data have been split to maximize the benefits of data compression. Compound combinations may easily be defined using the descriptors available.

(6) Satellite observation data benefit enormously from being split into fragments (1, 2, 3 . . . 7), then applying data compression to many locations within each fragment. Again, BUFR flexibility enables compound forms to be defined if desired.

(7) Categories 48 to 63 are reserved for local use; all other categories are reserved for future development.

(8) Entries 192 to 255 within all categories are reserved for local use.

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**Category 00 – BUFR table entries sequences**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 00 002 | 0 00 002 | Table A: data category description, line 1 |  |
|  | 0 00 003 | Table A: data category description, line 2 |  |
|  |  |  |  |
|  |  | (F, X, Y of descriptor to be added or defined) |  |
| 3 00 003 | 0 00 010 | F descriptor to be added or defined |  |
|  | 0 00 011 | X descriptor to be added or defined |  |
|  | 0 00 012 | Y descriptor to be added or defined |  |
|  |  |  |  |
| 3 00 004 | 3 00 003 | F, X, Y of descriptor to be added or defined |  |
|  | 0 00 013 | Element name, line 1 |  |
|  | 0 00 014 | Element name, line 2 |  |
|  | 0 00 015 | Units name |  |
|  | 0 00 016 | Units scale sign |  |
|  | 0 00 017 | Units scale |  |
|  | 0 00 018 | Units reference sign |  |
|  | 0 00 019 | Units reference value |  |
|  | 0 00 020 | Element data width |  |
|  |  |  |  |
| 3 00 010 | 3 00 003 | F, X, Y of descriptor to be added or defined |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 00 030 | Descriptor defining sequence |  |
|  |  |  |  |
|  |  | (Code table definition) |  |
| 3 00 015 | 0 00 030 | Descriptor defining sequence |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 0 00 024 | Code figure |  |
|  | 0 00 025 | Code figure meaning |  |
|  |  |  |  |
|  |  | (Flag table definition) |  |
| 3 00 016 | 0 00 030 | Descriptor defining sequence |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 00 026 | Bit number |  |
|  | 0 00 027 | Bit number meaning |  |

Notes:

(1) These entries include the facility to update the Table A code figure and data description.

(2) It is better to use different Class 00 descriptors for the defining and defined elements, in the same way as different descriptors correspond to pressure considered as a coordinate and pressure measured at a given point; otherwise special rules would be needed to interpret such message.

Entries 0 00 010 to 0 00 012 define F, X and Y for Tables B and D; entry 0 00 030 is a descriptor used as data and provides the F, X and Y values defining a sequence for Table D entries.

(3) It could be argued that, as only additions are possible, only complete lines should be allowed; but it is conceivable that local areas will require changes as well as additions, so it is better and in any case clearer to provide descriptions for all the fields.

**Category 01 – Location and identification sequences**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (WMO block and station numbers) |  |
| 3 01 001 | 0 01 001 | WMO block number |  |
|  | 0 01 002 | WMO station number |  |
|  |  |  |  |
| 3 01 002 | 0 01 003 | WMO Region number/geographical area |  |
|  | 0 01 004 | WMO Region sub-area |  |
|  | 0 01 005 | Buoy/platform identifier |  |
|  |  |  |  |
|  |  | (Ship’s call sign and motion) |  |
| 3 01 003 | 0 01 011 | Ship or mobile land station identifier | Ship’s call sign |
|  | 0 01 012 | Direction of motion of moving observing platform |  |
|  | 0 01 013 | Speed of motion of moving observing platform |  |
|  |  |  |  |
|  |  | (Surface station identification) |  |
| 3 01 004 | 0 01 001 | WMO block number |  |
|  | 0 01 002 | WMO station number |  |
|  | 0 01 015 | Station or site name |  |
|  | 0 02 001 | Type of station |  |
|  |  |  |  |
|  |  | (Originating centre/sub-centre) |  |
| 3 01 005 | 0 01 035 | Originating centre |  |
|  | 0 01 034 | Identification of originating/generating sub-centre |  |
|  |  |  |  |
|  |  | (Year, month, day) |  |
| 3 01 011 | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  |  |  |  |
|  |  | (Hour, minute) |  |
| 3 01 012 | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  |  |  |  |
|  |  | (Hour, minute, second) |  |
| 3 01 013 | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 04 006 | Second |  |
|  |  |  |  |
|  |  | (Time period) |  |
| 3 01 014 | 1 02 002 | Replicate 2 descriptors 2 times |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  |  |  |  |
|  |  | (Encrypted ship's call sign and encryption method) | See Notes 2–4 |
| 3 01 018 | 0 01 114 | Encrypted ship or mobile land station identifier (base64 encoding) |  |
|  | 0 25 185 | Encryption method |  |
|  | 0 25 186 | Encryption key version |  |
|  |  |  |  |
|  |  | (Latitude/longitude (high accuracy)) |  |
| 3 01 021 | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |

*(continued)*

*(Category 01 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Latitude/longitude (high accuracy), height of station) |  |
| 3 01 022 | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 07 001 | Height of station |  |
|  |  |  |  |
|  |  | (Latitude/longitude (coarse accuracy)) |  |
| 3 01 023 | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  |  |  |  |
|  |  | (Latitude/longitude (coarse accuracy), height of station) |  |
| 3 01 024 | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 07 001 | Height of station |  |
|  |  |  |  |
|  |  | (Latitude/longitude (coarse accuracy), day/time) |  |
| 3 01 025 | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 04 003 | Day |  |
|  | 3 01 012 | Hour, minute |  |
|  |  |  |  |
|  |  | (Latitude/longitude (high accuracy), time period (day, hour, minute)) |  |
| 3 01 026 | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 04 003 | Day | Time period in days |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour | Time period in hours |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute | Time period in minutes |
|  | 0 04 005 | Minute |  |
|  |  |  |  |
|  |  | (Description of a feature in 3-D or 2-D) |  |
| 3 01 027 | 0 08 007 | Dimensional significance | = 0 Point, = 1 Line,  = 2 Area, = 3 Volume |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor (see Note 5) |  |
|  | 3 01 028 | Horizontal section of a feature described as a polygon, circle, line or point |  |
|  | 0 08 007 | Dimensional significance | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Horizontal section of a feature described as a polygon, circle, line or point) |  |
| 3 01 028 | 0 08 040 | Flight level significance |  |
|  | 0 33 042 | Type of limit represented by following value |  |
|  | 0 07 010 | Flight level |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor (see Note 6) |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 19 007 | Effective radius of feature (see Note 7) |  |
|  | 0 08 040 | Flight level significance | Set to missing (cancel) |

*(continued)*

*(Category 01 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Identification) |  |
| 3 01 029 | 0 01 018 | Short station or site name |  |
|  | 0 02 001 | Type of station |  |
|  | 3 01 011 | Year, month, day |  |
|  |  |  |  |
|  |  | (Identification – with physical location) |  |
| 3 01 030 | 0 01 018 | Short station or site name |  |
|  | 0 02 001 | Type of station |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 024 | Latitude/longitude (coarse accuracy), height of station |  |
|  |  |  |  |
|  |  | (Identification and type of station, date/time, location (high accuracy), height of station) |  |
| 3 01 031 | 3 01 001 | WMO block and station numbers |  |
|  | 0 02 001 | Type of station |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 022 | Latitude/longitude (high accuracy), height of station |  |
|  |  |  |  |
|  |  | (Identification and type of station, date/time, location (coarse accuracy), height of station) |  |
| 3 01 032 | 3 01 001 | WMO block and station numbers |  |
|  | 0 02 001 | Type of station |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 024 | Latitude/longitude (coarse accuracy), height of station |  |
|  |  |  |  |
|  |  | (Buoy/platform – fixed) |  |
| 3 01 033 | 0 01 005 | Buoy/platform identifier |  |
|  | 0 02 001 | Type of station |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  |  |  |  |
|  |  | (Buoy/platform – fixed) |  |
| 3 01 034 | 0 01 005 | Buoy/platform identifier |  |
|  | 0 02 001 | Type of station |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  |  |  |  |
|  |  | (Buoy/platform – moving) (see Note 8) |  |
| 3 01 035 | 0 01 005 | Buoy/platform identifier |  |
|  | 0 01 012 | Direction of motion of moving observing platform |  |
|  | 0 01 013 | Speed of motion of moving observing platform |  |
|  | 0 02 001 | Type of station |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |

*(continued)*

*(Category 01 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Ship) |  |
| 3 01 036 | 3 01 003 | Ship’s call sign and motion |  |
|  | 0 02 001 | Type of station |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  |  |  |  |
|  |  | (Land station for vertical soundings) |  |
| 3 01 037 | 3 01 001 | WMO block and station numbers |  |
|  | 0 02 011 | Radiosonde type |  |
|  | 0 02 012 | Radiosonde computational method |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 022 | Latitude/longitude (high accuracy), height of station |  |
|  |  |  |  |
|  |  | (Land station for vertical soundings) |  |
| 3 01 038 | 3 01 001 | WMO block and station numbers |  |
|  | 0 02 011 | Radiosonde type |  |
|  | 0 02 012 | Radiosonde computational method |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 024 | Latitude/longitude (coarse accuracy), height of station |  |
|  |  |  |  |
|  |  | (Ship for vertical soundings) |  |
| 3 01 039 | 3 01 003 | Ship’s call sign and motion |  |
|  | 0 02 011 | Radiosonde type |  |
|  | 0 02 012 | Radiosonde computational method |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  |  |  |  |
|  |  | (Ship for vertical soundings) |  |
| 3 01 040 | 3 01 003 | Ship’s call sign and motion |  |
|  | 0 02 011 | Radiosonde type |  |
|  | 0 02 012 | Radiosonde computational method |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 024 | Latitude/longitude (coarse accuracy), height of station |  |
|  |  |  |  |
|  |  | (Satellite identifier, instrument, data-processing technique, date/time) |  |
| 3 01 041 | 0 01 007 | Satellite identifier |  |
|  | 0 02 021 | Satellite instrument data used in processing |  |
|  | 0 02 022 | Satellite data-processing technique used |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |

*(continued)*

*(Category 01 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Satellite identifier, instrument, data-processing technique, date/time, location) |  |
| 3 01 042 | 3 01 041 | Satellite identifier, instrument, data-processing technique, date/time |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  |  |  |  |
|  |  | (Satellite identifier, wind computation method, date/time, location) |  |
| 3 01 043 | 0 01 007 | Satellite identifier |  |
|  | 0 02 023 | Satellite-derived wind computation method |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  |  |  |  |
|  |  | (Satellite identifier, humidity computation method, date/time, location) |  |
| 3 01 044 | 0 01 007 | Satellite identifier |  |
|  | 0 02 024 | Integrated mean humidity computational method |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  |  |  |  |
|  |  | (Satellite location and velocity) |  |
| 3 01 045 | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 2 01 138 | Change data width | 16 bits long |
|  | 2 02 131 | Change scale | Scale: 3 |
|  | 0 04 006 | Second |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 02 000 | Change scale | Cancel |
|  | 3 04 030 | Location of platform | Relative to the Earth’s centre |
|  | 3 04 031 | Speed of platform | Relative to the Earth’s centre |
|  |  |  |  |
|  |  | (Satellite identifier, direction of motion, sensor, model function, software, resolution) |  |
| 3 01 046 | 0 01 007 | Satellite identifier |  |
|  | 0 01 012 | Direction of motion of moving observing platform |  |
|  | 0 02 048 | Satellite sensor indicator |  |
|  | 0 21 119 | Wind scatterometer geophysical model function |  |
|  | 0 25 060 | Software identification |  |
|  | 2 02 124 | Change scale |  |
|  | 0 02 026 | Cross-track resolution |  |
|  | 0 02 027 | Along-track resolution |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 0 05 040 | Orbit number |  |

*(continued)*

*(Category 01 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (ERS product header) |  |
| 3 01 047 | 0 01 007 | Satellite identifier |  |
|  | 0 25 060 | Software identification |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 01 034 | Identification of originating/generating sub-centre |  |
|  | 0 01 012 | Direction of motion of moving observing platform |  |
|  | 3 01 045 | Satellite location and velocity |  |
|  | 0 02 021 | Satellite instrument data used in processing |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 2 01 138 | Change data width | 16 bits long |
|  | 2 02 131 | Change scale | Scale: 3 |
|  | 0 04 006 | Second |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 02 000 | Change scale | Cancel |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  |  |  |  |
|  |  | (Radar parameters) |  |
| 3 01 048 | 0 02 104 | Antenna polarization |  |
|  | 0 02 121 | Mean frequency |  |
|  | 0 02 113 | Number of azimuth looks |  |
|  | 0 02 026 | Cross-track resolution |  |
|  | 0 02 027 | Along-track resolution |  |
|  | 0 02 111 | Radar incidence angle |  |
|  | 0 02 140 | Satellite radar beam azimuth angle |  |
|  | 2 02 127 | Change scale | Scale: –1 |
|  | 0 01 013 | Speed of motion of moving observing platform | Radar platform velocity |
|  | 2 02 126 | Change scale | Scale: –2 |
|  | 0 07 001 | Height of station | Radar platform altitude |
|  | 2 02 000 | Change scale | Cancel |
|  | 0 25 010 | Clutter treatment |  |
|  | 0 21 064 | Clutter noise estimate |  |
|  |  |  |  |
|  |  | (Radar beam data) |  |
| 3 01 049 | 0 02 111 | Radar incidence angle |  |
|  | 0 02 112 | Radar look angle |  |
|  | 0 21 062 | Backscatter |  |
|  | 0 21 063 | Radiometric resolution (noise value) |  |
|  | 0 21 065 | Missing packet counter |  |
|  |  |  |  |
|  |  | (Flight number, navigational system, date/time, location, phase of flight) |  |
| 3 01 051 | 0 01 006 | Aircraft flight number |  |
|  | 0 02 061 | Aircraft navigational system |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 08 004 | Phase of aircraft flight |  |

*(continued)*

*(Category 01 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Identification and type of station, date/time, location (high accuracy), movement) |  |
| 3 01 055 | 0 01 005 | Buoy/platform identifier |  |
|  | 0 02 001 | Type of station |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 01 012 | Direction of motion of moving observing platform |  |
|  | 0 01 014 | Platform drift speed (high precision) |  |
|  |  |  |  |
|  |  | (Sequence for platform identification, type, time and location of the observation report) |  |
| 3 01 056 | 0 01 087 | WMO marine observing platform extended identifier | WMO number (extended 7-digit identifier) |
|  | 0 01 011 | Ship or mobile land station identifier | Call sign (where allocated) |
|  | 0 01 015 | Station or site name | Platform name |
|  | 0 02 008 | Type of offshore platform |  |
|  | 0 02 001 | Type of station |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level | Height of station platform above mean sea level |
|  | 0 07 031 | Height of barometer above mean sea level |  |
|  |  |  |  |
|  |  | (Universal lightning event) |  |
|  |  | *Date/time of lightning event* |  |
| 3 01 058 | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 2 01 152 | Change data width |  |
|  | 2 02 135 | Change scale |  |
|  | 0 04 006 | Second |  |
|  | 2 02 000 | Change scale |  |
|  | 2 01 000 | Change data width |  |
|  |  | *Horizontal and vertical coordinates of lightning  event* |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 20 111 | x-axis error ellipse major component |  |
|  | 0 20 112 | y-axis error ellipse minor component |  |
|  | 0 20 113 | z-axis error ellipse component |  |
|  | 0 20 114 | Angle of x-axis in error ellipse |  |
|  | 0 20 115 | Angle of z-axis in error ellipse |  |
|  | 0 20 116 | Emission height of cloud stroke |  |
|  |  | *Emission information* |  |
|  | 0 20 117 | Amplitude of lightning strike |  |
|  | 0 20 118 | Lightning detection error |  |
|  | 0 20 119 | Lightning discharge polarity |  |

*(continued)*

*(Category 01 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 01 058 | 0 25 035 | Decision method for polarity | V or A |
| *(continued)* | 0 20 121 | Threshold value for polarity decision |  |
|  | 0 20 122 | Threshold value for polarity decision |  |
|  | 0 20 123 | Minimum threshold for detection |  |
|  | 0 20 124 | Lightning stroke or flash |  |
|  | 0 25 175 | Modified residual |  |
|  | 0 20 023 | Other weather phenomena | Cloud to ground or cloud to cloud identification |
|  |  | *Sensor processing* |  |
|  | 0 25 063 | Central processor or system identifier |  |
|  | 2 02 136 | Change scale |  |
|  | 2 01 136 | Change data width |  |
|  | 0 02 121 | Mean frequency | Define centre frequency, if used |
|  | 2 01 000 | Change data width |  |
|  | 2 02 000 | Change scale |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 02 184 | Type of lightning detection sensor |  |
|  | 0 02 189 | Capability to discriminate lightning strikes |  |
|  | 0 25 036 | Atmospherics location method |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor | Number of sensors contributing |
|  | 3 01 059 | Identification of sensor site and instrumentation |  |
|  |  |  |  |
|  |  | (Identification of sensor site and instrumentation) |  |
| 3 01 059 | 3 01 021 | Latitude/longitude (high accuracy) | Sensor |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Sensor for lightning |
|  |  |  |  |
|  |  | (Radar location(s)) |  |
| 3 01 062 | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 01 001 | WMO block and station numbers |  |
|  |  |  |  |
|  |  | (ACARS identification) |  |
| 3 01 065 | 0 01 006 | Aircraft flight number (see Note 10) |  |
|  | 0 01 008 | Aircraft registration number or other identification (see Note 10) |  |
|  | 0 02 001 | Type of station |  |
|  | 0 02 002 | Type of instrumentation for wind measurement |  |
|  | 0 02 005 | Precision of temperature observation |  |
|  | 0 02 062 | Type of aircraft data relay system |  |
|  | 0 02 070 | Original specification of latitude/longitude |  |
|  | 0 02 065 | ACARS ground-receiving station |  |

*(continued)*

*(Category 01 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (ACARS location) |  |
| 3 01 066 | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 07 004 | Pressure |  |
|  | 0 02 064 | Aircraft roll angle quality |  |
|  | 0 08 004 | Phase of aircraft flight |  |
|  |  |  |  |
|  |  | (Ozone instrumentation – Brewer spectrophotometer) |  |
| 3 01 070 | 0 02 143 | Ozone instrument type |  |
|  | 0 02 142 | Ozone instrument serial number/identification |  |
|  | 0 02 144 | Light source type for Brewer spectrophotometer |  |
|  |  |  |  |
|  |  | (Satellite identifier/Generating resolution) |  |
| 3 01 071 | 0 01 007 | Satellite identifier |  |
|  | 0 01 031 | Identification of originating/generating centre |  |
|  | 0 02 020 | Satellite classification |  |
|  | 0 02 028 | Segment size at nadir in x-direction |  |
|  | 0 02 029 | Segment size at nadir in y-direction |  |
|  |  |  |  |
|  |  | (Satellite identification) |  |
| 3 01 072 | 3 01 071 | Satellite identifier/Generating resolution |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  |  |  |  |
|  |  | (Ozone instrumentation – Dobson spectrophotometer) |  |
| 3 01 074 | 0 02 143 | Ozone instrument type |  |
|  | 0 02 142 | Ozone instrument serial number/identification |  |
|  | 0 02 145 | Wavelength setting for Dobson instruments |  |
|  | 0 02 146 | Source conditions for Dobson instruments |  |
|  |  |  |  |
|  |  | (Sounding identification) |  |
| 3 01 075 | 3 01 001 | WMO block and station numbers |  |
|  | 0 01 015 | Station or site name |  |
|  | 3 01 024 | Latitude/longitude (coarse accuracy), height of station |  |
|  | 0 08 021 | Time significance | = 18 Launch time |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  |  |  |  |
|  |  | (Ozone sounding instrumentation) |  |
| 3 01 076 | 0 02 011 | Radiosonde type |  |
|  | 0 02 143 | Ozone instrument type |  |
|  | 0 02 142 | Ozone instrument serial number/identification |  |
|  |  |  |  |
|  |  | (National station identification) |  |
| 3 01 089 | 0 01 101 | State identifier |  |
|  | 0 01 102 | National station number |  |

*(continued)*

*(Category 01 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Surface station identification; time, horizontal and vertical coordinates) |  |
| 3 01 090 | 3 01 004 | Surface station identification |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 0 07 031 | Height of barometer above mean sea level |  |
|  |  |  |  |
|  |  | (Surface station instrumentation) |  |
| 3 01 091 | 0 02 180 | Main present weather detecting system |  |
|  | 0 02 181 | Supplementary present weather sensor |  |
|  | 0 02 182 | Visibility measurement system |  |
|  | 0 02 183 | Cloud detection system |  |
|  | 0 02 184 | Type of lightning detection sensor |  |
|  | 0 02 179 | Type of sky condition algorithm |  |
|  | 0 02 186 | Capability to detect precipitation phenomena |  |
|  | 0 02 187 | Capability to detect other weather phenomena |  |
|  | 0 02 188 | Capability to detect obscuration |  |
|  | 0 02 189 | Capability to discriminate lightning strikes |  |
|  |  |  |  |
|  |  | (Mobile surface station identification, date/time, horizontal and vertical coordinates) |  |
| 3 01 092 | 0 01 011 | Ship or mobile land station identifier |  |
|  | 0 01 003 | WMO Region number/geographical area |  |
|  | 0 02 001 | Type of station |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 0 07 031 | Height of barometer above mean sea level |  |
|  | 0 33 024 | Station elevation quality mark (for mobile stations) |  |
|  |  |  |  |
|  |  | (Ship identification, movement, date/time, horizontal and vertical coordinates) |  |
| 3 01 093 | 3 01 036 | Ship | Ship identification |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 0 07 031 | Height of barometer above mean sea level |  |
|  |  |  |  |
|  |  | (Identification of launch site and instrumentation for wind measurements) |  |
| 3 01 110 | 3 01 001 | WMO block and station numbers |  |
|  | 0 01 011 | Ship or mobile land station identifier |  |
|  | 0 02 011 | Radiosonde type |  |
|  | 0 02 014 | Tracking technique/status of system used |  |
|  | 0 02 003 | Type of measuring equipment used |  |

*(continued)*

*(Category 01 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Identification of launch site and instrumentation for P, T, U and wind measurements) |  |
| 3 01 111 | 3 01 001 | WMO block and station numbers |  |
|  | 0 01 011 | Ship or mobile land station identifier |  |
|  | 0 02 011 | Radiosonde type |  |
|  | 0 02 013 | Solar and infrared radiation correction |  |
|  | 0 02 014 | Tracking technique/status of system used |  |
|  | 0 02 003 | Type of measuring equipment used |  |
|  |  |  |  |
|  |  | (Identification of launch point and instrumentation of dropsonde) |  |
| 3 01 112 | 0 01 006 | Aircraft flight number |  |
|  | 0 02 011 | Radiosonde type |  |
|  | 0 02 013 | Solar and infrared radiation correction |  |
|  | 0 02 014 | Tracking technique/status of system used |  |
|  | 0 02 003 | Type of measuring equipment used |  |
|  |  |  |  |
|  |  | (Date/time of launch) (see Note 11) |  |
| 3 01 113 | 0 08 021 | Time significance | = 18 Launch time |
|  | 3 01 011 | Year, month, day | Launch time |
|  | 3 01 013 | Hour, minute, second | Launch time |
|  |  |  |  |
|  |  | (Horizontal and vertical coordinates of launch site) |  |
| 3 01 114 | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 0 07 031 | Height of barometer above mean sea level |  |
|  | 0 07 007 | Height | Release of sonde above mean sea level |
|  | 0 33 024 | Station elevation quality mark (for mobile stations) |  |
|  |  |  |  |
|  |  | (Radiosonde abbreviated header and launch information) |  |
| 3 01 120 | 3 01 001 | WMO block and station numbers |  |
|  | 0 01 094 | WBAN number |  |
|  | 0 02 011 | Radiosonde type |  |
|  | 3 01 121 | Radiosonde launch point location |  |
|  |  |  |  |
|  |  | (Radiosonde launch point location) |  |
| 3 01 121 | 0 08 041 | Data significance | = 3 Balloon launch point |
|  | 3 01 122 | Date/time (to hundredths of second) |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 031 | Height of barometer above mean sea level |  |
|  | 0 07 007 | Height | Release of radiosonde above mean sea level |

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*(Category 01 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Date/time (to hundredths of second)) (see Note 11) |  |
| 3 01 122 | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 2 01 135 | Change data width |  |
|  | 2 02 130 | Change scale |  |
|  | 0 04 006 | Second |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  |  |  |  |
|  |  | (Radiosonde full header information) |  |
| 3 01 123 | 1 02 002 | Replicate 2 descriptors 2 times |  |
|  | 0 08 041 | Data significance | = 0 Parent site,  = 1 Observation site |
|  | 0 01 062 | Short ICAO location indicator |  |
|  | 3 01 001 | WMO block and station numbers |  |
|  | 0 01 094 | WBAN number |  |
|  | 0 02 011 | Radiosonde type |  |
|  | 0 01 018 | Short station or site name |  |
|  | 0 01 095 | Observer identification |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 25 068 | Number of archive recomputes |  |
|  | 0 01 082 | Radiosonde ascension number |  |
|  | 0 01 083 | Radiosonde release number |  |
|  | 0 01 081 | Radiosonde serial number |  |
|  | 0 02 067 | Radiosonde operating frequency |  |
|  | 0 02 066 | Radiosonde ground receiving system |  |
|  | 0 02 014 | Tracking technique/status of system used |  |
|  | 0 25 067 | Radiosonde release point pressure correction |  |
|  | 0 25 065 | Orientation correction (azimuth) |  |
|  | 0 25 066 | Orientation correction (elevation) |  |
|  | 0 02 095 | Type of pressure sensor |  |
|  | 0 02 096 | Type of temperature sensor |  |
|  | 0 02 097 | Type of humidity sensor |  |
|  | 0 02 016 | Radiosonde configuration |  |
|  | 0 02 083 | Type of balloon shelter |  |
|  | 0 02 080 | Balloon manufacturer |  |
|  | 0 02 081 | Type of balloon |  |
|  | 0 01 093 | Balloon lot number |  |
|  | 0 02 084 | Type of gas used in balloon |  |
|  | 0 02 085 | Amount of gas used in balloon |  |
|  | 0 02 086 | Balloon flight train length |  |
|  | 0 02 082 | Weight of balloon |  |
|  | 0 08 041 | Data significance | = 2 Balloon manufacture date |
|  | 3 01 011 | Year, month, day |  |

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*(Category 01 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (ASCAT header information) |  |
| 3 01 125 | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 01 034 | Identification of originating/generating sub-centre |  |
|  | 0 25 060 | Software identification |  |
|  | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 01 012 | Direction of motion of moving observing platform |  |
|  |  |  |  |
|  |  | (Sequence for representation of moored buoy identification) |  |
| 3 01 126 | 0 01 087 | WMO marine observing platform extended identifier |  |
|  | 0 01 015 | Station or site name |  |
|  | 0 02 149 | Type of data buoy |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  |  |  |  |
|  |  | (Additional information on radiosonde ascent) |  |
| 3 01 128 | 0 01 081 | Radiosonde serial number |  |
|  | 0 01 082 | Radiosonde ascension number |  |
|  | 0 01 083 | Radiosonde release number |  |
|  | 0 01 095 | Observer identification |  |
|  | 0 02 015 | Radiosonde completeness |  |
|  | 0 02 016 | Radiosonde configuration |  |
|  | 0 02 017 | Correction algorithms for humidity measurements |  |
|  | 0 02 066 | Radiosonde ground receiving system |  |
|  | 0 02 067 | Radiosonde operating frequency |  |
|  | 0 02 080 | Balloon manufacturer |  |
|  | 0 02 081 | Type of balloon |  |
|  | 0 02 082 | Weight of balloon |  |
|  | 0 02 083 | Type of balloon shelter |  |
|  | 0 02 084 | Type of gas used in balloon |  |
|  | 0 02 085 | Amount of gas used in balloon |  |
|  | 0 02 086 | Balloon flight train length |  |
|  | 0 02 095 | Type of pressure sensor |  |
|  | 0 02 096 | Type of temperature sensor |  |
|  | 0 02 097 | Type of humidity sensor |  |
|  | 0 02 103 | Radome |  |
|  | 0 02 191 | Geopotential height calculation |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 35 035 | Reason for termination | Reason for ascent termination |
|  |  |  |  |
|  |  | (Observing satellite and instruments) |  |
| 3 01 129 | 0 01 007 | Satellite identifier |  |
|  | 0 01 031 | Identification of originating/generating centre |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 02 020 | Satellite classification |  |

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*(Category 01 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (High precision timestamp) |  |
| 3 01 130 | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 2 02 131 | Change scale | Add 3 to scale |
|  | 2 01 138 | Change data width | Add 10 to width |
|  | 0 04 006 | Second |  |
|  | 2 01 000 | Change scale | Cancel |
|  | 2 02 000 | Change data width | Cancel |
|  |  |  |  |
|  |  | (Pixel geolocation) |  |
| 3 01 131 | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  |  |  |  |
|  |  | (WIGOS identifier) |  |
| 3 01 150 | 0 01 125 | WIGOS identifier series |  |
|  | 0 01 126 | WIGOS issuer of identifier |  |
|  | 0 01 127 | WIGOS issue number |  |
|  | 0 01 128 | WIGOS local identifier (character) |  |

Notes:

(1) Descriptor 3 01 002 should not be used.

(2) The ship's call sign or WMO identifier should be reported using descriptor 0 01 011.

(3) However, if required by shipping companies when voluntary observing ships (VOS) are recruited or if subsequently requested, for ship reports using template 3 08 014 the ship call sign or other identifier can be encrypted in BUFR reports using sequence 3 01 018 according to the following method:

– The normal call sign (i.e. descriptor 0 01 011) shall be encoded with missing value;

– The encryption method shall be indicated using the method indicated by 0 25 185;

– The version of the encryption key that is used shall be indicated by 0 25 186.

(4) The encryption keys will be managed by the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology Focal Point on Ship Masking.

(5) This replication factor shall have a value of “1” when a 2-D feature is being described, whereas 3-D features may be described via any one of the following methods:

(a) Via two or more horizontal sections in successive ascending flight levels. In this case, each section shall be described by an identical number of latitude/longitude points listed in identical order (i.e. where each point x of section n is to be joined via a straight line to point x of section n+1), in order to ensure that the overall shape of the 3-D feature is unambiguously described. In this case, all values reported for 0 33 042 shall be “missing”.

(b) Via a single horizontal section with an appropriate value reported for 0 33 042, as follows. In all such cases, the corresponding horizontal section description applies throughout the entire region.

(i) A value of “0” to indicate a region above (but not including) the reported flight level and with unspecified upper bound.

(ii) A value of “1” to indicate a region above (and including) the reported flight level and with unspecified upper bound.

(iii) A value of “2” to indicate a region below (but not including) the reported flight level and extending to the surface.

*(continued)*

*(Category 01 – continued)*

(iv) A value of “3” to indicate a region below (and including) the reported flight level and extending to the surface.

(c) Via two replications of the same horizontal section at the same reported flight level, in order to indicate a region extending both below and above (and including!) the reported flight level. In this case, the values reported for the two replications of 0 33 042 shall be as follows:

(i) Values of “3” and “1”, respectively, to indicate a region beginning from below a reported flight level, but continuing through that level upward to some unspecified point above (e.g. TOP ABV FL100).

(ii) Values of “1” and “3”, respectively, to indicate a region beginning from above a reported flight level, but continuing through that level downward to some unspecified point below (e.g. CIGS BLW FL010).

(6) This replication factor shall have a value of “1” when a circle or point is being described, and it shall have a value of “2” when a line is being described. A polygon, on the other hand, shall be described via a sequence of three or more contiguous points in accordance with the note to code table 0 08 007.

(7) The value reported for 0 19 007 shall be “missing” unless the horizontal section being described is a circle.

(8) Descriptor 3 01 055 should be used instead of 3 01 035 to encode moving buoy/platform information.

(9) Descriptors from 3 01 041 to 3 01 049 and 3 01 062, 3 01 071 and 3 01 072 should not be used in CREX for transmission.

(10) As supplied by originating sub-centre ARINC, this value is a pseudo-value rather than the actual value. The relationship between this pseudo-value and the true value is known only by ARINC.

(11) Time of launch shall be reported with the highest possible accuracy available. If the launch time is not available with second accuracy, the entry for seconds shall be set to zero.

**Category 02 – Meteorological sequences common to surface data**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Pressure and 3-hour pressure change) |  |
| 3 02 001 | 0 10 004 | Pressure | Station level |
|  | 0 10 051 | Pressure reduced to mean sea level |  |
|  | 0 10 061 | 3-hour pressure change |  |
|  | 0 10 063 | Characteristic of pressure tendency |  |
|  |  |  |  |
|  |  | (High altitude station) |  |
| 3 02 002 | 0 10 004 | Pressure | Station level |
|  | 0 07 004 | Pressure | Pressure level |
|  | 0 10 003 | Geopotential | Pressure level |
|  | 0 10 061 | 3-hour pressure change |  |
|  | 0 10 063 | Characteristic of pressure tendency |  |
|  |  |  |  |
|  |  | (Wind, temperature, humidity, visibility, weather) |  |
| 3 02 003 | 0 11 011 | Wind direction at 10 m |  |
|  | 0 11 012 | Wind speed at 10 m |  |
|  | 0 12 004 | Air temperature at 2 m |  |
|  | 0 12 006 | Dewpoint temperature at 2 m |  |
|  | 0 13 003 | Relative humidity |  |
|  | 0 20 001 | Horizontal visibility |  |
|  | 0 20 003 | Present weather |  |
|  | 0 20 004 | Past weather (1) |  |
|  | 0 20 005 | Past weather (2) |  |
|  |  |  |  |
|  |  | (General cloud information) |  |
| 3 02 004 | 0 20 010 | Cloud cover (total) |  |
|  | 0 08 002 | Vertical significance (surface observations) |  |
|  | 0 20 011 | Cloud amount |  |
|  | 0 20 013 | Height of base of cloud |  |
|  | 0 20 012 | Cloud type |  |
|  | 0 20 012 | Cloud type |  |
|  | 0 20 012 | Cloud type |  |
|  |  |  |  |
|  |  | (Cloud layer) |  |
| 3 02 005 | 0 08 002 | Vertical significance (surface observations) |  |
|  | 0 20 011 | Cloud amount |  |
|  | 0 20 012 | Cloud type |  |
|  | 0 20 013 | Height of base of cloud |  |
|  |  |  |  |
|  |  | (Pressure and 24-hour pressure change) |  |
| 3 02 006 | 0 10 004 | Pressure | Station level |
|  | 0 10 051 | Pressure reduced to mean sea level |  |
|  | 0 10 062 | 24-hour pressure change |  |
|  | 0 10 063 | Characteristic of pressure tendency |  |
|  |  |  |  |
|  |  | (Low altitude station) |  |
| 3 02 011 | 3 02 001 | Pressure and 3-hour pressure change |  |
|  | 3 02 003 | Wind, temperature, humidity, visibility, weather |  |
|  | 3 02 004 | General cloud information | Significant cloud layer |

*(continued)*

*(Category 02 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (High altitude station) |  |
| 3 02 012 | 3 02 002 | High altitude station | Pressure and pressure change |
|  | 3 02 003 | Wind, temperature, humidity, visibility, weather |  |
|  | 3 02 004 | General cloud information | Significant cloud layer |
|  |  |  |  |
|  |  | (Basic surface report) |  |
| 3 02 013 | 3 02 006 | Pressure and 24-hour pressure change |  |
|  | 3 02 003 | Wind, temperature, humidity, visibility, weather |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 02 005 | Cloud layer |  |
|  |  |  |  |
|  |  | (Waves) |  |
| 3 02 021 | 0 22 001 | Direction of waves |  |
|  | 0 22 011 | Period of waves |  |
|  | 0 22 021 | Height of waves |  |
|  |  |  |  |
|  |  | (Wind waves) |  |
| 3 02 022 | 0 22 002 | Direction of wind waves |  |
|  | 0 22 012 | Period of wind waves |  |
|  | 0 22 022 | Height of wind waves |  |
|  |  |  |  |
|  |  | (Swell waves) |  |
| 3 02 023 | 0 22 003 | Direction of swell waves |  |
|  | 0 22 013 | Period of swell waves |  |
|  | 0 22 023 | Height of swell waves |  |
|  |  |  |  |
|  |  | (Wind and swell waves) |  |
| 3 02 024 | 3 02 022 | Wind waves |  |
|  | 1 01 002 | Replicate 1 descriptor 2 times |  |
|  | 3 02 023 | Swell waves | 2 systems of swell |
|  |  |  |  |
|  |  | (Pressure information) |  |
| 3 02 031 | 3 02 001 | Pressure and 3-hour pressure change |  |
|  | 0 10 062 | 24-hour pressure change |  |
|  | 0 07 004 | Pressure | Standard level |
|  | 0 10 009 | Geopotential height |  |
|  |  |  |  |
|  |  | (Temperature and humidity data) |  |
| 3 02 032 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Temperature and humidity measurement |
|  | 0 12 101 | Temperature/air temperature | Scale: 2 |
|  | 0 12 103 | Dewpoint temperature | Scale: 2 |
|  | 0 13 003 | Relative humidity |  |
|  |  |  |  |
|  |  | (Visibility data) |  |
| 3 02 033 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Visibility measurement |
|  | 0 20 001 | Horizontal visibility |  |

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*(Category 02 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Precipitation past 24 hours) |  |
| 3 02 034 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Precipitation measurement |
|  | 0 13 023 | Total precipitation past 24 hours |  |
|  |  |  |  |
|  |  | (Basic synoptic “instantaneous” data) |  |
| 3 02 035 | 3 02 032 | Temperature and humidity data |  |
|  | 3 02 033 | Visibility data |  |
|  | 3 02 034 | Precipitation past 24 hours |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 3 02 004 | General cloud information |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 02 005 | Cloud layer | Individual cloud layer or mass |
|  |  |  |  |
|  |  | (Clouds with bases below station level) |  |
| 3 02 036 | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 002 | Vertical significance (surface observations) |  |
|  | 0 20 011 | Cloud amount |  |
|  | 0 20 012 | Cloud type |  |
|  | 0 20 014 | Height of top of cloud |  |
|  | 0 20 017 | Cloud top description |  |
|  |  |  |  |
|  |  | (State of ground, snow depth, ground minimum temperature) |  |
| 3 02 037 | 0 20 062 | State of the ground (with or without snow) |  |
|  | 0 13 013 | Total snow depth |  |
|  | 0 12 113 | Ground minimum temperature, past 12 hours | Scale: 2 |
|  |  |  |  |
|  |  | (Present and past weather) |  |
| 3 02 038 | 0 20 003 | Present weather |  |
|  | 0 04 024 | Time period or displacement | Hours |
|  | 0 20 004 | Past weather (1) |  |
|  | 0 20 005 | Past weather (2) |  |
|  |  |  |  |
|  |  | (Sunshine data (from 1 hour and 24-hour period)) |  |
| 3 02 039 | 0 04 024 | Time period or displacement | Hours |
|  | 0 14 031 | Total sunshine |  |
|  |  |  |  |
|  |  | (Precipitation measurement) |  |
| 3 02 040 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Precipitation measurement |
|  | 1 02 002 | Replicate 2 descriptors 2 times |  |
|  | 0 04 024 | Time period or displacement | Hours |
|  | 0 13 011 | Total precipitation/total water equivalent |  |

*(continued)*

*(Category 02 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Extreme temperature data) |  |
| 3 02 041 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Temperature measurement |
|  | 0 04 024 | Time period or displacement |  |
|  | 0 04 024 | Time period or displacement (see Notes 1 and 2) |  |
|  | 0 12 111 | Maximum temperature, at height and over period specified | Scale: 2 |
|  | 0 04 024 | Time period or displacement |  |
|  | 0 04 024 | Time period or displacement (see Note 2) |  |
|  | 0 12 112 | Minimum temperature, at height and over period specified | Scale: 2 |
|  |  |  |  |
|  |  | (Wind data) |  |
| 3 02 042 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Wind measurement |
|  | 0 02 002 | Type of instrumentation for wind measurement |  |
|  | 0 08 021 | Time significance | = 2 Time averaged |
|  | 0 04 025 | Time period or displacement | = –10 minutes, or number of minutes after a significant change of wind |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 08 021 | Time significance | Set to missing |
|  | 1 03 002 | Replicate 3 descriptors 2 times |  |
|  | 0 04 025 | Time period or displacement | Minutes |
|  | 0 11 043 | Maximum wind gust direction |  |
|  | 0 11 041 | Maximum wind gust speed |  |
|  |  |  |  |
|  |  | (Basic synoptic “period” data) |  |
| 3 02 043 | 3 02 038 | Present and past weather |  |
|  | 1 01 002 | Replicate 1 descriptor 2 times |  |
|  | 3 02 039 | Sunshine data (from 1 hour and 24-hour period) |  |
|  | 3 02 040 | Precipitation measurement |  |
|  | 3 02 041 | Extreme temperature data |  |
|  | 3 02 042 | Wind data |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Evaporation data) |  |
| 3 02 044 | 0 04 024 | Time period or displacement | Hours |
|  | 0 02 004 | Type of instrumentation for evaporation measurement or type of crop for which evapotranspiration is reported |  |
|  | 0 13 033 | Evaporation/evapotranspiration |  |
|  |  |  |  |
|  |  | (Radiation data (from 1 hour and 24-hour period)) |  |
| 3 02 045 | 0 04 024 | Time period or displacement | Hours |
|  | 0 14 002 | Long-wave radiation, integrated over period specified |  |
|  | 0 14 004 | Short-wave radiation, integrated over period specified |  |

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*(Category 02 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 02 045 | 0 14 016 | Net radiation, integrated over period specified |  |
| *(continued)* | 0 14 028 | Global solar radiation (high accuracy), integrated over period specified |  |
|  | 0 14 029 | Diffuse solar radiation (high accuracy), integrated over period specified |  |
|  | 0 14 030 | Direct solar radiation (high accuracy), integrated over period specified |  |
|  |  |  |  |
|  |  | (Temperature change) |  |
| 3 02 046 | 0 04 024 | Time period or displacement |  |
|  | 0 04 024 | Time period or displacement (see Note 3) |  |
|  | 0 12 049 | Temperature change over specified period |  |
|  |  |  |  |
|  |  | (Direction of cloud drift) |  |
| 3 02 047 | 1 02 003 | Replicate 2 descriptors 3 times |  |
|  | 0 08 002 | Vertical significance (surface observations) |  |
|  | 0 20 054 | True direction from which a phenomenon or clouds are moving or in which they are observed |  |
|  |  |  |  |
|  |  | (Direction and elevation of cloud) |  |
| 3 02 048 | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 021 | Elevation | Elevation angle |
|  | 0 20 012 | Cloud type |  |
|  | 0 05 021 | Bearing or azimuth | Set to missing (cancel) |
|  | 0 07 021 | Elevation | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Cloud information reported with vertical soundings) |  |
| 3 02 049 | 0 08 002 | Vertical significance (surface observations) |  |
|  | 0 20 011 | Cloud amount | Low or middle clouds Nh |
|  | 0 20 013 | Height of base of cloud | h |
|  | 0 20 012 | Cloud type | Low clouds CL |
|  | 0 20 012 | Cloud type | Middle clouds CM |
|  | 0 20 012 | Cloud type | High clouds CH |
|  | 0 08 002 | Vertical significance (surface observations) | Set to missing |
|  |  |  |  |
|  |  | (Radiosonde surface observation) |  |
| 3 02 050 | 0 08 041 | Data significance | = 5 Surface observation displacement from launch point |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 005 | Height increment |  |
|  | 2 02 130 | Change scale |  |
|  | 0 06 021 | Distance |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 0 08 041 | Data significance | = 4 Surface observation |
|  | 2 01 131 | Change data width |  |
|  | 2 02 129 | Change scale |  |

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*(Category 02 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 02 050 | 0 02 115 | Type of surface observing equipment |  |
| *(continued)* | 0 10 004 | Pressure |  |
|  | 0 02 115 | Type of surface observing equipment |  |
|  | 0 13 003 | Relative humidity |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 02 115 | Type of surface observing equipment |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 02 115 | Type of surface observing equipment |  |
|  | 1 02 002 | Replicate 2 descriptors 2 times |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 04 024 | Time period or displacement | Hours |
|  | 0 02 115 | Type of surface observing equipment |  |
|  | 0 12 103 | Dewpoint temperature |  |
|  | 0 12 102 | Wet-bulb temperature |  |
|  | 1 01 003 | Replicate 1 descriptor 3 times |  |
|  | 0 20 012 | Cloud type |  |
|  | 0 20 011 | Cloud amount |  |
|  | 0 20 013 | Height of base of cloud |  |
|  | 1 01 002 | Replicate 1 descriptor 2 times |  |
|  | 0 20 003 | Present weather |  |
|  |  |  |  |
| 3 02 051 | 0 10 004 | Pressure |  |
|  | 0 10 051 | Pressure reduced to mean sea level |  |
|  | 0 07 004 | Pressure | Vertical location |
|  | 0 10 003 | Geopotential |  |
|  | 0 12 004 | Air temperature at 2 m |  |
|  | 0 12 051 | Standard deviation temperature |  |
|  | 0 12 016 | Maximum temperature at 2 m, past 24 hours |  |
|  | 0 12 017 | Minimum temperature at 2 m, past 24 hours |  |
|  | 0 13 004 | Vapour pressure |  |
|  | 1 02 004 | Replicate 2 descriptors 4 times |  |
|  | 0 08 051 | Qualifier for number of missing values in calculation of statistic |  |
|  | 0 08 020 | Total number of missing entities (with respect to accumulation or average) |  |
|  |  |  |  |
|  |  | (Ship temperature and humidity data) |  |
| 3 02 052 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Temperature and humidity measurement |
|  | 0 07 033 | Height of sensor above water surface | Temperature and humidity measurement |
|  | 0 12 101 | Temperature/air temperature | Scale: 2 |
|  | 0 02 039 | Method of wet-bulb temperature measurement |  |
|  | 0 12 102 | Wet-bulb temperature | Scale: 2 |
|  | 0 12 103 | Dewpoint temperature | Scale: 2 |
|  | 0 13 003 | Relative humidity |  |

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*(Category 02 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Ship visibility data) |  |
| 3 02 053 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Visibility measurement |
|  | 0 07 033 | Height of sensor above water surface | Visibility measurement |
|  | 0 20 001 | Horizontal visibility |  |
|  |  |  |  |
|  |  | (Ship “instantaneous” data) |  |
| 3 02 054 | 3 02 052 | Ship temperature and humidity data |  |
|  | 3 02 053 | Ship visibility data |  |
|  | 0 07 033 | Height of sensor above water surface | Set to missing (cancel) |
|  | 3 02 034 | Precipitation past 24 hours |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 3 02 004 | General cloud information |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 02 005 | Cloud layer |  |
|  |  |  |  |
|  |  | (Icing and ice) |  |
| 3 02 055 | 0 20 031 | Ice deposit (thickness) |  |
|  | 0 20 032 | Rate of ice accretion (estimated) |  |
|  | 0 20 033 | Cause of ice accretion |  |
|  | 0 20 034 | Sea-ice concentration |  |
|  | 0 20 035 | Amount and type of ice |  |
|  | 0 20 036 | Ice situation |  |
|  | 0 20 037 | Ice development |  |
|  | 0 20 038 | Bearing of ice edge |  |
|  |  |  |  |
|  |  | (Sea/water temperature) |  |
| 3 02 056 | 0 02 038 | Method of water temperature and/or salinity measurement |  |
|  | 0 07 063 | Depth below sea/water surface (cm) | Sea-surface temperature measurement |
|  | 0 22 043 | Sea/water temperature |  |
|  | 0 07 063 | Depth below sea/water surface (cm) | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Ship marine data) |  |
| 3 02 057 | 3 02 056 | Sea/water temperature | Sea-surface temperature, method of measurement, and depth below sea surface |
|  | 3 02 021 | Waves |  |
|  | 3 02 024 | Wind and swell waves |  |

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*(Category 02 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Ship extreme temperature data) |  |
| 3 02 058 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Temperature measurement |
|  | 0 07 033 | Height of sensor above water surface | Temperature measurement |
|  | 0 04 024 | Time period or displacement |  |
|  | 0 04 024 | Time period or displacement (see Notes 1 and 2) |  |
|  | 0 12 111 | Maximum temperature, at height and over period specified | Scale: 2 |
|  | 0 04 024 | Time period or displacement |  |
|  | 0 04 024 | Time period or displacement (see Note 2) |  |
|  | 0 12 112 | Minimum temperature, at height and over period specified | Scale: 2 |
|  |  |  |  |
|  |  | (Ship wind data) |  |
| 3 02 059 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Wind measurement |
|  | 0 07 033 | Height of sensor above water surface | Wind measurement |
|  | 0 02 002 | Type of instrumentation for wind measurement |  |
|  | 0 08 021 | Time significance | = 2 Time averaged |
|  | 0 04 025 | Time period or displacement | = –10 minutes, or number of minutes after a significant change of wind |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 08 021 | Time significance | Set to missing |
|  | 1 03 002 | Replicate 3 descriptors 2 times |  |
|  | 0 04 025 | Time period or displacement | Minutes |
|  | 0 11 043 | Maximum wind gust direction |  |
|  | 0 11 041 | Maximum wind gust speed |  |
|  |  |  |  |
|  |  | (Ship “period” data) |  |
| 3 02 060 | 3 02 038 | Present and past weather |  |
|  | 3 02 040 | Precipitation measurement |  |
|  | 3 02 058 | Ship extreme temperature data |  |
|  | 3 02 059 | Ship wind data |  |
|  |  |  |  |
|  |  | (Ship “instantaneous” data) |  |
| 3 02 062 | 0 25 188 | Method for reducing pressure to sea level |  |
|  | 3 02 001 | Pressure and 3-hour pressure change |  |
|  | 3 02 093 | Extended ship temperature and humidity data |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 053 | Ship visibility data |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 0 07 033 | Height of sensor above water surface | Set to missing (cancel) |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |

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*(Category 02 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 02 062 | 3 02 004 | General cloud information |  |
| *(continued)* | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 02 005 | Cloud layer |  |
|  | 0 08 002 | Vertical significance (surface observations) | Set to missing (cancel) |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 055 | Icing and ice |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 056 | Sea/water temperature |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 021 | Waves |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 024 | Wind and swell waves |  |
|  |  |  |  |
|  |  | (Ship “period” data) |  |
| 3 02 063 | 3 02 038 | Present and past weather |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 040 | Precipitation measurement |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 034 | Precipitation past 24 hours |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 058 | Ship extreme temperature data |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 064 | Ship or other marine platform wind data |  |
|  |  |  |  |
|  |  | (Ship or other marine platform wind data) |  |
| 3 02 064 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 07 033 | Height of sensor above water surface |  |
|  | 0 02 002 | Type of instrumentation for wind measurement |  |
|  | 0 08 021 | Time significance | = 2 Time averaged |
|  | 0 04 025 | Time period or displacement |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 08 021 | Time significance | Set to missing (cancel) |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |

*(continued)*

*(Category 02 – continued)*

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| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 02 064 | 0 04 025 | Time period or displacement |  |
| *(continued)* | 0 11 043 | Maximum wind gust direction |  |
|  | 0 11 041 | Maximum wind gust speed |  |
|  |  |  |  |
|  |  | (Dangerous weather phenomena) |  |
| 3 02 066 | 0 20 023 | Other weather phenomena |  |
|  | 0 20 024 | Intensity of phenomena |  |
|  | 0 20 027 | Phenomena occurrence |  |
|  | 0 20 054 | True direction from which a phenomenon or clouds are moving or in which they are observed |  |
|  | 0 20 023 | Other weather phenomena |  |
|  | 0 20 027 | Phenomena occurrence |  |
|  | 0 20 054 | True direction from which a phenomenon or clouds are moving or in which they are observed |  |
|  | 0 20 025 | Obscuration |  |
|  | 0 20 026 | Character of obscuration |  |
|  | 0 20 027 | Phenomena occurrence |  |
|  | 0 20 040 | Evolution of drift snow |  |
|  | 0 20 066 | Maximum diameter of hailstones |  |
|  | 0 20 027 | Phenomena occurrence |  |
|  | 0 20 021 | Type of precipitation |  |
|  | 0 20 067 | Diameter of deposit |  |
|  | 0 20 027 | Phenomena occurrence |  |
|  |  |  |  |
|  |  | (Additional synoptical parameters) |  |
| 3 02 067 | 0 01 023 | Observation sequence number |  |
|  |  | *Additional “instantaneous” data* |  |
|  | 0 04 025 | Time period or displacement | = 0 minutes |
|  | 0 02 177 | Method of snow depth measurement  = 0 Manual observation,  = 1 Ultrasonic method, = 2 Video camera method,  = 3 Laser method, 4–13 Reserved, = 14 Others, = 15 Missing value | /see left column |
|  |  | *Additional present weather* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 20 003 | Present weather | 960ww, 961ww |
|  |  | *Visibility in different directions* |  |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 05 021 | Bearing or azimuth | 981VV–988VV |
|  | 0 20 001 | Horizontal visibility | VV |
|  | 0 05 021 | Bearing or azimuth | Set to missing (cancel) |
|  |  | *Sea data (observations from a coastal station)* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |

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*(Category 02 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 02 067 *(continued)* | 3 02 056 | Sea/water temperature | Sea-surface temperature, method of measurement, and depth below sea surface |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 33 041 | Attribute of following value |  |
|  | 0 20 058 | Visibility seawards from a coastal station | 980VsVs |
|  | 0 22 061 | State of the sea | 924SVs |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 022 | Wind waves |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 02 023 | Swell waves |  |
|  |  | *Clouds* |  |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 20 054 | True direction from which a phenomenon or clouds are moving or in which they are observed | Da, Dp |
|  | 0 20 137 | Evolution of clouds | 940Cn3 |
|  | 0 20 012 | Cloud type | 941CDp, 943CLDp |
|  | 0 20 090 | Special clouds | 993CsDa |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 20 054 | True direction from which a phenomenon or clouds are moving or in which they are observed |  |
|  | 0 20 137 | Evolution of clouds |  |
|  | 0 20 136 | Supplementary cloud type | 948C0Da, 949CaDa, 950Nmn3, 951Nvn4 |
|  |  | *Additional "period" data* |  |
|  | 0 04 025 | Time period or displacement | Reference period of fresh fallen snow |
|  | 0 13 012 | Depth of fresh snow |  |
|  |  | *Additional wind data* |  |
|  | 0 04 025 | Time period or displacement | = –60 minutes |
|  | 0 11 042 | Maximum wind speed (10-minute mean wind) | 912ff 902tt 912ff .. mandatory ff ≥ 18 |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 021 | Time significance | = 30 Time of occurrence,  = 17 Start of phenomenon |
|  | 0 04 025 | Time period or displacement | = –xx **|** 902tt |
|  | 0 11 042 | Maximum wind speed (10-minute mean wind) | 912ff |
|  | 0 08 021 | Time significance | Set to missing (cancel) |

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*(Category 02 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 02 067 |  | *Significant change in wind speed and/or direction* |  |
| *(continued)* | 1 15 000 | Delayed replication of 15 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 021 | Time significance | = 30 Time of occurrence, |
|  |  |  | = 17 Start of phenomenon |
|  | 0 04 015 | Time increment | = –xx1 |
|  | 0 08 021 | Time significance | = 2 Time averaged |
|  | 0 04 025 | Time period or displacement | = –10 minutes, or number of minutes after a significant change of wind |
|  | 0 11 001 | Wind direction | 915dd |
|  | 0 11 002 | Wind speed | 913ff |
|  | 0 08 021 | Time significance | = 22 Time of occurrence of wind shift |
|  | 0 04 015 | Time increment | = +xx2 |
|  | 0 08 021 | Time significance | = 2 Time averaged |
|  | 0 04 025 | Time period or displacement | = –10 minutes, or number of minutes after a significant change of wind |
|  | 0 11 001 | Wind direction | 915dd |
|  | 0 11 002 | Wind speed | 913ff |
|  | 0 08 021 | Time significance | Set to missing (cancel) |
|  | 0 04 025 | Time period or displacement | = 0 minutes |
|  | 0 04 015 | Time increment | = +(xx1–xx2) **|** Non negative to reset the time to the actual time |
|  |  | *Additional weather* |  |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 04 025 | Time period or displacement | = –xx, i.e. from |
|  | 0 04 025 | Time period or displacement | = –xx, i.e. to |
|  | 0 20 003 | Present weather | 962ww, 963w1w1, 964ww, 965w1w1, 966ww, 967w1w1 |
|  |  | *Additional 9SPSPspsp groups* |  |
|  | 1 10 000 | Delayed replication of 10 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 04 025 | Time period or displacement | = –xx, i.e. from |
|  | 0 04 025 | Time period or displacement | = –xx, i.e. to |
|  | 0 05 021 | Bearing or azimuth | Da, Dp |
|  | 0 05 021 | Bearing or azimuth | Da, Dp |
|  | 0 20 054 | True direction from which a phenomenon or clouds are moving or in which they are observed | Da, Dp |

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*(Category 02 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 02 067 *(continued)* | 0 20 024 | Intensity of phenomena | = 1 Light,  = 2 Moderate,  = 3 Heavy, = 4 Violent, = 5 Severe |
|  | 0 20 025 | Obscuration |  |
|  | 0 20 026 | Character of obscuration |  |
|  | 0 20 027 | Phenomena occurrence |  |
|  | 0 20 063 | Special phenomena |  |
|  |  |  |  |
|  |  | (Visibility data) |  |
| 3 02 069 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 07 033 | Height of sensor above water surface |  |
|  | 0 33 041 | Attribute of following value |  |
|  | 0 20 001 | Horizontal visibility |  |
|  |  |  |  |
|  |  | (Wind data) |  |
| 3 02 070 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 07 033 | Height of sensor above water surface |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 11 043 | Maximum wind gust direction |  |
|  | 0 11 041 | Maximum wind gust speed |  |
|  | 0 11 016 | Extreme counterclockwise wind direction of a variable wind |  |
|  | 0 11 017 | Extreme clockwise wind direction of a variable wind |  |
|  |  |  |  |
|  |  | (Wind data from one-hour period) |  |
| 3 02 071 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 07 033 | Height of sensor above water surface |  |
|  | 0 08 021 | Time significance | = 2 Time averaged |
|  | 0 04 025 | Time period or displacement | = –10 minutes, or number of minutes after a significant change of wind, if any |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 08 021 | Time significance | Set to missing |
|  | 1 03 002 | Replicate 3 descriptors 2 times |  |
|  | 0 04 025 | Time period or displacement | = –10 minutes in the first replication, = –60 minutes in the second replication |
|  | 0 11 043 | Maximum wind gust direction |  |
|  | 0 11 041 | Maximum wind gust speed |  |
|  | 0 04 025 | Time period or displacement | = –10 minutes |
|  | 0 11 016 | Extreme counterclockwise wind direction of a variable wind |  |
|  | 0 11 017 | Extreme clockwise wind direction of a variable wind |  |

*(continued)*

*(Category 02 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Temperature and humidity data) |  |
| 3 02 072 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 07 033 | Height of sensor above water surface |  |
|  | 0 12 101 | Temperature/air temperature | Scale: 2 |
|  | 0 12 103 | Dewpoint temperature | Scale: 2 |
|  | 0 13 003 | Relative humidity |  |
|  |  |  |  |
|  |  | (Cloud data) |  |
| 3 02 073 | 0 20 010 | Cloud cover (total) |  |
|  | 1 05 004 | Replicate 5 descriptors 4 times |  |
|  | 0 08 002 | Vertical significance (surface observations) |  |
|  | 0 20 011 | Cloud amount |  |
|  | 0 20 012 | Cloud type |  |
|  | 0 33 041 | Attribute of following value |  |
|  | 0 20 013 | Height of base of cloud |  |
|  |  |  |  |
|  |  | (Present and past weather) |  |
| 3 02 074 | 0 20 003 | Present weather |  |
|  | 0 04 025 | Time period or displacement |  |
|  | 0 20 004 | Past weather (1) |  |
|  | 0 20 005 | Past weather (2) |  |
|  |  |  |  |
|  |  | (Intensity of precipitation, size of precipitation element) |  |
| 3 02 075 | 0 08 021 | Time significance | = 2 Time averaged |
|  | 0 04 025 | Time period or displacement | = –10 minutes |
|  | 0 13 055 | Intensity of precipitation |  |
|  | 0 13 058 | Size of precipitating element |  |
|  | 0 08 021 | Time significance | Set to missing |
|  |  |  |  |
|  |  | (Precipitation, obscuration and other phenomena) |  |
| 3 02 076 | 0 20 021 | Type of precipitation |  |
|  | 0 20 022 | Character of precipitation |  |
|  | 0 26 020 | Duration of precipitation |  |
|  | 0 20 023 | Other weather phenomena |  |
|  | 0 20 024 | Intensity of phenomena |  |
|  | 0 20 025 | Obscuration |  |
|  | 0 20 026 | Character of obscuration |  |
|  |  |  |  |
|  |  | (Extreme temperature data) |  |
| 3 02 077 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 07 033 | Height of sensor above water surface |  |
|  | 0 04 025 | Time period or displacement |  |
|  | 0 12 111 | Maximum temperature, at height and over period specified | Scale: 2 |
|  | 0 12 112 | Minimum temperature, at height and over period specified | Scale: 2 |

*(continued)*

*(Category 02 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 02 077 *(continued)* | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Ground temperature |
|  | 0 04 025 | Time period or displacement |  |
|  | 0 12 112 | Minimum temperature, at height and over period specified | Scale: 2 **|** Ground temperature |
|  |  |  |  |
|  |  | (State of ground and snow depth measurement) |  |
| 3 02 078 | 0 02 176 | Method of state of ground measurement |  |
|  | 0 20 062 | State of the ground (with or without snow) |  |
|  | 0 02 177 | Method of snow depth measurement |  |
|  | 0 13 013 | Total snow depth |  |
|  |  |  |  |
|  |  | (Precipitation measurement) |  |
| 3 02 079 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 02 175 | Method of precipitation measurement |  |
|  | 0 02 178 | Method of liquid content measurement of precipitation |  |
|  | 0 04 025 | Time period or displacement |  |
|  | 0 13 011 | Total precipitation/total water equivalent |  |
|  |  |  |  |
|  |  | (Evaporation measurement) |  |
| 3 02 080 | 0 02 185 | Method of evaporation measurement |  |
|  | 0 04 025 | Time period or displacement |  |
|  | 0 13 033 | Evaporation/evapotranspiration |  |
|  |  |  |  |
|  |  | (Total sunshine data) |  |
| 3 02 081 | 0 04 025 | Time period or displacement |  |
|  | 0 14 031 | Total sunshine |  |
|  |  |  |  |
|  |  | (Radiation data) |  |
| 3 02 082 | 0 04 025 | Time period or displacement |  |
|  | 0 14 002 | Long-wave radiation, integrated over period specified |  |
|  | 0 14 004 | Short-wave radiation, integrated over period specified |  |
|  | 0 14 016 | Net radiation, integrated over period specified |  |
|  | 0 14 028 | Global solar radiation (high accuracy), integrated over period specified |  |
|  | 0 14 029 | Diffuse solar radiation (high accuracy), integrated over period specified |  |
|  | 0 14 030 | Direct solar radiation (high accuracy), integrated over period specified |  |
|  |  |  |  |
|  |  | (First-order statistics of P, W, T, U data) |  |
| 3 02 083 | 0 04 025 | Time period or displacement |  |
|  | 0 08 023 | First-order statistics |  |
|  | 0 10 004 | Pressure |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 12 101 | Temperature/air temperature | Scale: 2 |
|  | 0 13 003 | Relative humidity |  |
|  | 0 08 023 | First-order statistics | Set to missing |

*(continued)*

*(Category 02 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (“Instantaneous” data of sequence 3 07 096) |  |
| 3 02 084 | 3 02 031 | Pressure information |  |
|  | 3 02 072 | Temperature and humidity data |  |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 1 01 005 | Replicate 1 descriptor 5 times |  |
|  | 3 07 063 | Depth below land surface and soil temperature |  |
|  | 0 07 061 | Depth below land surface | Set to missing (cancel) |
|  |  | *Visibility data* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 069 | Visibility data |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 0 07 033 | Height of sensor above water surface | Set to missing (cancel) |
|  |  | *Marine data* |  |
|  | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 20 031 | Ice deposit (thickness) |  |
|  | 0 20 032 | Rate of ice accretion (estimated) |  |
|  | 0 02 038 | Method of water temperature and/or salinity measurement |  |
|  | 0 22 043 | Sea/water temperature | Scale: 2 |
|  | 3 02 021 | Waves |  |
|  |  | *State of ground and snow depth measurement* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 078 | State of ground and snow depth measurement |  |
|  | 0 12 113 | Ground minimum temperature, past 12 hours | Scale: 2 |
|  |  | *Cloud data* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 004 | General cloud information |  |
|  | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 002 | Vertical significance (surface observations) |  |
|  | 0 20 011 | Cloud amount |  |
|  | 0 20 012 | Cloud type |  |
|  | 0 33 041 | Attribute of following value |  |
|  | 0 20 013 | Height of base of cloud |  |
|  | 3 02 036 | Clouds with bases below station level |  |
|  |  | *Direction of cloud drift 6DLDMDH* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 047 | Direction of cloud drift |  |
|  | 0 08 002 | Vertical significance (surface observations) | Set to missing (cancel) |
|  |  | *Direction and elevation of cloud 57CDaec* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 048 | Direction and elevation of cloud |  |

*(continued)*

*(Category 02 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (“Period” data of sequence 3 07 096) |  |
|  |  | *Present and past weather data* |  |
| 3 02 085 | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 20 003 | Present weather |  |
|  | 1 03 002 | Replicate 3 descriptors 2 times |  |
|  | 0 04 024 | Time period or displacement  = –1 hour in the first replication, = –x hours in the second replication,  x corresponding to the time period of W1W2 in the SYNOP report | /see left column |
|  | 0 20 004 | Past weather (1) |  |
|  | 0 20 005 | Past weather (2) |  |
|  |  | *Intensity of precipitation, size of precipitation  element* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 175 | Intensity of precipitation, size of precipitation element |  |
|  |  | *Precipitation, obscuration and other phenomena* |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 04 025 | Time period or displacement | = –10 minutes |
|  | 3 02 076 | Precipitation, obscuration and other phenomena |  |
|  |  | *Lightning data* |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 04 025 | Time period or displacement | = –10 minutes |
|  | 0 13 059 | Number of flashes (thunderstorm) |  |
|  |  | *Wind data* |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 07 033 | Height of sensor above water surface |  |
|  | 0 08 021 | Time significance | = 2 Time averaged |
|  | 0 04 025 | Time period or displacement | = –10 minutes, or number of minutes after a significant change of wind |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 08 021 | Time significance | Set to missing |
|  | 1 03 003 | Replicate 3 descriptors 3 times |  |
|  | 0 04 025 | Time period or displacement  = –10 minutes in the first replication,  = –60 minutes in the second replication, = –60x3 or 60x6 minutes in the third replication | /see left column |
|  | 0 11 043 | Maximum wind gust direction |  |
|  | 0 11 041 | Maximum wind gust speed |  |

*(continued)*

*(Category 02 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 02 085 | 0 04 025 | Time period or displacement | = –10 minutes |
| *(continued)* | 0 11 016 | Extreme counterclockwise wind direction of a variable wind |  |
|  | 0 11 017 | Extreme clockwise wind direction of a variable wind |  |
|  |  | *Extreme temperature data* |  |
|  | 3 02 077 | Extreme temperature data |  |
|  | 0 07 033 | Height of sensor above water surface | Set to missing (cancel) |
|  | 3 02 041 | Extreme temperature data |  |
|  |  | *Precipitation measurement* |  |
|  | 1 06 000 | Delayed replication of 6 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 02 175 | Method of precipitation measurement |  |
|  | 0 02 178 | Method of liquid content measurement of precipitation |  |
|  | 1 02 005 | Replicate 2 descriptors 5 times |  |
|  | 0 04 024 | Time period or displacement | = –1 hour in the first replication, = –3, –6, –12 and –24 hours in the other replications |
|  | 0 13 011 | Total precipitation/total water equivalent |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  |  | *Evaporation data* |  |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 02 185 | Method of evaporation measurement |  |
|  | 1 01 002 | Replicate 1 descriptor 2 times |  |
|  | 3 02 044 | Evaporation data |  |
|  |  | *Total sunshine data* |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 1 01 002 | Replicate 1 descriptor 2 times |  |
|  | 3 02 039 | Sunshine data (from 1 hour and 24-hour period) |  |
|  |  | *Radiation data* |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 1 01 002 | Replicate 1 descriptor 2 times |  |
|  | 3 02 045 | Radiation data (from 1 hour and 24-hour period) |  |
|  |  | *Temperature change group 54g0sndT* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 046 | Temperature change |  |
|  |  | *First-order statistics of P, W, T, U data* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 083 | First-order statistics of P, W, T, U data |  |

*(continued)*

*(Category 02 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Locust information) |  |
| 3 02 089 | 0 20 101 | Locust (acridian) name | Ln |
|  | 0 20 102 | Locust (maturity) colour | Lc |
|  | 0 20 103 | Stage of development of locusts | Ld |
|  | 0 20 104 | Organization state of swarm or band of locusts | Lg |
|  | 0 20 105 | Size of swarm or band of locusts and duration of passage of swarm | sL |
|  | 0 20 106 | Locust population density | dL |
|  | 0 20 107 | Direction of movements of locust swarm | DL |
|  | 0 20 108 | Extent of vegetation | ve |
|  |  |  |  |
|  |  | (Sea/water temperature high precision) |  |
| 3 02 090 | 0 02 038 | Method of water temperature and/or salinity measurement |  |
|  | 0 07 063 | Depth below sea/water surface (cm) | Sea-surface temperature measurement |
|  | 0 22 045 | Sea/water temperature |  |
|  |  |  |  |
|  |  | (Sequence for representation of ancillary meteorological observations) |  |
| 3 02 091 | 0 20 001 | Horizontal visibility |  |
|  | 0 04 024 | Time period or displacement |  |
|  | 0 13 011 | Total precipitation/total water equivalent |  |
|  |  |  |  |
|  |  | (VOSClim data elements) |  |
| 3 02 092 | 0 11 104 | True heading of aircraft, ship or other mobile platform | Ship’s true heading |
|  | 0 01 012 | Direction of motion of moving observing platform | Ship’s course over ground |
|  | 0 01 013 | Speed of motion of moving observing platform | Ship’s speed over ground |
|  | 0 10 038 | Maximum height of deck cargo above summer load line |  |
|  | 0 10 039 | Departure of reference level (summer maximum load line) from actual sea level |  |
|  | 0 11 007 | Relative wind direction (in degrees off bow) |  |
|  | 0 11 008 | Relative wind speed |  |
|  |  |  |  |
|  |  | (Extended ship temperature and humidity data) |  |
| 3 02 093 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 07 033 | Height of sensor above water surface |  |
|  | 3 03 099 | Metadata common to temperature/humidity sensors |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor | Set to 0 if no change from previous values, 1 if changes |

*(continued)*

*(Category 02 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 02 093 *(continued)* | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 07 033 | Height of sensor above water surface |  |
|  | 3 03 099 | Metadata common to temperature/humidity sensors |  |
|  | 0 02 039 | Method of wet-bulb temperature measurement |  |
|  | 0 02 097 | Type of humidity sensor |  |
|  | 0 03 024 | Psychrometric coefficient | Set to missing if type of humidity sensor is not psychrometer |
|  | 0 03 021 | Hygrometer heating |  |
|  | 0 12 102 | Wet-bulb temperature |  |
|  | 0 12 103 | Dewpoint temperature |  |
|  | 0 13 003 | Relative humidity |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 0 07 033 | Height of sensor above water surface | Set to missing (cancel) |
|  | 3 03 099 | Metadata common to temperature/humidity sensors | Set all elements in sequence to missing (cancel) |
|  | 0 02 039 | Method of wet-bulb temperature measurement | Set to missing (cancel) |
|  | 0 02 097 | Type of humidity sensor | Set to missing (cancel) |
|  | 0 03 021 | Hygrometer heating | Set to missing (cancel) |
|  | 0 03 024 | Psychrometric coefficient | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Intensity of precipitation, size of precipitation element) |  |
| 3 02 175 | 0 08 021 | Time significance |  |
|  | 0 04 025 | Time period or displacement |  |
|  | 0 13 155 | Intensity of precipitation (high accuracy) |  |
|  | 0 13 058 | Size of precipitating element |  |
|  | 0 08 021 | Time significance |  |

Notes:

(1) Within RA IV, the maximum temperature at 1200 UTC is reported for the previous calendar day (i.e. the ending time of the period is not equal to the nominal time of the report). To construct the required time range, descriptor 0 04 024 has to be included two times. If the period ends at the nominal time of the report, value of the second 0 04 024 shall be set to 0.

(2) Within RA III, the maximum daytime temperature and the minimum night-time temperature is reported (i.e. the ending time of the period may not be equal to the nominal time of the report). To construct the required time range, descriptor 0 04 024 has to be included two times. If the period ends at the nominal time of the report, value of the second 0 04 024 shall be set to 0.

(3) To construct the required time range, descriptor 0 04 024 has to be included two times.

**Category 03 – Meteorological sequences common to vertical soundings data**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 03 001 | 0 07 003 | Geopotential |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  |  |  |  |
|  |  | (Wind at pressure level) |  |
| 3 03 002 | 0 07 004 | Pressure |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  |  |  |  |
| 3 03 003 | 0 07 004 | Pressure |  |
|  | 0 10 003 | Geopotential |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 12 003 | Dewpoint temperature |  |
|  |  |  |  |
| 3 03 004 | 0 07 004 | Pressure |  |
|  | 0 10 003 | Geopotential |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 12 003 | Dewpoint temperature |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  |  |  |  |
|  |  | (Wind at height) |  |
| 3 03 011 | 0 07 003 | Geopotential |  |
|  | 0 08 001 | Vertical sounding significance |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  |  |  |  |
|  |  | (Wind at pressure level) |  |
| 3 03 012 | 0 07 004 | Pressure |  |
|  | 0 08 001 | Vertical sounding significance |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  |  |  |  |
|  |  | (Geopotential, temperature, humidity, wind at pressure level) |  |
| 3 03 013 | 0 07 004 | Pressure |  |
|  | 0 08 001 | Vertical sounding significance |  |
|  | 0 10 003 | Geopotential |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 13 003 | Relative humidity |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  |  |  |  |
|  |  | (Geopotential, temperature, dewpoint temperature, wind at pressure level) |  |
| 3 03 014 | 0 07 004 | Pressure |  |
|  | 0 08 001 | Vertical sounding significance |  |
|  | 0 10 003 | Geopotential |  |
|  | 0 12 001 | Temperature/air temperature |  |

*(continued)*

*(Category 03 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 03 014 | 0 12 003 | Dewpoint temperature |  |
| *(continued)* | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  |  |  |  |
|  |  | (Layer, quality) |  |
| 3 03 021 | 0 07 004 | Pressure | Define layer |
|  | 0 07 004 | Pressure |  |
|  | 2 04 007 | Add associated field | 7 bits long |
|  | 0 31 021 | Associated field significance |  |
|  |  |  |  |
| 3 03 022 | 3 03 021 | Layer, quality |  |
|  | 0 10 003 | Geopotential | Layer mean thickness |
|  | 2 04 000 | Add associated field | Cancel |
|  |  |  |  |
|  |  | (Layer mean temperature) |  |
| 3 03 023 | 3 03 021 | Layer, quality |  |
|  | 0 12 001 | Temperature/air temperature | Layer mean |
|  | 2 04 000 | Add associated field | Cancel |
|  |  |  |  |
|  |  | (Precipitable water) |  |
| 3 03 024 | 3 03 021 | Layer, quality |  |
|  | 0 13 016 | Precipitable water |  |
|  | 2 04 000 | Add associated field | Cancel |
|  |  |  |  |
|  |  | (Satellite channel and brightness temperature) |  |
| 3 03 025 | 0 02 025 | Satellite channel(s) used in computation |  |
|  | 2 04 007 | Add associated field | 7 bits long |
|  | 0 31 021 | Associated field significance |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 2 04 000 | Add associated field | Cancel |
|  |  |  |  |
| 3 03 026 | 0 07 004 | Pressure |  |
|  | 0 08 003 | Vertical significance (satellite observations) |  |
|  | 2 04 007 | Add associated field | 7 bits long |
|  | 0 31 021 | Associated field significance |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 2 04 000 | Add associated field | Cancel |
|  |  |  |  |
| 3 03 027 | 0 07 004 | Pressure |  |
|  | 2 04 007 | Add associated field | 7 bits long |
|  | 0 31 021 | Associated field significance |  |
|  | 0 10 003 | Geopotential |  |
|  | 2 04 000 | Add associated field | Cancel |

*(continued)*

*(Category 03 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Significance data, land/sea, skin temperature) |  |
| 3 03 031 | 0 07 004 | Pressure |  |
|  | 0 08 003 | Vertical significance (satellite observations) | Base of sounding |
|  | 0 07 021 | Elevation | Local zenith |
|  | 0 07 022 | Solar elevation | Solar zenith |
|  | 0 08 012 | Land/sea qualifier |  |
|  | 0 12 061 | Skin temperature |  |
|  |  |  |  |
|  |  | (Cloud) |  |
| 3 03 032 | 0 20 011 | Cloud amount |  |
|  | 0 20 016 | Pressure at top of cloud |  |
|  |  |  |  |
|  |  | (Cloud) |  |
| 3 03 033 | 0 20 010 | Cloud cover (total) |  |
|  | 0 20 016 | Pressure at top of cloud |  |
|  |  |  |  |
|  |  | (Radiosonde duration of flight and termination information) |  |
| 3 03 040 | 0 08 041 | Data significance | = 7 Flight level termination point |
|  | 0 04 025 | Time period or displacement | Minutes |
|  | 0 04 026 | Time period or displacement | Seconds |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 3 01 122 | Date/time (to hundredths of second) |  |
|  | 2 01 131 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 0 25 069 | Flight level pressure corrections |  |
|  | 0 07 004 | Pressure |  |
|  | 0 13 003 | Relative humidity |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 02 013 | Solar and infrared radiation correction |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 10 009 | Geopotential height |  |
|  | 1 02 002 | Replicate 2 descriptors 2 times |  |
|  | 0 08 040 | Flight level significance |  |
|  | 0 35 035 | Reason for termination |  |
|  |  |  |  |
|  |  | (Wind sequence) |  |
| 3 03 041 | 0 02 152 | Satellite instrument used in data processing |  |
|  | 0 02 023 | Satellite-derived wind computation method |  |
|  | 0 07 004 | Pressure |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 02 154 | Satellite channel band width |  |
|  | 0 12 071 | Coldest cluster temperature |  |

*(continued)*

*(Category 03 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Wind data at a pressure level with radiosonde position) |  |
| 3 03 050 | 0 04 086 | Long time period or displacement | Since launch time |
|  | 0 08 042 | Extended vertical sounding significance |  |
|  | 0 07 004 | Pressure |  |
|  | 0 05 015 | Latitude displacement (high accuracy) | Since launch site |
|  | 0 06 015 | Longitude displacement (high accuracy) | Since launch site |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  |  |  |  |
|  |  | (Wind shear data at a pressure level with radiosonde position) |  |
| 3 03 051 | 0 04 086 | Long time period or displacement | Since launch time |
|  | 0 08 042 | Extended vertical sounding significance |  |
|  | 0 07 004 | Pressure |  |
|  | 0 05 015 | Latitude displacement (high accuracy) | Since launch site |
|  | 0 06 015 | Longitude displacement (high accuracy) | Since launch site |
|  | 0 11 061 | Absolute wind shear in 1 km layer below |  |
|  | 0 11 062 | Absolute wind shear in 1 km layer above |  |
|  |  |  |  |
|  |  | (Wind data at a height level with radiosonde position) |  |
| 3 03 052 | 0 04 086 | Long time period or displacement | Since launch time |
|  | 0 08 042 | Extended vertical sounding significance |  |
|  | 0 07 009 | Geopotential height |  |
|  | 0 05 015 | Latitude displacement (high accuracy) | Since launch site |
|  | 0 06 015 | Longitude displacement (high accuracy) | Since launch site |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  |  |  |  |
|  |  | (Wind shear data at a height level with radiosonde position) |  |
| 3 03 053 | 0 04 086 | Long time period or displacement | Since launch time |
|  | 0 08 042 | Extended vertical sounding significance |  |
|  | 0 07 009 | Geopotential height |  |
|  | 0 05 015 | Latitude displacement (high accuracy) | Since launch site |
|  | 0 06 015 | Longitude displacement (high accuracy) | Since launch site |
|  | 0 11 061 | Absolute wind shear in 1 km layer below |  |
|  | 0 11 062 | Absolute wind shear in 1 km layer above |  |
|  |  |  |  |
|  |  | (Temperature, dewpoint and wind data at a pressure level with radiosonde position) |  |
| 3 03 054 | 0 04 086 | Long time period or displacement | Since launch time |
|  | 0 08 042 | Extended vertical sounding significance |  |
|  | 0 07 004 | Pressure |  |
|  | 0 10 009 | Geopotential height |  |
|  | 0 05 015 | Latitude displacement (high accuracy) | Since launch site |
|  | 0 06 015 | Longitude displacement (high accuracy) | Since launch site |
|  | 0 12 101 | Temperature/air temperature | Scale: 2 |

*(continued)*

*(Category 03 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 03 054 | 0 12 103 | Dewpoint temperature | Scale: 2 |
| *(continued)* | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  |  |  |  |
|  |  | (Temperature, dewpoint, relative humidity and wind data at a height level with radiosonde position) |  |
| 3 03 055 | 0 04 086 | Long time period or displacement | Since launch time |
|  | 0 08 042 | Extended vertical sounding significance |  |
|  | 0 07 009 | Geopotential height |  |
|  | 0 05 015 | Latitude displacement (high accuracy) | Since launch site |
|  | 0 06 015 | Longitude displacement (high accuracy) | Since launch site |
|  | 0 12 101 | Temperature/air temperature | Scale: 2 |
|  | 0 13 009 | Relative humidity |  |
|  | 0 12 103 | Dewpoint temperature | Scale: 2 |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  |  |  |  |
|  |  | (Temperature, dewpoint and wind data at a pressure level with radiosonde position and higher precision of pressure and geopotential height) |  |
| 3 03 056 | 0 04 086 | Long time period or displacement | Since launch time |
|  | 0 08 042 | Extended vertical sounding significance |  |
|  | 2 07 001 | Increase scale, reference value and data width |  |
|  | 0 07 004 | Pressure | Scale: 0 |
|  | 0 10 009 | Geopotential height | Scale: 1 |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 05 015 | Latitude displacement (high accuracy) | Since launch site |
|  | 0 06 015 | Longitude displacement (high accuracy) | Since launch site |
|  | 0 12 101 | Temperature/air temperature | Scale: 2 |
|  | 0 12 103 | Dewpoint temperature | Scale: 2 |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  |  |  |  |
|  |  | (Metadata common to temperature/humidity sensors) |  |
| 3 03 099 | 0 03 005 | Horizontal width of screen or shield (x) |  |
|  | 0 03 006 | Horizontal depth of screen or shield (y) |  |
|  | 0 03 007 | Vertical height of screen or shield (z) |  |
|  | 0 02 096 | Type of temperature sensor |  |
|  | 0 03 022 | Instrument owner |  |
|  | 0 03 003 | Thermometer/hygrometer housing |  |
|  | 0 03 020 | Material for thermometer/hygrometer housing |  |
|  | 0 03 004 | Type of screen/shelter/radiation shield |  |
|  | 0 03 023 | Configuration of louvres for thermometer/hygrometer screen |  |
|  | 0 03 008 | Artificially ventilated screen or shield |  |
|  | 0 03 009 | Amount of forced ventilation at time of reading |  |

Notes:

(1) Descriptors 3 03 021 to 3 03 027 are not available in CREX.

*(continued)*

*(Category 03 – continued)*

(2) Long time displacement 0 04 086 represents the time offset from the launch time 3 01 013 (in seconds).

(3) Latitude displacement 0 05 015 represents the latitude offset from the latitude of the launch site. Longitude displacement 0 06 015 represents the longitude offset from the longitude of the launch site.

**Category 04 – Meteorological sequences common to satellite observations**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Cloud top pressure, temperature, wind) |  |
| 3 04 001 | 0 08 003 | Vertical significance (satellite observations) |  |
|  | 0 10 004 | Pressure |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  |  |  |  |
|  |  | (Cloud top pressure, wind) |  |
| 3 04 002 | 0 08 003 | Vertical significance (satellite observations) |  |
|  | 0 10 004 | Pressure |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  |  |  |  |
|  |  | (Surface temperature) |  |
| 3 04 003 | 0 08 003 | Vertical significance (satellite observations) |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  |  |  |  |
|  |  | (Cloud top pressure, cloud cover, temperature) |  |
| 3 04 004 | 0 08 003 | Vertical significance (satellite observations) |  |
|  | 0 10 004 | Pressure |  |
|  | 0 20 010 | Cloud cover (total) |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  |  |  |  |
|  |  | (Layer mean relative humidity) |  |
| 3 04 005 | 0 02 024 | Integrated mean humidity computational method |  |
|  | 0 07 004 | Pressure | Define layer |
|  | 0 07 004 | Pressure |  |
|  | 0 13 003 | Relative humidity |  |
|  |  |  |  |
|  |  | (Radiation) |  |
| 3 04 006 | 0 14 001 | Long-wave radiation, integrated over 24 hours | Outgoing long-wave radiation |
|  | 0 14 001 | Long-wave radiation, integrated over 24 hours | Incoming long-wave radiation |
|  | 0 14 003 | Short-wave radiation, integrated over 24 hours | Outgoing short-wave radiation |
|  |  |  |  |
|  |  | (GOES-I/M info) |  |
| 3 04 011 | 0 02 163 | Height assignment method |  |
|  | 0 02 164 | Tracer correlation method |  |
|  | 0 08 012 | Land/sea qualifier |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 02 057 | Origin of first-guess information for GOES-I/M soundings |  |
|  | 0 08 021 | Time significance |  |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |

*(continued)*

*(Category 04 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 04 011 | 0 08 021 | Time significance |  |
| *(continued)* | 0 04 024 | Time period or displacement |  |
|  | 1 10 004 | Replicate 10 descriptors 4 times |  |
|  | 0 08 021 | Time significance |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 04 006 | Second |  |
|  | 0 08 021 | Time significance |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 04 006 | Second |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 1 03 010 | Replicate 3 descriptors 10 times |  |
|  | 0 02 163 | Height assignment method |  |
|  | 0 07 004 | Pressure |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  |  |  |  |
|  |  | (Location of platform) |  |
| 3 04 030 | 0 27 031 | In direction of 0 degrees longitude, distance from the Earth’s centre |  |
|  | 0 28 031 | In direction 90 degrees East, distance from the Earth’s centre |  |
|  | 0 10 031 | In direction of the North Pole, distance from the Earth’s centre |  |
|  |  |  |  |
|  |  | (Speed of platform) |  |
| 3 04 031 | 0 01 041 | Absolute platform velocity – first component |  |
|  | 0 01 042 | Absolute platform velocity – second component |  |
|  | 0 01 043 | Absolute platform velocity – third component |  |
|  |  |  |  |
|  |  | (Cloud fraction) |  |
| 3 04 032 | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 02 154 | Satellite channel band width |  |
|  | 0 20 081 | Cloud amount in segment |  |
|  | 0 20 082 | Amount segment cloud free |  |
|  | 0 20 012 | Cloud type |  |
|  |  |  |  |
|  |  | (Clear sky radiance) |  |
| 3 04 033 | 0 02 152 | Satellite instrument used in data processing |  |
|  | 0 02 166 | Radiance type |  |
|  | 0 02 167 | Radiance computational method |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 02 154 | Satellite channel band width |  |
|  | 0 12 075 | Spectral radiance |  |
|  | 0 12 076 | Radiance |  |
|  | 0 12 063 | Brightness temperature |  |

*(continued)*

*(Category 04 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Latitude/longitude, solar elevation, number of layers) |  |
| 3 04 034 | 1 02 004 | Replicate 2 descriptors 4 times |  |
|  | 0 27 001 | Latitude (high accuracy) |  |
|  | 0 28 001 | Longitude (high accuracy) |  |
|  | 0 07 022 | Solar elevation |  |
|  | 0 05 043 | Field of view number |  |
|  | 0 20 010 | Cloud cover (total) |  |
|  | 0 20 016 | Pressure at top of cloud |  |
|  | 0 33 003 | Quality information |  |
|  | 0 10 040 | Number of retrieved layers |  |
|  |  |  |  |
|  |  | (All sky radiance data) |  |
| 3 04 035 | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 02 154 | Satellite channel band width |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 08 001 | Meteorological feature | Pixel type: clear |
|  | 0 12 063 | Brightness temperature | Clear |
|  | 0 08 001 | Meteorological feature | Pixel type: cloudy |
|  | 0 12 063 | Brightness temperature | Cloudy |
|  | 0 08 001 | Meteorological feature | Cancel |
|  | 0 08 003 | Vertical significance (satellite observations) | Low cloud |
|  | 0 12 063 | Brightness temperature | Low cloud |
|  | 0 08 003 | Vertical significance (satellite observations) | Mid cloud |
|  | 0 12 063 | Brightness temperature | Mid cloud |
|  | 0 08 003 | Vertical significance (satellite observations) | High cloud |
|  | 0 12 063 | Brightness temperature | High cloud |
|  | 0 08 003 | Vertical significance (satellite observations) | Cancel |
|  |  |  |  |
|  |  | (Cloud coverage) |  |
| 3 04 036 | 0 20 082 | Amount segment cloud free |  |
|  | 0 08 012 | Land/sea qualifier | Sea |
|  | 0 20 082 | Amount segment cloud free | Sea |
|  | 0 08 012 | Land/sea qualifier | Cancel |
|  | 0 20 081 | Cloud amount in segment |  |
|  | 0 08 003 | Vertical significance (satellite observations) | Low cloud |
|  | 0 20 081 | Cloud amount in segment | Low cloud |
|  | 0 08 003 | Vertical significance (satellite observations) | Mid cloud |
|  | 0 20 081 | Cloud amount in segment | Mid cloud |
|  | 0 08 003 | Vertical significance (satellite observations) | High cloud |
|  | 0 20 081 | Cloud amount in segment | High cloud |
|  | 0 08 003 | Vertical significance (satellite observations) | Cancel |
|  |  |  |  |
|  |  | (All sky radiance data) |  |
| 3 04 037 | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 02 154 | Satellite channel band width |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 08 011 | Meteorological feature | Pixel type: clear |
|  | 0 12 063 | Brightness temperature | Clear |
|  | 0 08 011 | Meteorological feature | Pixel type: cloudy |

*(continued)*

*(Category 04 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 04 037 | 0 12 063 | Brightness temperature | Cloudy |
| *(continued)* | 0 08 011 | Meteorological feature | Cancel |
|  | 0 08 003 | Vertical significance (satellite observations) | Low cloud |
|  | 0 12 063 | Brightness temperature | Low cloud |
|  | 0 08 003 | Vertical significance (satellite observations) | Mid cloud |
|  | 0 12 063 | Brightness temperature | Mid cloud |
|  | 0 08 003 | Vertical significance (satellite observations) | High cloud |
|  | 0 12 063 | Brightness temperature | High cloud |
|  |  |  |  |
|  |  | (Radiance in channel) |  |
| 3 04 039 | 2 01 136 | Change data width | Add 8 to width |
|  | 0 05 042 | Channel number |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 14 046 | Scaled radiance |  |
|  |  |  |  |
|  |  | (Principal component score in band) |  |
| 3 04 040 | 0 25 140 | Start channel |  |
|  | 0 25 141 | End channel |  |
|  | 0 40 026 | Score quantization factor |  |
|  | 0 40 016 | Residual RMS in band |  |
|  | 0 25 062 | Database identification |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 0 40 017 | Non-normalized principal component score |  |

Note: 3 04 035 is deprecated.

**Category 05 – Meteorological or hydrological sequences  
 common to hydrological observations**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (SADC-HYCOS single measurement) |  |
| 3 05 001 | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 13 060 | Total accumulated precipitation |  |
|  | 0 13 071 | Upstream water level |  |
|  |  |  |  |
|  |  | (SADC-HYCOS environmental measurement) |  |
| 3 05 002 | 3 01 012 | Hour, minute |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 13 003 | Relative humidity |  |
|  | 0 14 051 | Direct solar radiation integrated over last hour |  |
|  | 0 13 060 | Total accumulated precipitation |  |
|  | 0 13 072 | Downstream water level |  |
|  | 0 13 080 | Water pH |  |
|  | 0 13 081 | Water conductivity |  |
|  | 0 13 082 | Water temperature |  |
|  | 0 13 083 | Dissolved oxygen |  |
|  | 0 13 084 | Turbidity |  |
|  |  |  |  |
|  |  | (SADC-HYCOS measurement array definition) |  |
| 3 05 003 | 3 01 012 | Hour, minute | First single measurement minus increment |
|  | 0 04 065 | Short time increment | Time interval between measurements |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 05 001 | SADC-HYCOS single measurement |  |
|  |  |  |  |
|  |  | (SADC-HYCOS report) |  |
| 3 05 004 | 3 01 030 | Identification – with physical location |  |
|  | 3 05 002 | SADC-HYCOS environmental measurement |  |
|  | 3 05 003 | SADC-HYCOS measurement array definition |  |
|  |  |  |  |
|  |  | (MEDHYCOS measurement) |  |
| 3 05 006 | 0 13 072 | Downstream water level |  |
|  | 0 13 082 | Water temperature |  |
|  | 0 13 019 | Total precipitation past 1 hour |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 13 073 | Maximum water level |  |
|  | 0 13 060 | Total accumulated precipitation |  |
|  |  |  |  |
|  |  | (MEDHYCOS report) |  |
| 3 05 007 | 3 01 029 | Identification |  |
|  | 3 01 012 | Hour, minute | Time of first measurement |
|  | 0 04 065 | Short time increment | Time interval between measurements |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |

*(continued)*

*(Category 05 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 05 007 | 0 31 001 | Delayed descriptor replication factor |  |
| *(continued)* | 3 05 006 | MEDHYCOS measurement | Single measurement |
|  |  |  |  |
|  |  | (AOCHYCOS – Chad measurement) |  |
| 3 05 008 | 3 05 006 | MEDHYCOS measurement | Same as MEDHYCOS type measurement |
|  | 0 12 030 | Soil temperature | At –50 cm |
|  |  |  |  |
|  |  | (AOCHYCOS – Chad report) |  |
| 3 05 009 | 3 01 029 | Identification |  |
|  | 3 01 012 | Hour, minute | Time of first measurement |
|  | 0 04 065 | Short time increment | Time interval between measurements |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 05 008 | AOCHYCOS – Chad measurement | Single measurement |
|  |  |  |  |
|  |  | (MEDHYCOS-Measurement type 2) |  |
| 3 05 010 | 3 05 008 | AOCHYCOS-Chad measurement | Same as AOCHYCOS type measurement |
|  | 0 02 091 | Entry sensor 4/20 mA | No. 1 |
|  | 0 02 091 | Entry sensor 4/20 mA | No. 2 |
|  |  |  |  |
|  |  | (MEDHYCOS report type 2) |  |
| 3 05 011 | 3 01 029 | Identification |  |
|  | 3 01 012 | Hour, minute | Time of first measurement |
|  | 0 04 065 | Short time increment | Time interval between measurements |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 05 010 | MEDHYCOS-Measurement type 2 | Single measurement |
|  |  |  |  |
|  |  | (Meteorological parameters associated with hydrological data) |  |
| 3 05 016 | 0 14 021 | Global solar radiation, integrated over period specified |  |
|  | 0 07 004 | Pressure | Atmospheric pressure |
|  | 0 13 003 | Relative humidity |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 041 | Maximum wind gust speed |  |
|  | 0 11 043 | Maximum wind gust direction |  |
|  |  |  |  |
|  |  | (Water quality measurement) |  |
| 3 05 017 | 0 13 080 | Water pH |  |
|  | 0 13 081 | Water conductivity |  |
|  | 0 13 083 | Dissolved oxygen |  |
|  | 0 13 085 | Oxidation reduction potential (ORP) |  |
|  | 0 13 084 | Turbidity |  |

*(continued)*

*(Category 05 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (MEDHYCOS report with meteorology and water quality data) |  |
| 3 05 018 | 3 01 029 | Identification |  |
|  | 3 01 012 | Hour, minute | Time of first measurement |
|  | 0 04 065 | Short time increment | Hour increment |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 05 008 | AOCHYCOS-Chad measurement | Same as AOCHYCOS type measurement |
|  | 3 05 016 | Meteorological parameters associated with hydrological data |  |
|  | 3 05 017 | Water quality measurement |  |

**Category 06 – Meteorological or oceanographic sequences  
 common to oceanographic observations**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Depth, temperature) |  |
| 3 06 001 | 0 02 032 | Indicator for digitization |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 062 | Depth below sea/water surface |  |
|  | 0 22 042 | Sea/water temperature |  |
|  |  |  |  |
|  |  | (Current) |  |
| 3 06 002 | 0 02 031 | Duration and time of current measurement |  |
|  | 0 22 004 | Direction of current |  |
|  | 0 22 031 | Speed of current |  |
|  |  |  |  |
|  |  | (Surface wind and temperature) |  |
| 3 06 003 | 0 02 002 | Type of instrumentation for wind measurement |  |
|  | 0 11 011 | Wind direction at 10 m |  |
|  | 0 11 012 | Wind speed at 10 m |  |
|  | 0 12 004 | Air temperature at 2 m |  |
|  |  |  |  |
|  |  | (Depth, temperature, salinity) |  |
| 3 06 004 | 0 02 032 | Indicator for digitization |  |
|  | 0 02 033 | Method of salinity/depth measurement |  |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 062 | Depth below sea/water surface |  |
|  | 0 22 043 | Sea/water temperature |  |
|  | 0 22 062 | Salinity |  |
|  |  |  |  |
| 3 06 005 | 0 02 031 | Duration and time of current measurement |  |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 062 | Depth below sea/water surface |  |
|  | 0 22 004 | Direction of current |  |
|  | 0 22 031 | Speed of current |  |
|  |  |  |  |
|  |  | (Under water sounding (optional) parameters) |  |
| 3 06 006 | 3 06 003 | Surface wind and temperature |  |
|  | 3 06 002 | Current |  |
|  | 0 22 063 | Total water depth |  |
|  |  |  |  |
|  |  | (Buoy spare block parameters) |  |
| 3 06 007 | 0 01 012 | Direction of motion of moving observing platform |  |
|  | 0 01 014 | Platform drift speed (high precision) |  |
|  | 3 06 008 | Buoy instrumentation parameters |  |
|  | 0 04 024 | Time period or displacement |  |
|  | 0 27 003 | Alternate latitude (coarse accuracy) |  |
|  | 0 28 003 | Alternate longitude (coarse accuracy) |  |

*(continued)*

*(Category 06 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Buoy instrumentation parameters) |  |
| 3 06 008 | 0 02 034 | Drogue type |  |
|  | 0 02 035 | Cable length |  |
|  | 0 02 036 | Buoy type |  |
|  |  |  |  |
|  |  | (Sequence for representation of tide station identification, method of transmission, time the message is transmitted and reference time for reports in a time series) |  |
| 3 06 011 | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 01 075 | Tide station identification | Alphanumeric ID (5 characters) |
|  | 0 02 147 | Method of transmission to collection centre |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  |  |  |  |
|  |  | (Sequence for representation of sensor type, significant qualifier for sensor and status of operation) |  |
| 3 06 012 | 0 02 007 | Type of sensor for water level measuring instrument |  |
|  | 0 08 015 | Significant qualifier for sensor |  |
|  | 0 08 032 | Status of operation |  |
|  | 3 06 029 | Sequence for representation of tsunameter sampling information for water column heights in the time series report |  |
|  |  |  |  |
|  |  | (Sequence for representation of water level and residual in the time series) |  |
| 3 06 013 | 3 06 012 | Sequence for representation of sensor type, significant qualifier for sensor and status of operation |  |
|  | 3 01 011 | Year, month, day | Reference date for the time series |
|  | 3 01 013 | Hour, minute, second | Reference time for the time series |
|  | 0 22 120 | Tide station automated water level check |  |
|  | 0 22 121 | Tide station manual water level check |  |
|  | 0 04 015 | Time increment | Added to reset the reference time |
|  | 0 04 065 | Short time increment | Added to each data value in the time series |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 22 038 | Tidal elevation with respect to local chart datum |  |
|  | 0 22 040 | Meteorological residual tidal elevation (surge or offset) |  |
|  |  |  |  |
|  |  | (Sequence for representation of water level in the time series, similar to 3 06 013 but with no residual) |  |
| 3 06 014 | 3 06 012 | Sequence for representation of sensor type, significant qualifier for sensor and status of operation |  |
|  | 3 01 011 | Year, month, day | Reference date for the time series |
|  | 3 01 013 | Hour, minute, second | Reference time for the time series |

*(continued)*

*(Category 06 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 06 014 | 0 22 120 | Tide station automated water level check |  |
| *(continued)* | 0 22 121 | Tide station manual water level check |  |
|  | 0 04 015 | Time increment | Added to reset the reference time |
|  | 0 04 065 | Short time increment | Added to each data value in the time series |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 22 038 | Tidal elevation with respect to local chart datum |  |
|  |  |  |  |
|  |  | (Sequence for representation of ancillary meteorological data associated with water level data) |  |
| 3 06 016 | 3 01 011 | Year, month, day | Reference date for the time series |
|  | 3 01 013 | Hour, minute, second | Reference time for the time series |
|  | 0 10 004 | Pressure | Station level |
|  | 0 10 051 | Pressure reduced to mean sea level |  |
|  | 3 02 032 | Temperature and humidity data |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 02 002 | Type of instrumentation for wind measurement |  |
|  | 0 08 021 | Time significance | = 2 Time averaged |
|  | 0 04 025 | Time period or displacement | E.g. = 1 for 1 minute,  = 10 for 10 minutes |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 04 025 | Time period or displacement | In minutes |
|  | 0 11 043 | Maximum wind gust direction |  |
|  | 0 11 041 | Maximum wind gust speed |  |
|  | 0 25 026 | Battery voltage (large range) | AWS battery voltage |
|  | 0 12 060 | AWS enclosure internal temperature |  |
|  |  |  |  |
|  |  | (Subsurface temperature profile (high accuracy/precision) with quality flags) |  |
| 3 06 017 | 0 02 032 | Indicator for digitization | = 0 Fixed sensor depths |
|  | 0 08 034 | Temperature/salinity measurement qualifier |  |
|  | 1 06 000 | Delayed replication of 6 descriptors |  |
|  | 0 31 002 | Extended delayed descriptor replication factor | Number of depths |
|  | 0 07 065 | Water pressure | In Pa |
|  | 0 08 080 | Qualifier for GTSPP quality flag |  |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 22 045 | Sea/water temperature | In K to 3 decimal places |
|  | 0 08 080 | Qualifier for GTSPP quality flag |  |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 08 034 | Temperature/salinity measurement qualifier | Set to missing (cancel) |

*(continued)*

*(Category 06 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Subsurface temperature profile (high accuracy/precision) with quality flags) |  |
| 3 06 018 | 0 02 032 | Indicator for digitization | = 0 Fixed sensor depths |
|  | 0 08 034 | Temperature/salinity measurement qualifier |  |
|  | 1 09 000 | Delayed replication of 9 descriptors |  |
|  | 0 31 002 | Extended delayed descriptor replication factor | Number of depths |
|  | 0 07 065 | Water pressure | In Pa |
|  | 0 08 080 | Qualifier for GTSPP quality flag |  |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 22 045 | Sea/water temperature | In K to 3 decimal places |
|  | 0 08 080 | Qualifier for GTSPP quality flag |  |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 22 064 | Salinity |  |
|  | 0 08 080 | Qualifier for GTSPP quality flag |  |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 08 034 | Temperature/salinity measurement qualifier | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Tide report identification, water level checks, time increments) |  |
| 3 06 019 | 0 01 075 | Tide station identification | Alphanumeric |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 0 22 042 | Sea/water temperature |  |
|  | 0 22 120 | Tide station automated water level check |  |
|  | 0 22 121 | Tide station manual water level check |  |
|  | 0 04 015 | Time increment (see Note 1) | Minutes |
|  | 0 04 065 | Short time increment |  |
|  |  |  |  |
|  |  | (Tide report identification, water level checks, time period or displacement, time increment) (see Note 2) |  |
| 3 06 020 | 0 01 075 | Tide station identification | Alphanumeric |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 0 22 042 | Sea/water temperature |  |
|  | 0 22 120 | Tide station automated water level check |  |
|  | 0 22 121 | Tide station manual water level check |  |
|  | 0 04 075 | Short time period or displacement |  |
|  | 0 04 065 | Short time increment |  |
|  |  |  |  |
|  |  | (Meteorological parameters in tide station) |  |
| 3 06 021 | 0 01 075 | Tide station identification | Alphanumeric |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 0 22 122 | Tide station automated meteorological data check |  |
|  | 0 22 123 | Tide station manual meteorological data check |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 3 03 002 | Wind at pressure level |  |

*(continued)*

*(Category 06 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Tidal elevation) |  |
| 3 06 022 | 0 01 075 | Tide station identification |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 0 22 038 | Tidal elevation with respect to local chart datum |  |
|  | 0 22 039 | Meteorological residual tidal elevation (surge or offset) |  |
|  |  |  |  |
| 3 06 023 | 0 01 015 | Station or site name |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 0 22 038 | Tidal elevation with respect to local chart datum |  |
|  | 0 22 039 | Meteorological residual tidal elevation (surge or offset) |  |
|  | 0 22 120 | Tide station automated water level check |  |
|  | 0 22 121 | Tide station manual water level check |  |
|  |  |  |  |
|  |  | (Tide elevation series) (see Note 3) |  |
| 3 06 024 | 3 06 020 | Tide report identification, water level checks, time period or displacement, time increment |  |
|  | 1 02 006 | Replicate 2 descriptors 6 times |  |
|  | 0 22 038 | Tidal elevation with respect to local chart datum |  |
|  | 0 22 039 | Meteorological residual tidal elevation (surge or offset) |  |
|  |  |  |  |
|  |  | (Tide elevation series) |  |
| 3 06 025 | 3 06 019 | Tide report identification, water level checks, time increments |  |
|  | 1 02 006 | Replicate 2 descriptors 6 times |  |
|  | 0 22 038 | Tidal elevation with respect to local chart datum |  |
|  | 0 22 039 | Meteorological residual tidal elevation (surge or offset) |  |
|  |  |  |  |
|  |  | (Sequence for representation of DART buoy identification, transmitter ID, type of tsunameter and the time the message is transmitted to the ground system) |  |
| 3 06 027 | 0 01 005 | Buoy/platform identifier |  |
|  | 0 01 052 | Platform transmitter ID |  |
|  | 0 02 047 | Deep-ocean tsunameter type |  |
|  | 3 01 011 | Year, month, day | Time the message is transmitted to the ground system |
|  | 3 01 013 | Hour, minute, second |  |
|  |  |  |  |
|  |  | (Sequence for representation of time of observation and DART buoy position daily report) |  |
| 3 06 028 | 3 06 027 | Sequence for representation of DART buoy identification, transmitter ID, type of tsunameter and the time the message is transmitted to the ground system |  |
|  | 3 01 011 | Year, month, day | Observation time |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |

*(continued)*

*(Category 06 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Sequence for representation of tsunameter sampling information for water column heights in the time series report) |  |
| 3 06 029 | 0 25 170 | Sampling interval (time) | Seconds |
|  | 0 25 171 | Sample averaging period | Seconds |
|  | 0 25 172 | Number of samples |  |
|  |  |  |  |
|  |  | (Sequence for representation of DART buoy standard hourly report) |  |
| 3 06 030 | 3 06 027 | Sequence for representation of DART buoy identi- fication, transmitter ID, type of tsunameter and the time the message is transmitted to the ground system |  |
|  | 3 06 029 | Sequence for representation of tsunameter sampling information for water column heights in the time series report |  |
|  | 1 11 000 | Delayed replication of 11 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 33 002 | Quality information | Message status |
|  | 3 01 011 | Year, month, day | Reference date/time for the time series |
|  | 3 01 013 | Hour, minute, second |  |
|  | 0 25 025 | Battery voltage | BPR CPU |
|  | 0 25 025 | Battery voltage | Acoustic modem DSP |
|  | 0 25 026 | Battery voltage (large range) | Acoustic modem |
|  | 0 22 185 | BPR transmission count |  |
|  | 0 04 015 | Time increment | Added to reset the reference time |
|  | 0 04 065 | Short time increment | Added to each data value in the time series |
|  | 1 01 004 | Replicate 1 descriptor 4 times |  |
|  | 0 22 182 | Water column height |  |
|  |  |  |  |
|  |  | (Sequence for representation of DART buoy tsunami event reports and extended tsunami event reports) |  |
| 3 06 031 | 3 06 027 | Sequence for representation of DART buoy identification, transmitter ID, type of tsunameter and the time the message is transmitted to the ground system |  |
|  | 3 06 029 | Sequence for representation of tsunameter sampling information for water column heights in the time series report |  |
|  | 0 01 053 | Tsunameter report sequence number triggered by a tsunami event |  |
|  | 0 33 002 | Quality information | Message status |
|  | 3 01 011 | Year, month, day | Time when tsunami is detected |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 011 | Year, month, day | Reference date/time for the time series |
|  | 3 01 013 | Hour, minute, second |  |
|  | 0 22 185 | BPR transmission count |  |

*(continued)*

*(Category 06 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 06 031 *(continued)* | 0 22 182 | Water column height | Determination of actual value reported in the time series |
|  | 0 04 016 | Time increment | Added to reset the reference time |
|  | 0 04 066 | Short time increment | Added to each data value in the time series |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 22 184 | Water column height deviation from the reference value |  |
|  |  |  |  |
|  |  | (Surface salinity) |  |
| 3 06 033 | 0 02 033 | Method of salinity/depth measurement |  |
|  | 0 07 063 | Depth below sea/water surface (cm) |  |
|  | 0 22 064 | Salinity |  |
|  |  |  |  |
|  |  | (Surface current) |  |
| 3 06 034 | 0 02 031 | Duration and time of current measurement |  |
|  | 0 03 010 | Method of sea/water current measurement |  |
|  | 0 02 040 | Method of removing velocity and motion of platform from current |  |
|  | 0 22 005 | Direction of sea-surface current |  |
|  | 0 22 032 | Speed of sea-surface current |  |
|  |  |  |  |
|  |  | (Temperature and salinity profile) |  |
| 3 06 035 | 1 12 000 | Delayed replication of 12 descriptors |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 0 07 062 | Depth below sea/water surface | In metres |
|  | 0 08 080 | Qualifier for GTSPP quality flag | = 13 Depth at a level |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 07 065 | Water pressure |  |
|  | 0 08 080 | Qualifier for GTSPP quality flag | = 10 Pressure at a level |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 22 043 | Sea/water temperature |  |
|  | 0 08 080 | Qualifier for GTSPP quality flag | = 11 Temperature at a level |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 22 064 | Salinity | = 12 Salinity at a level |
|  | 0 08 080 | Qualifier for GTSPP quality flag |  |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  |  |  |  |
|  |  | (Current profile) |  |
| 3 06 036 | 1 12 000 | Delayed replication of 12 descriptors |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 0 07 062 | Depth below sea/water surface | In metres |
|  | 0 08 080 | Qualifier for GTSPP quality flag | = 13 Depth at a level |
|  | 0 33 050 | Global GTSPP quality flag |  |

*(continued)*

*(Category 06 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 06 036 | 0 07 065 | Water pressure |  |
| *(continued)* | 0 08 080 | Qualifier for GTSPP quality flag | = 10 Pressure at a level |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 22 031 | Speed of current |  |
|  | 0 08 080 | Qualifier for GTSPP quality flag | = 14 Current speed at a level |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 22 004 | Direction of current |  |
|  | 0 08 080 | Qualifier for GTSPP quality flag | = 15 Current direction at a level |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  |  |  |  |
|  |  | (Dissolved oxygen profile data) |  |
| 3 06 037 | 1 09 000 | Delayed replication of 9 descriptors |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 0 07 062 | Depth below sea / water surface |  |
|  | 0 08 080 | Qualifier for GTSPP quality flag | = 13 Depth at a level |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 07 065 | Water pressure |  |
|  | 0 08 080 | Qualifier for GTSPP quality flag | = 10 Pressure at a level |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 22 188 | Dissolved oxygen |  |
|  | 0 08 080 | Qualifier for GTSPP quality flag | = 16 Dissolved oxygen at a level |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  |  |  |  |
|  |  | (Sequence for representation of standard surface marine meteorological observations from moored buoys) |  |
| 3 06 038 | 0 10 004 | Pressure |  |
|  | 0 10 051 | Pressure reduced to mean sea level |  |
|  | 0 07 033 | Height of sensor above water surface | Height of air temperature/humidity sensor |
|  | 0 12 101 | Temperature/air temperature | At observation height |
|  | 0 12 103 | Dewpoint temperature | At observation height |
|  | 0 13 003 | Relative humidity | With respect to water at all temperatures |
|  | 0 07 033 | Height of sensor above water surface | Height of wind speed sensor |
|  | 0 08 021 | Time significance | = 2 Time averaged |
|  | 0 04 025 | Time period or displacement | Period over which winds are averaged |
|  | 0 11 001 | Wind direction | At observation height |
|  | 0 11 002 | Wind speed | At observation height |
|  | 0 08 021 | Time significance | Set to missing (cancel) |

*(continued)*

*(Category 06 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 06 038 *(continued)* | 0 04 025 | Time period or displacement | Time period over which maximum gust observed |
|  | 0 11 041 | Maximum wind gust speed |  |
|  | 0 04 025 | Time period or displacement | Set to missing (cancel) |
|  | 0 07 033 | Height of sensor above water surface | Set to missing (cancel) |
|  | 0 02 005 | Precision of temperature observation |  |
|  | 0 07 063 | Depth below sea/water surface (cm) |  |
|  | 0 22 049 | Sea-surface temperature |  |
|  |  |  |  |
|  |  | (Sequence for representation of basic wave measurements) |  |
| 3 06 039 | 0 22 078 | Duration of wave record |  |
|  | 0 22 070 | Significant wave height |  |
|  | 0 22 073 | Maximum wave height |  |
|  | 0 22 074 | Average wave period |  |
|  | 0 22 071 | Spectral peak wave period |  |
|  | 0 22 076 | Direction from which dominant waves are coming |  |
|  | 0 22 077 | Directional spread of dominant wave |  |
|  |  |  |  |
|  |  | (Sequence for representation of detailed spectral wave measurements) |  |
| 3 06 040 | 0 22 078 | Duration of wave record |  |
|  | 0 22 082 | Maximum non-directional spectral wave density |  |
|  | 1 06 000 | Delayed replication of 6 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor | Number of frequency bins |
|  | 0 22 080 | Waveband central frequency |  |
|  | 0 22 069 | Spectral wave density |  |
|  | 0 22 086 | Mean direction from which waves are coming |  |
|  | 0 22 087 | Principal direction from which waves are coming |  |
|  | 0 22 088 | First normalized polar coordinate from Fourier coefficients |  |
|  | 0 22 089 | Second normalized polar coordinate from Fourier coefficients |  |
|  |  |  |  |
|  |  | (Depth and temperature profile (high accuracy/  precision)) |  |
| 3 06 041 | 0 02 032 | Indicator for digitization | = 0 Fixed sensor depths |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor | Number of depths |
|  | 0 07 062 | Depth below sea/water surface |  |
|  | 0 22 043 | Sea/water temperature |  |

*(continued)*

*(Category 06 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Wind measurement from drifting buoy) |  |
| 3 06 042 | 0 02 169 | Anemometer type | E.g. = 2 WOTAN, = 3 Sonic anemometer |
|  | 0 07 033 | Height of sensor above water surface | Height of anemometer above water surface or effective height for WOTAN |
|  | 0 08 021 | Time significance | = 2 Time averaged |
|  | 0 04 025 | Time period or displacement | Averaging period in minutes |
|  | 0 11 001 | Wind direction | At measurement height |
|  | 0 11 002 | Wind speed | At measurement height |
|  |  |  |  |
|  |  | (Marine biogeochemical and radiation observations) |  |
| 3 06 043 | 0 41 001 | pCO2 |  |
|  | 0 08 043 | Atmospheric chemical or physical constituent type | Set to 3 (carbon dioxide) |
|  | 0 15 028 | Mole fraction of atmospheric constituent/pollutant in dry air |  |
|  | 0 08 043 | Atmospheric chemical or physical constituent type | Cancel |
|  | 0 13 080 | Water pH |  |
|  | 0 41 005 | Turbidity |  |
|  | 0 41 003 | Dissolved nitrates |  |
|  | 0 22 188 | Dissolved oxygen |  |
|  | 0 41 002 | Fluorescence |  |
|  | 1 06 000 | Delayed replication of 6 descriptors |  |
|  | 0 31 000 | Short delayed replication factor |  |
|  | 0 04 024 | Time period or displacement (hours) | Set to –1 (preceding hour) |
|  | 0 14 002 | Long-wave radiation, integrated over period specified | Downwelling long-wave radiation |
|  | 0 14 002 | Long-wave radiation, integrated over period specified | Upwelling long-wave radiation |
|  | 0 14 012 | Net long-wave radiation, integrated over period specified |  |
|  | 0 14 004 | Short-wave radiation, integrated over period specified |  |
|  | 0 04 024 | Time period or displacement (hours) | Cancel |

Notes:

(1) Range of value for parameter 0 04 015 limited from –99 to 99; CREX common sequence D 06 019 being the original sequence with 2 characters only for the corresponding descriptor.

(2) This sequence is deprecated because of incorrect usage of descriptor 0 04 075; sequence 3 06 019 should be used instead.

(3) This sequence is deprecated because of incorrect usage of descriptor 0 04 075 in sequence 3 06 020; sequence 3 06 025 should be used instead.

**Category 07 – Surface report sequences (land)**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Low altitude station) |  |
| 3 07 001 | 3 01 031 | Identification and type of station, date/time, location (high accuracy), height of station |  |
|  | 3 02 011 | Low altitude station | Basic surface report |
|  |  |  |  |
|  |  | (Low altitude station) |  |
| 3 07 002 | 3 01 032 | Identification and type of station, date/time, location (coarse accuracy), height of station |  |
|  | 3 02 011 | Low altitude station | Basic surface report |
|  |  |  |  |
|  |  | (Low altitude station) |  |
| 3 07 003 | 3 07 001 | Low altitude station | Location (high accuracy) and basic report |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 02 005 | Cloud layer |  |
|  |  |  |  |
|  |  | (Low altitude station) |  |
| 3 07 004 | 3 07 002 | Low altitude station | Location (coarse accuracy) and basic report |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 02 005 | Cloud layer |  |
|  |  |  |  |
|  |  | (Low altitude station) |  |
| 3 07 005 | 3 07 001 | Low altitude station | Location (high accuracy) and basic report |
|  | 1 01 004 | Replicate 1 descriptor 4 times |  |
|  | 3 02 005 | Cloud layer | 4 layers |
|  |  |  |  |
|  |  | (Low altitude station) |  |
| 3 07 006 | 3 07 002 | Low altitude station | Location (coarse accuracy) and basic report |
|  | 1 01 004 | Replicate 1 descriptor 4 times |  |
|  | 3 02 005 | Cloud layer | 4 layers |
|  |  |  |  |
|  |  | (High altitude station) |  |
| 3 07 007 | 3 01 031 | Identification and type of station, date/time, location (high accuracy), height of station |  |
|  | 3 02 012 | High altitude station | Basic surface report |
|  |  |  |  |
|  |  | (High altitude station) |  |
| 3 07 008 | 3 01 032 | Identification and type of station, date/time, location (coarse accuracy), height of station |  |
|  | 3 02 012 | High altitude station | Basic surface report |

*(continued)*

*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 009 | 3 01 031 | Identification and type of station, date/time, location (high accuracy), height of station |  |
|  | 3 02 013 | Basic surface report |  |
|  |  |  |  |
|  |  | (Main part of data for representation of METAR/SPECI code in BUFR) |  |
| 3 07 011 | 0 01 063 | ICAO location indicator |  |
|  | 0 02 001 | Type of station |  |
|  | 3 01 011 | Year, month, day | YY |
|  | 3 01 012 | Hour, minute | GG, gg |
|  | 3 01 024 | Latitude/longitude (coarse accuracy), height of station |  |
|  | 0 07 006 | Height above station | Height of an anemometer |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 016 | Extreme counterclockwise wind direction of a variable wind |  |
|  | 0 11 017 | Extreme clockwise wind direction of a variable wind |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 11 041 | Maximum wind gust speed |  |
|  | 0 07 006 | Height above station | Height of a thermometer |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 12 003 | Dewpoint temperature |  |
|  | 0 10 052 | Altimeter setting (QNH) |  |
|  | 0 20 009 | General weather indicator (TAF/METAR) |  |
|  |  |  |  |
|  |  | (Horizontal visibility) |  |
| 3 07 012 | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor | Up to 3 |
|  | 0 08 023 | First-order statistics |  |
|  | 0 05 021 | Bearing or azimuth | Direction of visibility observed |
|  | 0 20 001 | Horizontal visibility |  |
|  |  |  |  |
|  |  | (Runway visual range) |  |
| 3 07 013 | 1 06 000 | Delayed replication of 6 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor | Up to 4 |
|  | 0 01 064 | Runway designator |  |
|  | 0 08 014 | Qualifier for runway visual range |  |
|  | 0 20 061 | Runway visual range (RVR) |  |
|  | 0 08 014 | Qualifier for runway visual range |  |
|  | 0 20 061 | Runway visual range (RVR) |  |
|  | 0 20 018 | Tendency of runway visual range |  |
|  |  |  |  |
|  |  | (Significant present or forecast weather) |  |
| 3 07 014 | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor | Up to 3 |
|  | 0 20 019 | Significant present or forecast weather |  |

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*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Clouds group(s)) |  |
| 3 07 015 | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 02 005 | Cloud layer | NsNsNs, CC, hshshs |
|  | 0 20 002 | Vertical visibility |  |
|  |  |  |  |
|  |  | (Significant recent weather phenomena) |  |
| 3 07 016 | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor | Up to 3 |
|  | 0 20 020 | Significant recent weather phenomena |  |
|  |  |  |  |
|  |  | (Wind shear on runway(s)) |  |
| 3 07 017 | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 11 070 | Designator of the runway affected by wind shear (including ALL) |  |
|  |  |  |  |
|  |  | (Trend-type landing forecast) |  |
| 3 07 018 | 0 08 016 | Change qualifier of a trend-type forecast or an aerodrome forecast |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor | Up to 2 |
|  | 0 08 017 | Qualifier of the time when the forecast change is expected | FM, TL, AT |
|  | 3 01 012 | Hour, minute | GG, gg |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor | Up to 1 |
|  | 0 07 006 | Height above station |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 11 041 | Maximum wind gust speed |  |
|  | 0 20 009 | General weather indicator (TAF/METAR) |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor | Up to 1 |
|  | 0 20 001 | Horizontal visibility |  |
|  | 3 07 014 | Significant present or forecast weather | w´w´ |
|  |  |  |  |
|  |  | (Short METAR/SPECI) |  |
| 3 07 020 | 3 07 011 | Main part of data for representation of METAR/SPECI code in BUFR |  |
|  | 3 07 014 | Significant present or forecast weather | w´w´ |
|  | 3 07 016 | Significant recent weather phenomena | REw´w´ |
|  |  |  |  |
|  |  | (Total sequence for representation of METAR/SPECI code in BUFR) |  |
| 3 07 021 | 3 07 011 | Main part of data for representation of METAR/SPECI code in BUFR |  |
|  | 3 07 012 | Horizontal visibility | DvVVVV |
|  | 3 07 013 | Runway visual range | DRDR/VRVRVRVR |

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*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 021 | 3 07 014 | Significant present or forecast weather | w´w´ |
| *(continued)* | 3 07 015 | Clouds group(s) |  |
|  | 3 07 016 | Significant recent weather phenomena | REw´w´ |
|  | 3 07 017 | Wind shear on runway(s) |  |
|  | 3 07 018 | Trend-type landing forecast |  |
|  | 3 07 015 | Clouds group(s) |  |
|  |  |  |  |
|  |  | (Ground-based GNSS data) |  |
| 3 07 022 | 0 01 015 | Station or site name |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 022 | Latitude/longitude (high accuracy), height of station |  |
|  | 0 08 021 | Time significance | = 23 Monitoring period |
|  | 0 04 025 | Time period or displacement |  |
|  | 0 10 004 | Pressure |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 13 003 | Relative humidity |  |
|  | 0 33 038 | Quality flags for ground-based GNSS data |  |
|  | 0 08 022 | Total number (with respect to accumulation or average) | Number of GNSS satellites used |
|  | 1 06 025 | Replicate 6 descriptors 25 times |  |
|  | 0 02 020 | Satellite classification |  |
|  | 0 01 050 | Platform transmitter ID number |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 021 | Elevation |  |
|  | 0 15 031 | Atmospheric path delay in satellite signal |  |
|  | 0 15 032 | Estimated error in atmospheric path delay |  |
|  | 0 08 060 | Sample scanning mode significance | = 5 North/South |
|  | 0 15 033 | Difference in path delays for limb views at extremes of scan |  |
|  | 0 15 034 | Estimated error in path delay difference |  |
|  | 0 08 060 | Sample scanning mode significance | = 6 East/West |
|  | 0 15 033 | Difference in path delays for limb views at extremes of scan |  |
|  | 0 15 034 | Estimated error in path delay difference |  |
|  | 0 15 035 | Component of zenith path delay due to water vapour |  |
|  | 2 01 131 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 0 13 016 | Precipitable water |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 15 011 | Log10 of integrated electron density |  |
|  |  |  |  |
|  |  | (Ozone data – single observation) |  |
| 3 07 030 | 0 15 001 | Total ozone |  |
|  | 0 15 002 | Air mass (slant path at 22 km) |  |

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*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Ozone data – averaged observations) |  |
| 3 07 031 | 0 08 022 | Total number (with respect to accumulation or average) | Number of measurements |
|  | 0 08 023 | First-order statistics | = 4 Mean value |
|  | 0 15 001 | Total ozone | Average value of ozone measurement |
|  | 0 08 023 | First-order statistics | = 9 Best estimate of standard deviation |
|  | 0 15 001 | Total ozone | Best estimate of standard deviation of the ozone measurement |
|  | 0 08 023 | First-order statistics | = 11 Harmonic mean |
|  | 0 15 002 | Air mass (slant path at 22 km) | Harmonic mean value of the air-mass |
|  |  |  |  |
|  |  | (Total ozone measurement from a Brewer ground-based spectrophotometer obtained from a single observation) |  |
| 3 07 041 | 3 01 001 | WMO block and station numbers |  |
|  | 0 01 015 | Station or site name |  |
|  | 3 01 024 | Latitude/longitude (coarse accuracy), height of station |  |
|  | 3 01 011 | Year, month, day | Ozone measurement |
|  | 3 01 012 | Hour, minute | Ozone measurement |
|  | 3 01 070 | Ozone instrumentation – Brewer spectrophotometer |  |
|  | 3 07 030 | Ozone data – single observation |  |
|  |  |  |  |
|  |  | (Total ozone measurement from a Brewer ground-based spectrophotometer obtained from averaged observations) |  |
| 3 07 042 | 3 01 001 | WMO block and station numbers |  |
|  | 0 01 015 | Station or site name |  |
|  | 3 01 024 | Latitude/longitude (coarse accuracy), height of station |  |
|  | 3 01 011 | Year, month, day | Ozone measurement |
|  | 3 01 012 | Hour, minute | Ozone measurement |
|  | 0 08 021 | Time significance | = 8 Ensemble mean |
|  | 0 04 025 | Time period or displacement | Time period (minutes) for the computation of the average |
|  | 3 01 070 | Ozone instrumentation – Brewer spectrophotometer |  |
|  | 3 07 031 | Ozone data – averaged observations |  |
|  |  |  |  |
|  |  | (Total ozone measurement from a Dobson ground-based spectrophotometer obtained from a single observation) |  |
| 3 07 043 | 3 01 001 | WMO block and station numbers |  |
|  | 0 01 015 | Station or site name |  |
|  | 3 01 024 | Latitude/longitude (coarse accuracy), height of station |  |
|  | 3 01 011 | Year, month, day | Ozone measurement |
|  | 3 01 012 | Hour, minute | Ozone measurement |
|  | 3 01 074 | Ozone instrumentation – Dobson spectrophotometer |  |
|  | 3 07 030 | Ozone data – single observation |  |

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*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Total ozone measurement from a Dobson ground-based spectrophotometer obtained from averaged observations) |  |
| 3 07 044 | 3 01 001 | WMO block and station numbers |  |
|  | 0 01 015 | Station or site name |  |
|  | 3 01 024 | Latitude/longitude (coarse accuracy), height of station |  |
|  | 3 01 011 | Year, month, day | Ozone measurement |
|  | 3 01 012 | Hour, minute | Ozone measurement |
|  | 0 08 021 | Time significance | = 8 Ensemble mean |
|  | 0 04 025 | Time period or displacement | Time period (minutes) for the computation of the average |
|  | 3 01 074 | Ozone instrumentation – Dobson spectrophotometer |  |
|  | 3 07 031 | Ozone data – averaged observations |  |
|  |  |  |  |
|  |  | (Main part of METAR/SPECI), replacing 3 07 011 |  |
| 3 07 045 | 0 01 063 | ICAO location indicator | CCCC |
|  | 0 08 079 | Product status | METAR SPECI COR |
|  | 0 02 001 | Type of station | AUTO |
|  | 3 01 011 | Year, month, day | YY |
|  | 3 01 012 | Hour, minute | GGgg |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 0 07 031 | Height of barometer above mean sea level |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | = 10 m (if the actual value is not available) |
|  | 0 11 001 | Wind direction | ddd |
|  | 0 11 016 | Extreme counterclockwise wind direction of a variable wind | dndndn |
|  | 0 11 017 | Extreme clockwise wind direction of a variable wind | dxdxdx |
|  | 0 08 054 | Qualifier for wind speed or wind gusts | P |
|  | 0 11 083 | Wind speed (see Note 1) | ff – km/h |
|  | 0 11 084 | Wind speed (see Note 1) | ff – kt |
|  | 0 11 002 | Wind speed (see Note 1) | ff – m/s |
|  | 0 08 054 | Qualifier for wind speed or wind gusts | P |
|  | 0 11 085 | Maximum wind gust speed (see Note 2) | fmfm – km/h |
|  | 0 11 086 | Maximum wind gust speed (see Note 2) | fmfm – kt |
|  | 0 11 041 | Maximum wind gust speed (see Note 2) | fmfm – m/s |
|  | 0 08 054 | Qualifier for wind speed or wind gusts | Set to missing (cancel) |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | = 2 m (if the actual value is not available) |
|  | 0 12 023 | Temperature | T´T´ – Celsius |
|  | 0 12 024 | Dewpoint temperature | T´dT´d – Celsius |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 0 10 052 | Altimeter setting (QNH) | QPHPHPHPH |
|  | 0 20 009 | General weather indicator (TAF/METAR) | CAVOK |

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*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (METAR/SPECI visibility) |  |
| 3 07 046 | 0 20 060 | Prevailing horizontal visibility | VVVV or VVVVNDV |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor | Up to 2 |
|  | 0 05 021 | Bearing or azimuth | Direction of minimum visibility observed Dv |
|  | 0 20 059 | Minimum horizontal visibility | VNVNVNVN |
|  |  |  |  |
|  |  | (METAR/SPECI/TAF clouds), replacing 3 07 015 |  |
| 3 07 047 | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 002 | Vertical significance (surface observations) |  |
|  | 0 20 011 | Cloud amount | NsNsNs |
|  | 0 20 012 | Cloud type | CC |
|  | 0 20 013 | Height of base of cloud | hshshs – m |
|  | 0 20 092 | Height of base of cloud | hshshs – ft |
|  | 0 20 002 | Vertical visibility | VVhshshs – m |
|  | 0 20 091 | Vertical visibility | VVhshshs – ft |
|  |  |  |  |
|  |  | (Trend type forecast), replacing 3 07 018 |  |
| 3 07 048 | 0 08 016 | Change qualifier of a trend-type forecast or an aerodrome forecast | TTTTT NOSIG |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor | = 0, 1 or 2 |
|  | 0 08 017 | Qualifier of the time when the forecast change is expected | TT |
|  | 3 01 012 | Hour, minute | GGgg |
|  | 1 12 000 | Delayed replication of 12 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor | = 0 or 1 |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | = 10 m (if the actual value is not available) |
|  | 0 11 001 | Wind direction | ddd |
|  | 0 08 054 | Qualifier for wind speed or wind gusts | P |
|  | 0 11 083 | Wind speed (see Note 1) | ff – km/h |
|  | 0 11 084 | Wind speed (see Note 1) | ff – kt |
|  | 0 11 002 | Wind speed (see Note 1) | ff – m/s |
|  | 0 08 054 | Qualifier for wind speed or wind gusts | P |
|  | 0 11 085 | Maximum wind gust speed (see Note 2) | fmfm – km/h |
|  | 0 11 086 | Maximum wind gust speed (see Note 2) | fmfm – kt |
|  | 0 11 041 | Maximum wind gust speed (see Note 2) | fmfm – m/s |
|  | 0 08 054 | Qualifier for wind speed or wind gusts | Set to missing (cancel) |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 0 20 009 | General weather indicator (TAF/METAR) | CAVOK NSW NSC |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor | = 0 or 1 |
|  | 0 20 060 | Prevailing horizontal visibility | VVVV |
|  | 3 07 014 | Significant present and forecast weather | Weather intensity and phenomena w´w´ |
|  | 3 07 047 | METAR/SPECI/TAF clouds, replacing 3 07 015 | NsNsNshshshs |

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*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Sea conditions) |  |
| 3 07 049 | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor | = 0 or 1 |
|  | 0 22 043 | Sea/water temperature | TsTs |
|  | 0 22 021 | Height of waves | S´ |
|  |  |  |  |
|  |  | (Runway state) |  |
| 3 07 050 | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor | = 0 or 1 |
|  | 0 20 085 | General condition of runway | SNOCLO |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 01 064 | Runway designator | DRDR |
|  | 0 20 085 | General condition of runway | CLRD// |
|  | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 01 064 | Runway designator | DRDR |
|  | 0 20 086 | Runway deposits | ER |
|  | 0 20 087 | Runway contamination | CR |
|  | 0 20 088 | Depth of runway deposits | eReR |
|  | 0 20 089 | Runway friction coefficient | BRBR |
|  |  |  |  |
|  |  | (Full METAR/SPECI), replacing 3 07 021 |  |
| 3 07 051 | 3 07 045 | Main part of METAR/SPECI, replacing 3 07 011 |  |
|  | 3 07 046 | METAR/SPECI visibility | VVVV or VVVVNDV VNVNVNVNDV |
|  | 3 07 013 | Runway visual range | RDRDR/VRVRVRVR |
|  | 3 07 014 | Significant present and forecast weather | Weather intensity and phenomena w´w´ |
|  | 3 07 047 | METAR/SPECI/TAF clouds, replacing 3 07 015 | NsNsNshshshs |
|  | 3 07 016 | Significant recent weather phenomena | REw´w´ |
|  | 3 07 017 | Wind shear on runway(s) | WS RDRDR |
|  | 3 07 049 | Sea conditions | WTsTs/SS´ |
|  | 3 07 050 | Runway state | RDRDR/ERCReReRBRBR |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor | = 0 to 3 normally |
|  | 3 07 048 | Trend type forecast, replacing 3 07 018 |  |
|  |  |  |  |
|  |  | (Aerodrome forecast identification and time interval) |  |
| 3 07 052 | 0 01 063 | ICAO location indicator | CCCC |
|  | 0 08 039 | Time significance (aviation forecast) | = 0 Issue time of forecast |
|  | 3 01 011 | Year, month, day | YY |
|  | 3 01 012 | Hour, minute | GGgg |
|  | 0 08 079 | Product status | COR CNL AMD NIL |

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*(Category 07 – continued)*

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| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 052 *(continued)* | 0 08 039 | Time significance (aviation forecast) | = 1 Time of commencement of period of the forecast |
|  | 3 01 011 | Year, month, day | Y1Y1 |
|  | 3 01 012 | Hour, minute | G1G1 |
|  | 0 08 039 | Time significance (aviation forecast) | = 2 Time of ending of period of the forecast |
|  | 3 01 011 | Year, month, day | Y2Y2 |
|  | 3 01 012 | Hour, minute | G2G2 |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 0 07 031 | Height of barometer above mean sea level |  |
|  |  |  |  |
|  |  | (Forecast weather at an aerodrome) |  |
| 3 07 053 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | = 10 m (if the actual value is not available) |
|  | 0 11 001 | Wind direction | ddd |
|  | 0 08 054 | Qualifier for wind speed or wind gusts | P |
|  | 0 11 083 | Wind speed (see Note 1) | ff – km/h |
|  | 0 11 084 | Wind speed (see Note 1) | ff – kt |
|  | 0 11 002 | Wind speed (see Note 1) | ff – m/s |
|  | 0 08 054 | Qualifier for wind speed or wind gusts | P |
|  | 0 11 085 | Maximum wind gust speed (see Note 2) | fmfm – km/h |
|  | 0 11 086 | Maximum wind gust speed (see Note 2) | fmfm – kt |
|  | 0 11 041 | Maximum wind gust speed (see Note 2) | fmfm – m/s |
|  | 0 08 054 | Qualifier for wind speed or wind gusts | Set to missing (cancel) |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 0 20 009 | General weather indicator (TAF/METAR) | CAVOK NSW NSC |
|  | 0 20 060 | Prevailing horizontal visibility | VVVV |
|  | 3 07 014 | Significant present and forecast weather | w´w´ |
|  | 3 07 047 | METAR/SPECI/TAF clouds, replacing 3 07 015 | NsNsNshshshs |
|  |  |  |  |
|  |  | (Forecast of extreme temperatures) |  |
| 3 07 054 | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | = 2 m (if the actual value is not available) |
|  | 0 08 039 | Time significance (aviation forecast) | = 3 Forecast time of maximum temperature |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour | GFGF |
|  | 0 08 023 | First-order statistics | = 3 Minimum |
|  | 0 12 023 | Temperature | TFTF – Celsius |
|  | 0 08 039 | Time significance (aviation forecast) | = 4 Forecast time of minimum temperature |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour | GFGF |
|  | 0 08 023 | First-order statistics | = 2 Maximum |

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*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 054 | 0 12 023 | Temperature | TFTF – Celsius |
| *(continued)* | 0 08 023 | First-order statistics | Set to missing (cancel) |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Change indicator and forecast changes) |  |
| 3 07 055 | 0 33 045 | Probability of following event | C2C2 |
|  | 0 08 016 | Change qualifier of a trend-type forecast or an aerodrome forecast | TTTTTT |
|  | 0 08 039 | Time significance (aviation forecast) | = 5 Time of beginning of the forecast change |
|  | 0 04 003 | Day |  |
|  | 3 01 012 | Hour, minute | GGgg |
|  | 0 08 039 | Time significance (aviation forecast) | = 6 Time of ending of the forecast change |
|  | 0 04 003 | Day |  |
|  | 3 01 012 | Hour, minute | GeGe |
|  | 3 07 053 | Forecast weather at an aerodrome | During or after change |
|  |  |  |  |
|  |  | (Aerodrome forecast – full TAF) |  |
| 3 07 056 | 3 07 052 | Aerodrome forecast identification and time interval |  |
|  | 3 07 053 | Forecast weather at an aerodrome |  |
|  | 3 07 054 | Forecast of extreme temperatures |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 07 055 | Change indicator and forecast changes |  |
|  |  |  |  |
|  |  | (Soil temperature below land surface) |  |
| 3 07 060 | 0 07 061 | Depth below land surface |  |
|  | 0 12 030 | Soil temperature |  |
|  |  |  |  |
|  |  | (Soil temperature data at number of depths not exceeding five – high accuracy position) |  |
| 3 07 061 | 3 01 031 | Identification and type of station, date/time, location (high accuracy), height of station |  |
|  | 1 01 005 | Replicate 1 descriptor 5 times |  |
|  | 3 07 060 | Soil temperature below land surface |  |
|  |  |  |  |
|  |  | (Soil temperature data at number of depths not exceeding five – coarse accuracy position) |  |
| 3 07 062 | 3 01 032 | Identification and type of station, date/time, location (coarse accuracy), height of station |  |
|  | 1 01 005 | Replicate 1 descriptor 5 times |  |
|  | 3 07 060 | Soil temperature below land surface |  |
|  |  |  |  |
|  |  | (Depth below land surface and soil temperature) |  |
| 3 07 063 | 0 07 061 | Depth below land surface |  |
|  | 0 12 130 | Soil temperature | Scale: 2 |

*(continued)*

*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Monthly values of a land station) |  |
| 3 07 071 | 3 01 090 | Surface station identification; time, horizontal and vertical coordinates (see Note 3) |  |
|  | 0 04 074 | Short time period or displacement (see Note 3) | = UTC – LT |
|  | 0 04 023 | Time period or displacement | Number of days in the month |
|  |  | *Monthly mean values of pressure, temperature,  extreme temperatures and vapour pressure* |  |
|  | 0 08 023 | First-order statistics | = 4 Mean value |
|  | 0 10 004 | Pressure |  |
|  | 0 10 051 | Pressure reduced to mean sea level |  |
|  | 0 07 004 | Pressure | Standard level **|** Set to missing for lowland stations |
|  | 0 10 009 | Geopotential height | Standard level **|** Set to missing for lowland stations |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) (see Note 4) |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 02 051 | Indicator to specify observing method for extreme temperatures |  |
|  | 0 04 051 | Principal time of daily reading of maximum temperature |  |
|  | 0 12 118 | Maximum temperature at height specified, past 24 hours |  |
|  | 0 04 052 | Principal time of daily reading of minimum temperature |  |
|  | 0 12 119 | Minimum temperature at height specified, past 24 hours |  |
|  | 0 13 004 | Vapour pressure |  |
|  | 0 08 023 | First-order statistics | Set to missing |
|  | 0 12 151 | Standard deviation of daily mean temperature |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 1 02 005 | Replicate 2 descriptors 5 times |  |
|  | 0 08 050 | Qualifier for number of missing values in calculation of statistic  = 1 Pressure, = 2 Temperature,  = 4 Vapour pressure, = 7 Maximum temperature,  = 8 Minimum temperature | /see left column |
|  | 0 08 020 | Total number of missing entities (with respect to accumulation or average) | Days |
|  |  | *Sunshine duration* |  |
|  | 0 14 032 | Total sunshine |  |
|  | 0 14 033 | Total sunshine |  |
|  | 0 08 050 | Qualifier for number of missing values in calculation of statistic | = 6 Sunshine duration |
|  | 0 08 020 | Total number of missing entities (with respect to accumulation or average) | Days |

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*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 071 |  | *Number of days of occurrence* |  |
| *(continued)* | 1 02 018 | Replicate 2 descriptors 18 times |  |
|  | 0 08 052 | Condition for which number of days of occurrence follows |  |
|  | 0 08 022 | Total number (with respect to accumulation or average) | Days |
|  |  | *Occurrence of extreme values of temperature and  wind speed* |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) (see Note 4) |  |
|  | 0 08 053 | Day of occurrence qualifier | = 0 On 1 day only,  = 1 On 2 or more days |
|  | 0 04 003 | Day |  |
|  | 0 12 152 | Highest daily mean temperature |  |
|  | 0 08 053 | Day of occurrence qualifier | = 0 On 1 day only,  = 1 On 2 or more days |
|  | 0 04 003 | Day |  |
|  | 0 12 153 | Lowest daily mean temperature |  |
|  | 0 08 053 | Day of occurrence qualifier | = 0 On 1 day only,  = 1 On 2 or more days |
|  | 0 04 003 | Day |  |
|  | 0 08 023 | First-order statistics | = 2 Maximum value |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 08 053 | Day of occurrence qualifier | = 0 On 1 day only,  = 1 On 2 or more days |
|  | 0 04 003 | Day |  |
|  | 0 08 023 | First-order statistics | = 3 Minimum value |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 08 023 | First-order statistics | Set to missing |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) (see Note 4) |  |
|  | 0 02 002 | Type of instrumentation for wind measurement |  |
|  | 0 08 053 | Day of occurrence qualifier | = 0 On 1 day only,  = 1 On 2 or more days |
|  | 0 04 003 | Day |  |
|  | 0 11 046 | Maximum instantaneous wind speed |  |
|  | 0 08 053 | Day of occurrence qualifier | Set to missing (cancel) |
|  |  | *Precipitation* |  |
|  | 0 04 003 | Day (see Note 5) | = 1 |
|  | 0 04 004 | Hour (see Note 5) | = 6 |
|  | 0 04 023 | Time period or displacement (see Note 5) | Number of days in the month |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) (see Note 4) |  |
|  | 0 13 060 | Total accumulated precipitation |  |
|  | 0 13 051 | Frequency group, precipitation |  |
|  | 0 04 053 | Number of days with precipitation equal to or more than 1 mm |  |
|  | 0 08 050 | Qualifier for number of missing values in calculation of statistic | = 5 Precipitation |

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*(Category 07 – continued)*

|  |  |  |  |
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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 071 *(continued)* | 0 08 020 | Total number of missing entities (with respect to accumulation or average) | Days |
|  |  | *Number of days of occurrence* |  |
|  | 1 02 006 | Replicate 2 descriptors 6 times |  |
|  | 0 08 052 | Condition for which number of days of occurrence follows |  |
|  | 0 08 022 | Total number (with respect to accumulation or average) | Days |
|  |  | *Occurrence of extreme precipitation* |  |
|  | 0 08 053 | Day of occurrence qualifier | = 0 On 1 day only, = 1 On 2 or more days |
|  | 0 04 003 | Day |  |
|  | 0 13 052 | Highest daily amount of precipitation |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Monthly normals for a land station) |  |
| 3 07 072 | 0 04 001 | Year | Beginning of the reference period |
|  | 0 04 001 | Year | Ending of the reference period |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day (see Note 3) | = 1 |
|  | 0 04 004 | Hour (see Note 3) | = 0 |
|  | 0 04 074 | Short time period or displacement (see Note 3) | = UTC – LT |
|  | 0 04 022 | Time period or displacement | = 1 |
|  |  | *Normals of monthly mean pressure, temperature,  vapour pressure and of standard deviation* |  |
|  | 0 08 023 | First-order statistics | = 4 Mean value |
|  | 0 10 004 | Pressure |  |
|  | 0 10 051 | Pressure reduced to mean sea level |  |
|  | 0 07 004 | Pressure | Standard level |
|  | 0 10 009 | Geopotential height | Standard level |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) (see Note 4) |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 02 051 | Indicator to specify observing method for extreme temperatures | = 2 |
|  | 0 04 051 | Principal time of daily reading of maximum temperature |  |
|  | 0 12 118 | Maximum temperature at height specified, past 24 hours |  |
|  | 0 04 052 | Principal time of daily reading of minimum temperature |  |
|  | 0 12 119 | Minimum temperature at height specified, past 24 hours |  |
|  | 0 13 004 | Vapour pressure |  |
|  | 0 12 151 | Standard deviation of daily mean temperature |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |

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*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 072 |  | *Normal of sunshine duration* |  |
| *(continued)* | 0 14 032 | Total sunshine |  |
|  | 0 08 023 | First-order statistics | Set to missing |
|  |  | *Normals of precipitation* |  |
|  | 0 04 001 | Year | Beginning of the reference period |
|  | 0 04 001 | Year | Ending of the reference period |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day (see Note 5) | = 1 |
|  | 0 04 004 | Hour (see Note 5) | = 6 |
|  | 0 04 022 | Time period or displacement | = 1 |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) (see Note 4) |  |
|  | 0 08 023 | First-order statistics | = 4 Mean value |
|  | 0 13 060 | Total accumulated precipitation |  |
|  | 0 04 053 | Number of days with precipitation equal to or more than 1 mm |  |
|  | 0 08 023 | First-order statistics | Set to missing |
|  | 1 02 008 | Replicate 2 descriptors 8 times |  |
|  | 0 08 050 | Qualifier for number of missing values in calculation of statistic (see Note 6)  = 1 Pressure, = 2 Temperature,  = 3 Extreme temperature, = 4 Vapour pressure,  = 5 Precipitation, = 6 Sunshine duration,  = 7 Maximum temperature,  = 8 Minimum temperature | /see left column |
|  | 0 08 020 | Total number of missing entities (with respect to accumulation or average) (see Note 6) | Years |
|  |  |  |  |
|  |  | (Representation of CLIMAT data of the actual month and for monthly normals) |  |
| 3 07 073 | 3 07 071 | Monthly values of a land station |  |
|  | 3 07 072 | Monthly normals for a land station |  |
|  |  |  |  |
|  |  | (Supplemental daily temperature and precipitation values for monthly climate report) |  |
| 3 07 074 | 3 01 001 | WMO block and station numbers |  |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 1 12 000 | Delayed replication of 12 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor | Set to the number of days in the particular month for which data are being reported |

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*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 074 | 0 04 003 | Day |  |
| *(continued)* | 0 04 004 | Hour |  |
|  | 0 04 024 | Time period or displacement | Typically set to –24 to denote the time period beginning 24 hours prior to and ending at the specified time |
|  | 1 02 003 | Replicate 2 descriptors 3 times |  |
|  | 0 08 023 | First-order statistics  = 2 Daily maximum temperature,  = 3 Daily minimum temperature, = 4 Daily mean temperature | /see left column |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 08 023 | First-order statistics | Set to missing (cancel) |
|  | 0 04 004 | Hour |  |
|  | 0 04 024 | Time period or displacement |  |
|  | 0 13 060 | Total accumulated precipitation |  |
|  | 0 13 012 | Depth of fresh snow |  |
|  | 0 13 013 | Total snow depth |  |
|  |  |  |  |
|  |  | (Monthly values from a land station in compliance with regional or national reporting practices) |  |
| 3 07 076 | 3 01 090 | Surface station identification; time, horizontal and vertical coordinates |  |
|  | 0 04 074 | Short time period or displacement |  |
|  | 0 04 023 | Time period or displacement | Number of days in the month |
|  |  | *Monthly mean values of pressure, temperature, extreme temperatures and vapour pressure* |  |
|  | 0 08 023 | First-order statistics | = 4 Mean value |
|  | 0 10 004 | Pressure |  |
|  | 0 10 051 | Pressure reduced to mean sea level |  |
|  | 0 07 004 | Pressure | Standard level **|** Set to missing for lowland stations |
|  | 0 10 009 | Geopotential height | Standard level **|** Set to missing for lowland stations |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 02 051 | Indicator to specify observing method for extreme temperatures |  |
|  | 0 04 051 | Principal time of daily reading of maximum temperature |  |
|  | 0 12 118 | Maximum temperature at height specified, past 24 hours |  |
|  | 0 04 052 | Principal time of daily reading of minimum temperature |  |
|  | 0 12 119 | Minimum temperature at height specified, past 24 hours |  |

*(continued)*

*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 076 | 0 13 004 | Vapour pressure |  |
| *(continued)* | 0 08 023 | First-order statistics | Set to missing (cancel) |
|  | 0 12 151 | Standard deviation of daily mean temperature |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  |  | *Number of days for which values are missing* |  |
|  | 1 02 005 | Replicate 2 descriptors 5 times |  |
|  | 0 08 050 | Qualifier for number of missing values in calculation of statistic  = 1 Pressure, = 2 Temperature,  = 4 Vapour pressure, = 7 Maximum temperature,  = 8 Minimum temperature | /see left column |
|  | 0 08 020 | Total number of missing entities (with respect to accumulation or average) | Days |
|  |  | *Sunshine duration* |  |
|  | 0 14 032 | Total sunshine |  |
|  | 0 14 033 | Total sunshine |  |
|  | 0 08 050 | Qualifier for number of missing values in calculation of statistic | = 6 Sunshine duration |
|  | 0 08 020 | Total number of missing entities (with respect to accumulation or average) | Days |
|  |  | *Number of days of occurrence* |  |
|  | 1 02 018 | Replicate 2 descriptors 18 times |  |
|  | 0 08 052 | Condition for which number of days of occurrence follows  Wind ≥ 10 m/s, wind ≥ 20 m/s, wind ≥ 30 m/s,  maximum temperature < 273.15 K,  maximum temperature ≥ 298.15 K,  maximum temperature ≥ 303.15 K,  maximum temperature ≥ 308.15 K,  maximum temperature ≥ 313.15 K,  minimum temperature < 273.15 K,  sss > 0.00 m, sss > 0.01 m, sss > 0.10 m,  sss > 0.50 m, horizontal visibility < 50 m,  horizontal visibility < 100 m,  horizontal visibility < 1 000 m, hail, thunderstorm | /see left column |
|  | 0 08 022 | Total number (with respect to accumulation or average) | Days |
|  |  | *Occurrence of extreme values of temperature and wind speed* |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 08 053 | Day of occurrence qualifier | = 0 On 1 day only,  = 1 On 2 or more days |
|  | 0 04 003 | Day |  |
|  | 0 12 152 | Highest daily mean temperature |  |
|  | 0 08 053 | Day of occurrence qualifier | = 0 On 1 day only,  = 1 On 2 or more days |
|  | 0 04 003 | Day |  |

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*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 076 | 0 12 153 | Lowest daily mean temperature |  |
| *(continued)* | 0 08 053 | Day of occurrence qualifier | = 0 On 1 day only,  = 1 On 2 or more days |
|  | 0 04 003 | Day |  |
|  | 0 08 023 | First-order statistics | = 2 Maximum value |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 08 053 | Day of occurrence qualifier | = 0 On 1 day only,  = 1 On 2 or more days |
|  | 0 04 003 | Day |  |
|  | 0 08 023 | First-order statistics | = 3 Minimum value |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 08 023 | First-order statistics | Set to missing (cancel) |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 02 002 | Type of instrumentation for wind measurement |  |
|  | 0 08 053 | Day of occurrence qualifier | = 0 On 1 day only,  = 1 On 2 or more days |
|  | 0 04 003 | Day |  |
|  | 0 11 046 | Maximum instantaneous wind speed |  |
|  | 0 08 053 | Day of occurrence qualifier | Set to missing (cancel) |
|  |  | *Precipitation* |  |
|  | 0 04 003 | Day | = 1 |
|  | 0 04 004 | Hour | = 0 |
|  | 0 04 074 | Short time period or displacement |  |
|  | 0 04 023 | Time period or displacement | Number of days in the month |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 13 060 | Total accumulated precipitation |  |
|  | 0 13 051 | Frequency group, precipitation |  |
|  | 0 04 053 | Number of days with precipitation equal to or more than 1 mm |  |
|  | 0 08 050 | Qualifier for number of missing values in calculation of statistic | = 5 Precipitation |
|  | 0 08 020 | Total number of missing entities (with respect to accumulation or average) | Days |
|  |  | *Number of days of occurrence* |  |
|  | 1 02 006 | Replicate 2 descriptors 6 times |  |
|  | 0 08 052 | Condition for which number of days of occurrence follows |  |
|  | 0 08 022 | Total number (with respect to accumulation or average) | Days |
|  |  | *Occurrence of extreme precipitation* |  |
|  | 0 08 053 | Day of occurrence qualifier | = 0 On 1 day only,  = 1 On 2 or more days |
|  | 0 04 003 | Day |  |
|  | 0 13 052 | Highest daily amount of precipitation |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |

*(continued)*

*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Monthly normals for a land station in compliance with regional or national reporting practices) |  |
| 3 07 077 | 0 04 001 | Year | Beginning of the reference period |
|  | 0 04 001 | Year | Ending of the reference period |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day | = 1 |
|  | 0 04 004 | Hour | = 0 |
|  | 0 04 074 | Short time period or displacement |  |
|  | 0 04 022 | Time period or displacement | = 1 |
|  | 0 08 023 | First-order statistics | = 4 Mean value |
|  | 0 10 004 | Pressure |  |
|  | 0 10 051 | Pressure reduced to mean sea level |  |
|  | 0 07 004 | Pressure | Standard level |
|  | 0 10 009 | Geopotential height | Standard level |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 02 051 | Indicator to specify observing method for extreme temperatures |  |
|  | 0 04 051 | Principal time of daily reading of maximum temperature |  |
|  | 0 12 118 | Maximum temperature at height specified, past 24 hours |  |
|  | 0 04 052 | Principal time of daily reading of minimum temperature |  |
|  | 0 12 119 | Minimum temperature at height specified, past 24 hours |  |
|  | 0 13 004 | Vapour pressure |  |
|  | 0 12 151 | Standard deviation of daily mean temperature |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 0 14 032 | Total sunshine |  |
|  | 0 08 023 | First-order statistics | Set to missing (cancel) |
|  |  | *Normals of precipitation* |  |
|  | 0 04 001 | Year | Beginning of the reference period |
|  | 0 04 001 | Year | Ending of the reference period |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day | = 1 |
|  | 0 04 004 | Hour | = 0 |
|  | 0 04 074 | Short time period or displacement |  |
|  | 0 04 022 | Time period or displacement | = 1 |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 08 023 | First-order statistics | = 4 Mean value |
|  | 0 13 060 | Total accumulated precipitation |  |
|  | 0 04 053 | Number of days with precipitation equal to or more than 1 mm |  |

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*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 077 | 0 08 023 | First-order statistics | Set to missing (cancel) |
| *(continued)* | 1 02 008 | Replicate 2 descriptors 8 times |  |
|  | 0 08 050 | Qualifier for number of missing values in calculation of statistic  Pressure, temperature, extreme temperatures, vapour pressure, precipitation, sunshine duration, maximum temperature, minimum temperature | /see left column |
|  | 0 08 020 | Total number of missing entities (with respect to accumulation or average) | Years |
|  |  |  |  |
|  |  | (Sequence for representation of monthly values suitable for CLIMAT data in compliance with regional or national reporting practices) |  |
| 3 07 078 | 3 07 076 | Monthly values from a land station in compliance with regional or national reporting practices |  |
|  | 3 07 077 | Monthly normals for a land station in compliance with regional or national reporting practices |  |
|  |  |  |  |
|  |  | (Sequence for representation of synoptic reports from fixed land stations suitable for SYNOP data and for maritime data from coastal stations) |  |
| 3 07 079 | 3 01 090 | Surface station identification; time, horizontal and vertical coordinates |  |
|  | 3 02 031 | Pressure information |  |
|  | 3 02 035 | Basic synoptic “instantaneous” data |  |
|  | 3 02 036 | Clouds with bases below station level |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 047 | Direction of cloud drift |  |
|  | 0 08 002 | Vertical significance (surface observations) |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 048 | Direction and elevation of cloud |  |
|  | 3 02 037 | State of ground, snow depth, ground minimum temperature |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 22 061 | State of the sea |  |
|  | 0 20 058 | Visibility seawards from a coastal station |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 056 | Sea/water temperature | Sea/water surface temperature, method of measurement, depth below water surface |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 055 | Icing and ice |  |
|  | 3 02 043 | Basic synoptic “period” data |  |
|  | 3 02 044 | Evaporation data |  |

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*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 079 | 1 01 000 | Delayed replication of 1 descriptor |  |
| *(continued)* | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 02 045 | Radiation data (from 1 hour and 24-hour period) |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 046 | Temperature change |  |
|  |  |  |  |
|  |  | (Sequence for representation of synoptic reports from a fixed land station suitable for SYNOP data) |  |
| 3 07 080 | 3 01 090 | Surface station identification; time, horizontal and vertical coordinates |  |
|  | 3 02 031 | Pressure information |  |
|  | 3 02 035 | Basic synoptic “instantaneous” data |  |
|  | 3 02 036 | Clouds with bases below station level |  |
|  | 3 02 047 | Direction of cloud drift |  |
|  | 0 08 002 | Vertical significance (surface observations) |  |
|  | 3 02 048 | Direction and elevation of cloud |  |
|  | 3 02 037 | State of ground, snow depth, ground minimum temperature |  |
|  | 3 02 043 | Basic synoptic “period” data |  |
|  | 3 02 044 | Evaporation data |  |
|  | 1 01 002 | Replicate 1 descriptor 2 times |  |
|  | 3 02 045 | Radiation data (from 1 hour and 24-hour period) |  |
|  | 3 02 046 | Temperature change |  |
|  |  |  |  |
|  |  | (Sequence for representation of synoptic reports from a fixed land station suitable for SYNOP data in compliance with reporting practices in RA I) |  |
| 3 07 081 | 3 01 090 | Surface station identification; time, horizontal and vertical coordinates |  |
|  | 3 02 031 | Pressure information |  |
|  | 3 02 035 | Basic synoptic “instantaneous” data |  |
|  | 3 02 036 | Clouds with bases below station level |  |
|  | 3 02 047 | Direction of cloud drift |  |
|  | 0 08 002 | Vertical significance (surface observations) | Set to missing (cancel) |
|  | 3 02 048 | Direction and elevation of cloud |  |
|  | 3 02 037 | State of ground, snow depth, ground minimum temperature |  |
|  | 0 12 122 | Ground minimum temperature of the preceding night |  |
|  | 0 13 056 | Character and intensity of precipitation |  |
|  | 0 13 057 | Time of beginning or end of precipitation |  |
|  | 0 20 101 | Locust (acridian) name |  |
|  | 0 20 102 | Locust (maturity) colour |  |
|  | 0 20 103 | Stage of development of locusts |  |
|  | 0 20 104 | Organization state of swarm or band of locusts |  |
|  | 0 20 105 | Size of swarm or band of locusts and duration of passage of swarm |  |
|  | 0 20 106 | Locust population density |  |

*(continued)*

*(Category 07 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 081 | 0 20 107 | Direction of movements of locust swarm |  |
| *(continued)* | 0 20 108 | Extent of vegetation |  |
|  | 3 02 043 | Basic synoptic “period” data |  |
|  | 3 02 044 | Evaporation data |  |
|  | 1 01 002 | Replicate 1 descriptor 2 times |  |
|  | 3 02 045 | Radiation data (from 1 hour and 24-hour period) |  |
|  | 3 02 046 | Temperature change |  |
|  |  |  |  |
|  |  | (Sequence for representation of synoptic reports from a fixed land station suitable for SYNOP data in compliance with reporting practices in RA II) (see Note 7) |  |
| 3 07 082 | 3 01 090 | Surface station identification; time, horizontal and vertical coordinates |  |
|  | 3 02 031 | Pressure information |  |
|  | 3 02 035 | Basic synoptic “instantaneous” data |  |
|  | 3 02 036 | Clouds with bases below station level |  |
|  | 3 02 047 | Direction of cloud drift |  |
|  | 0 08 002 | Vertical significance (surface observations) | Set to missing (cancel) |
|  | 3 02 048 | Direction and elevation of cloud |  |
|  | 3 02 037 | State of ground, snow depth, ground minimum temperature |  |
|  | 0 12 121 | Ground minimum temperature | At the time of observation |
|  | 0 12 122 | Ground minimum temperature of the preceding night |  |
|  | 3 02 043 | Basic synoptic “period” data |  |
|  | 3 02 044 | Evaporation data |  |
|  | 1 01 002 | Replicate 1 descriptor 2 times |  |
|  | 3 02 045 | Radiation data (from 1 hour and 24-hour period) |  |
|  | 3 02 046 | Temperature change |  |
|  |  |  |  |
|  |  | (Sequence for representation of synoptic reports from a fixed land station suitable for SYNOP data in compliance with reporting practices in RA III) |  |
| 3 07 083 | 3 01 090 | Surface station identification; time, horizontal and vertical coordinates |  |
|  | 3 02 031 | Pressure information |  |
|  | 3 02 035 | Basic synoptic “instantaneous” data |  |
|  | 3 02 036 | Clouds with bases below station level |  |
|  | 3 02 047 | Direction of cloud drift |  |
|  | 0 08 002 | Vertical significance (surface observations) | Set to missing (cancel) |
|  | 3 02 048 | Direction and elevation of cloud |  |
|  | 3 02 037 | State of ground, snow depth, ground minimum temperature |  |
|  | 0 12 122 | Ground minimum temperature of the preceding night |  |
|  | 3 02 043 | Basic synoptic “period” data |  |
|  | 3 02 044 | Evaporation data |  |
|  | 1 01 002 | Replicate 1 descriptor 2 times |  |
|  | 3 02 045 | Radiation data (from 1 hour and 24-hour period) |  |
|  | 3 02 046 | Temperature change |  |

*(continued)*

*(Category 07 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Sequence for representation of synoptic reports from a fixed land station suitable for SYNOP data in compliance with reporting practices in RA IV) |  |
| 3 07 084 | 3 01 090 | Surface station identification; time, horizontal and vertical coordinates |  |
|  | 3 02 031 | Pressure information |  |
|  | 3 02 035 | Basic synoptic “instantaneous” data |  |
|  | 3 02 036 | Clouds with bases below station level |  |
|  | 3 02 047 | Direction of cloud drift |  |
|  | 0 08 002 | Vertical significance (surface observations) | Set to missing (cancel) |
|  | 3 02 048 | Direction and elevation of cloud |  |
|  | 3 02 037 | State of ground, snow depth, ground minimum temperature |  |
|  | 0 20 055 | State of sky in the tropics |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 2 05 001 | Signify character | Character field of 1 character |
|  | 3 02 043 | Basic synoptic “period” data |  |
|  | 3 02 044 | Evaporation data |  |
|  | 1 01 002 | Replicate 1 descriptor 2 times |  |
|  | 3 02 045 | Radiation data (from 1 hour and 24-hour period) |  |
|  | 3 02 046 | Temperature change |  |
|  |  |  |  |
|  |  | (Sequence for representation of synoptic reports from a fixed land station suitable for SYNOP data in compliance with reporting practices in RA VI) |  |
| 3 07 086 | 3 01 090 | Surface station identification; time, horizontal and vertical coordinates |  |
|  | 3 02 031 | Pressure information |  |
|  | 3 02 035 | Basic synoptic “instantaneous” data |  |
|  | 3 02 036 | Clouds with bases below station level |  |
|  | 0 08 002 | Vertical significance (surface observations) | Set to missing (cancel) |
|  | 3 02 037 | State of ground, snow depth, ground minimum temperature |  |
|  | 3 02 066 | Dangerous weather phenomena |  |
|  | 3 02 043 | Basic synoptic “period” data |  |
|  | 3 02 044 | Evaporation data |  |
|  | 1 01 002 | Replicate 1 descriptor 2 times |  |
|  | 3 02 045 | Radiation data (from 1 hour and 24-hour period) |  |
|  |  |  |  |
|  |  | (“Instantaneous” parameters of sequence 3 07 089) |  |
|  |  | *Surface station identification, time, horizontal and*  *vertical coordinates* |  |
| 3 07 087 | 3 01 001 | WMO block and station numbers | IIiii |
|  | 0 02 001 | Type of station | ix |
|  | 3 01 011 | Year, month, day | YY |
|  | 3 01 012 | Hour, minute | GG, gg |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |

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*(Category 07 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 087 | 0 07 031 | Height of barometer above mean sea level |  |
| *(continued)* |  | *Pressure data* |  |
|  | 3 02 001 | Pressure and 3-hour pressure change | PoPoPoPo, PPPP, ppp, a |
|  | 0 10 062 | 24-hour pressure change | p24p24p24 |
|  | 0 07 004 | Pressure | Standard level a3 = 925, 850, 700, ..hPa **|** Set to missing for lowland stations |
|  | 0 10 009 | Geopotential height | Standard level hhh **|** Set to missing for lowland stations |
|  |  | *Temperature and humidity* |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Temperature measurement |
|  | 0 12 101 | Temperature/air temperature | snTTT **|** Scale: 2 |
|  | 0 12 103 | Dewpoint temperature | snTdTdTd **|** Scale: 2 |
|  | 0 13 003 | Relative humidity |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  |  | *Visibility* |  |
|  | 0 20 001 | Horizontal visibility | VV |
|  |  | *Cloud data* |  |
|  | 3 02 004 | General cloud information  Cloud cover (total) N: If N = 9, then 0 20 010 = 113, if N = /, then 0 20 010 = missing **|** Vertical significance: If CL are observed, then 0 08 002 = 7 **|** Low cloud: If CL are not observed and CM are observed, then 0 08 002 = 8 **|** Middle cloud: If only CH are observed, 0 08 002 = 0, if N = 9, then 0 08 002 = 5, if N = 0, then 0 08 002 = 62, if  N = /, then 0 08 002 = missing **|** Cloud amount (of low or middle clouds) Nh: If N = 0, then 0 20 011 = 0, if N = 9, then 0 20 011 = 9, if N = /, then 0 20 011 = missing **|** Height of base of cloud h: If  N = 0 or /, then 0 20 013 = missing **|** Cloud type (low clouds) CL: 0 20 012 = CL + 30, if N = 0, then 0 20 012 = 30, if N = 9 or /, then 0 20 012 = 62 **|** Cloud type (middle clouds) CM: 0 20 012 = CM + 20, if N = 0, then 0 20 012 = 20, if N = 9 or / or CM = /, then 0 20 012 = 61 **|** Cloud type (high clouds) CH: 0 20 012 = CH + 10, if N = 0, then 0 20 012 = 10, if N = 9 or / or CH = /, then 0 20 012 = 60 | /see left column |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |

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*(Category 07 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 087 *(continued)* | 3 02 005 | Cloud layer  Vertical significance: In any Cb layer, 0 08 002 = 4, else in the first replication, if N = 9, then 0 08 002 = 5, if N = /, then 0 08 002 = missing, else 0 08 002 = 1, in the other replications 0 08 002 = 2, 3, 4 **|** Cloud amount Ns: In the first replication, if N = /, then 0 20 011 = missing, else 0 20 011 = Ns, in the other replications 0 20 011 = Ns  **|** Cloud type C: If N = 9 or /, then 0 20 012 = missing, else 0 20 012 = C **|** Height of base of cloud hshs | /see left column |
|  |  |  |  |
|  |  | (“Period” parameters of sequence 3 07 089) |  |
|  |  | *Present and past weather* |  |
| 3 07 088 | 0 20 003 | Present weather | ww |
|  | 0 04 024 | Time period or displacement | = –6 at 00, 06, 12, 18 UTC, = –3 at 03, 09, 15, 21 UTC |
|  | 0 20 004 | Past weather (1) | W1 |
|  | 0 20 005 | Past weather (2) | W2 |
|  |  | *Evaporation* |  |
|  | 0 04 024 | Time period or displacement | = –24 (hours) |
|  | 0 02 004 | Type of instrumentation for evaporation measurement or type of crop for which evapotranspiration is reported | iE |
|  | 0 13 033 | Evaporation/evapotranspiration | EEE |
|  |  | *Sunshine* |  |
|  | 1 02 002 | Replicate 2 descriptors 2 times |  |
|  | 0 04 024 | Time period or displacement | = –24 (hours) in the first replication, = –1 (hour) in the second replication |
|  | 0 14 031 | Total sunshine | SSS in the first replication, SS in the second replication |
|  |  | *Precipitation* |  |
|  | 1 02 002 | Replicate 2 descriptors 2 times |  |
|  | 0 04 024 | Time period or displacement | tR |
|  | 0 13 011 | Total precipitation/total water equivalent | RRR **|** = 0 No precipitation, = –0.1 Trace |
|  |  | *Extreme temperatures* |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Temperature measurement |
|  | 0 04 024 | Time period or displacement | = –12 (hours) |
|  | 0 12 111 | Maximum temperature, at height and over period specified | snTxTxTx |
|  | 0 04 024 | Time period or displacement | = –12 (hours) |
|  | 0 12 112 | Minimum temperature, at height and over period specified | snTnTnTn |

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*(Category 07 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 088 |  | *Wind data* |  |
| *(continued)* | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Wind measurement |
|  | 0 02 002 | Type of instrumentation for wind measurement | iw |
|  | 0 08 021 | Time significance | = 2 Time averaged |
|  | 0 04 025 | Time period or displacement | = –10 (minutes) or number of minutes after a significant change of wind, if any |
|  | 0 11 001 | Wind direction | dd **|** If dd = 00 Calm or dd = 99 Variable, 0 11 001 = 0 |
|  | 0 11 002 | Wind speed | ff |
|  | 0 08 021 | Time significance | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Sequence for representation of synoptic reports from a fixed land station suitable for SYNOP data manually encoded in CREX) |  |
| 3 07 089 | 3 07 087 | “Instantaneous” parameters of sequence 3 07 089 |  |
|  | 3 07 088 | “Period” parameters of sequence 3 07 089 |  |
|  |  |  |  |
|  |  | (Sequence for representation of synoptic reports from a mobile land station suitable for SYNOP MOBIL data) |  |
| 3 07 090 | 3 01 092 | Mobile surface station identification, date/time, horizontal and vertical coordinates |  |
|  | 3 02 031 | Pressure information |  |
|  | 3 02 035 | Basic synoptic “instantaneous” data |  |
|  | 3 02 036 | Clouds with bases below station level |  |
|  | 3 02 047 | Direction of cloud drift |  |
|  | 0 08 002 | Vertical significance (surface observations) |  |
|  | 3 02 048 | Direction and elevation of cloud |  |
|  | 3 02 037 | State of ground, snow depth, ground minimum temperature |  |
|  | 3 02 043 | Basic synoptic “period” data |  |
|  | 3 02 044 | Evaporation data |  |
|  | 1 01 002 | Replicate 1 descriptor 2 times |  |
|  | 3 02 045 | Radiation data (from 1 hour and 24-hour period) |  |
|  | 3 02 046 | Temperature change |  |
|  |  |  |  |
|  |  | (BUFR template for surface observations from one-hour period with national and WMO station identification) |  |
| 3 07 091 | 3 01 089 | National station identification |  |
|  | 3 01 090 | Surface station identification; time, horizontal and vertical co-ordinates |  |
|  | 0 08 010 | Surface qualifier (temperature data) |  |
|  | 3 01 091 | Surface station instrumentation |  |
|  | 3 02 001 | Pressure and 3-hour pressure change |  |
|  | 0 07 004 | Pressure | Standard level |
|  | 0 10 009 | Geopotential height | Standard level |

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*(Category 07 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 091 | 3 02 072 | Temperature and humidity data |  |
| *(continued)* | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 1 01 005 | Replicate 1 descriptor 5 times |  |
|  | 3 07 063 | Depth below land surface and soil temperature |  |
|  | 0 07 061 | Depth below land surface | Set to missing (cancel) |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 069 | Visibility data |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 0 07 033 | Height of sensor above water surface | Set to missing (cancel) |
|  | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 20 031 | Ice deposit (thickness) |  |
|  | 0 20 032 | Rate of ice accretion (estimated) |  |
|  | 0 02 038 | Method of water temperature and/or salinity measurement |  |
|  | 0 22 043 | Sea/water temperature | Scale: 2 |
|  | 3 02 021 | Waves |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 078 | State of ground and snow depth measurement |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 073 | Cloud data |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 074 | Present and past weather |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 175 | Intensity of precipitation, size of precipitation element |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 04 025 | Time period or displacement | = –10 (minutes) |
|  | 3 02 076 | Precipitation, obscuration and other phenomena |  |
|  | 3 02 071 | Wind data from one-hour period |  |
|  | 3 02 077 | Extreme temperature data |  |
|  | 0 07 033 | Height of sensor above water surface | Set to missing (cancel) |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 079 | Precipitation measurement |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 080 | Evaporation measurement |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |

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*(Category 07 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 091 | 3 02 081 | Total sunshine data |  |
| *(continued)* | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 082 | Radiation data |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 04 025 | Time period or displacement | = –10 (minutes) |
|  | 0 13 059 | Number of flashes (thunderstorm) |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 083 | First-order statistics of P, W, T, U data |  |
|  | 0 33 005 | Quality information (AWS data) |  |
|  | 0 33 006 | Internal measurement status information (AWS) |  |
|  |  |  |  |
|  |  | (BUFR template for surface observations from n-minute period) |  |
| 3 07 092 | 3 01 150 | WIGOS identifier |  |
|  | 3 01 001 | WMO block and station numbers |  |
|  | 2 08 040 | Change width of CCITT IA5 field |  |
|  | 0 01 019 | Long station or site name | 40 characters |
|  | 2 08 000 | Change width of CCITT IA5 field |  |
|  | 3 01 011 | Year, month, day | The time identification refers to the end of the n-minute period. |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 0 01 023 | Observation sequence number |  |
|  | 1 08 000 | Delayed replication of 8 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 07 031 | Height of barometer above mean sea level |  |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 10 004 | Pressure | Measured value of the air pressure at the sensor location and sensor height |
|  | 0 10 051 | Pressure reduced to mean sea level |  |
|  | 0 07 004 | Pressure | Standard level |
|  | 0 10 009 | Geopotential height | Standard level |
|  | 2 04 000 | Add associated field | Cancel |
|  | 1 15 000 | Delayed replication of 15 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 08 010 | Surface qualifier (temperature data) |  |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 12 101 | Temperature/air-temperature | Scale: 2 |

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*(Category 07 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 092 | 0 12 103 | Dewpoint temperature | Scale: 2 |
| *(continued)* | 2 02 129 | Change scale |  |
|  | 2 01 132 | Change data width |  |
|  | 0 13 003 | Relative humidity | Mandatory to report (presuming a humidity sensor is installed), data width 11 bits |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 02 000 | Change scale | Cancel |
|  | 0 13 009 | Relative humidity | Original measured value |
|  | 2 04 000 | Add associated field | Cancel |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 0 08 010 | Surface qualifier (temperature data) | Set to missing (cancel) |
|  | 1 07 000 | Delayed replication of 7 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 061 | Depth below land surface |  |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 12 130 | Soil temperature |  |
|  | 0 13 111 | Soil moisture |  |
|  | 2 04 000 | Add associated field | Cancel |
|  | 0 07 061 | Depth below land surface | Set to missing (cancel) |
|  | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 33 041 | Attribute of following value |  |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 20 001 | Horizontal visibility |  |
|  | 2 04 000 | Add associated field | Cancel |
|  | 1 13 000 | Delayed replication of 13 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 20 010 | Cloud cover (total) |  |
|  | 2 04 000 | Add associated field | Cancel |
|  | 1 07 000 | Delayed replication of 7 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 002 | Vertical significance (surface observations) |  |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 20 011 | Cloud amount |  |
|  | 0 20 013 | Height of base of cloud |  |
|  | 2 04 000 | Add associated field | Cancel |
|  | 0 08 002 | Vertical significance (surface observations) | Set to missing (cancel) |
|  | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |

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*(Category 07 – continued)*

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| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 092 | 2 04 018 | Add associated field |  |
| *(continued)* | 0 31 021 | Associated field significance |  |
|  | 0 20 062 | State of ground (with or without snow) |  |
|  | 0 13 013 | Total snow depth |  |
|  | 2 04 000 | Add associated field | Cancel |
|  | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 04 025 | Time period or displacement | = –n minutes |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 20 003 | Present weather |  |
|  | 2 04 000 | Add associated field | Cancel |
|  | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 04 025 | Time period or displacement | = –n minutes |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 13 011 | Total precipitation/total water equivalent | Snow |
|  | 2 04 000 | Add associated field | Cancel |
|  | 1 15 000 | Delayed replication of 15 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 08 021 | Time significance | = 2 Time averaged |
|  | 0 04 025 | Time period or displacement | = –10 minutes, or number of minutes after a significant change of wind |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 2 04 000 | Add associated field | Cancel |
|  | 0 08 021 | Time significance | Set to missing (cancel) |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 11 043 | Maximum wind gust direction |  |
|  | 0 11 041 | Maximum wind gust speed |  |
|  | 2 04 000 | Add associated field | Cancel |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 04 025 | Time period or displacement | = –n minutes (default n = 10) |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 14 031 | Total sunshine |  |
|  | 2 04 000 | Add associated field | Cancel |

*(continued)*

*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 092 | 1 10 000 | Delayed replication of 10 descriptors |  |
| *(continued)* | 0 31 000 | Short delayed descriptor replication factor | Open or close (1/0) |
|  | 0 04 025 | Time period or displacement | = –n minutes (default n = 10) |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 14 002 | Long-wave radiation, integrated over period specified | Upward long-wave radiation **| a**ccording to BUFR Table B, under Class 14, Note 2: negative values |
|  | 0 14 002 | Long-wave radiation, integrated over period specified | Downward long-wave radiation **| a**ccording to BUFR Table B, under Class 14, Note 1: positive values |
|  | 0 14 004 | Short-wave radiation, integrated over period specified | Upward short-wave radiation **| a**ccording to BUFR Table B, under Class 14, Note 2: negative values |
|  | 0 14 028 | Global solar radiation (high accuracy), integrated over period specified |  |
|  | 0 14 029 | Diffuse solar radiation (high accuracy), integrated over period specified |  |
|  | 0 14 030 | Direct solar radiation (high accuracy), integrated over period specified |  |
|  | 2 04 000 | Add associated field | Cancel |
|  | 1 13 000 | Delayed replication of 13 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 04 025 | Time period or displacement | = –n minutes (default n = 10) |
|  | 0 02 071 | Spectrographic wavelength | UV-A: 315 nm |
|  | 0 02 072 | Spectrographic width | UV-A: 85 nm |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 14 072 | Global UV irradiation | Integrated over period specified **|** UV-A irradiation **| a**ccording to BUFR Table B under Class 14, Note 8  *(ISO 21348: UV-A wave length range 315 ≤ λ ≤400 nm)* |
|  | 2 04 000 | Add associated field | Cancel |
|  | 0 02 071 | Spectrographic wavelength | UV-B: 280 nm |
|  | 0 02 072 | Spectrographic width | UV-B: 35 nm |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance | Quality flag |

*(continued)*

*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 092 *(continued)* | 0 14 072 | Global UV irradiation | Integrated over period specified **|** UV-B irradiation **| a**ccording to BUFR Table B under Class 14, Note 8  *(ISO 21348 UV-B wave length range 280 ≤ λ ≤ 315 nm)* |
|  | 2 04 000 | Add associated field | Cancel |
|  |  |  |  |
|  |  | (Sequence for representation of SYNOP with supplementary information on one-hour observations) |  |
| 3 07 096 | 3 01 090 | Surface station identification; time, horizontal and vertical coordinates |  |
|  | 3 01 089 | National station identification |  |
|  | 0 08 010 | Surface qualifier (temperature data) |  |
|  | 3 01 091 | Surface station instrumentation |  |
|  | 3 02 084 | “Instantaneous” data of sequence 3 07 096 |  |
|  | 3 02 085 | “Period” data of sequence 3 07 096 |  |
|  | 0 33 005 | Quality information (AWS data) |  |
|  | 0 33 006 | Internal measurement status information (AWS) |  |
|  |  |  |  |
|  |  | (Snow observation) |  |
| 3 07 101 | 3 01 089 | National station identification |  |
|  | 0 01 019 | Long station or site name |  |
|  | 0 02 001 | Type of station |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 02 177 | Method of snow depth measurement |  |
|  | 0 20 062 | State of the ground (with or without snow) |  |
|  | 0 13 013 | Total snow depth |  |
|  |  |  |  |
|  |  | (Road weather information) |  |
|  |  | *Station identification* |  |
| 3 07 102 | 3 01 089 | National station identification |  |
|  | 0 01 018 | Short station or site name | For identification of the road weather monitoring site |
|  | 0 01 015 | Station or site name |  |

*(continued)*

*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 102 | 0 01 104 | State/federal state identifier |  |
| *(continued)* | 0 01 105 | Highway designator |  |
|  | 0 01 106 | Location along highway as indicated by position markers |  |
|  | 0 03 017 | Extended type of station |  |
|  | 0 03 018 | Type of road |  |
|  | 0 03 019 | Type of construction |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  |  | *Temperature, humidity and visibility data* |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 12 103 | Dewpoint temperature |  |
|  | 0 13 003 | Relative humidity |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 0 20 001 | Horizontal visibility |  |
|  |  | *Road temperature and other data* |  |
|  | 1 09 000 | Delayed replication of 9 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 03 016 | Position of road sensors |  |
|  | 0 12 128 | Road surface temperature |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 061 | Depth below land surface | = 0.30 m in the first replication, = e.g. 0.15 or 0.07 m in the second replication |
|  | 0 12 129 | Road subsurface temperature |  |
|  | 0 07 061 | Depth below land surface | Set to missing (cancel) |
|  | 0 13 116 | Water film thickness |  |
|  | 0 20 138 | Road surface condition |  |
|  |  | *Precipitation data* |  |
|  | 0 04 025 | Time period or displacement | = –15 minutes |
|  | 0 20 024 | Intensity of phenomena | Intensity (light, moderate, heavy) of precipitation |
|  | 0 13 055 | Intensity of precipitation |  |
|  | 0 20 021 | Type of precipitation |  |
|  | 0 13 011 | Total precipitation/total water equivalent |  |
|  |  | *Wind data* |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 08 021 | Time significance | = 2 Time averaged |
|  | 0 04 025 | Time period or displacement | = –10 minutes |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 08 021 | Time significance | Set to missing (cancel) |

*(continued)*

*(Category 07 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 07 102 |  | *Maximum wind gust* |  |
| *(continued)* | 0 04 025 | Time period or displacement | In minutes |
|  | 0 11 043 | Maximum wind gust direction |  |
|  | 0 11 041 | Maximum wind gust speed |  |
|  |  | *State of functionality* |  |
|  | 0 33 005 | Quality information (AWS data) |  |
|  |  |  |  |
|  |  | (Snow observation, snow density, snow water equivalent) |  |
| 3 07 103 | 3 01 150 | WIGOS identifier |  |
|  | 3 07 101 | Snow observation |  |
|  | 0 13 117 | Snow density (liquid water content) |  |
|  | 0 03 028 | Method of snow water equivalent measurement |  |
|  | 0 13 163 | Snow water equivalent |  |
|  |  |  |  |
|  |  | (Sequence for representation of synoptic reports from a fixed land station suitable for SYNOP data in compliance with reporting practices in RA II) |  |
| 3 07 182 | 3 01 090 | Surface station identification; time, horizontal and vertical coordinates |  |
|  | 3 02 031 | Pressure information |  |
|  | 3 02 035 | Basic synoptic “instantaneous” data |  |
|  | 3 02 036 | Clouds with bases below station level |  |
|  | 3 02 047 | Direction of cloud drift |  |
|  | 0 08 002 | Vertical significance (surface observations) | Set to missing (cancel) |
|  | 3 02 048 | Direction and elevation of cloud |  |
|  | 3 02 037 | State of ground, snow depth, ground minimum temperature | Past 12 hours |
|  | 0 12 120 | Ground temperature | snT’gT’g |
|  | 0 12 122 | Ground minimum temperature of the preceding night | snTgTg |
|  | 3 02 043 | Basic synoptic “period” data |  |
|  | 3 02 044 | Evaporation data |  |
|  | 1 01 002 | Replicate 1 descriptor 2 times |  |
|  | 3 02 045 | Radiation data (from 1 hour and 24-hour period) |  |
|  | 3 02 046 | Temperature change |  |

Notes:

(1) Within 3 07 045, 3 07 048 and 3 07 053, wind speed shall be reported in the same units as in the original TAC data and:

0 11 083 shall be set to missing, if wind speed is reported in knots or m s–1 in TAC data,

0 11 084 shall be set to missing, if wind speed is reported in km h–1 or m s–1 in TAC data.

(2) Within 3 07 045, 3 07 048 and 3 07 053, maximum wind speed (gusts) shall be reported in the same units as in the original TAC data and:

0 11 085 shall be set to missing, if maximum wind speed is reported in knots or m s–1 in TAC data,

0 11 086 shall be set to missing, if maximum wind speed is reported in km h–1 or m s–1 in TAC data.

(3) The time identification refers to the beginning of the one-month period.

(4) If the height of the sensor was changed during the period specified, the value shall be that which existed for the greater part of the period.

*(continued)*

*(Category 07 – continued)*

(5) In case of precipitation measurements, the one-month period begins at 06 UTC on the first day of the month and ends at 06 UTC on the first day of the following month.

(6) The number of missing years within the reference period from the calculation of normal for mean extreme air temperature should be given, if available, for both the calculation of normal maximum temperature and for the calculation of normal minimum temperature in addition to the number of missing years for the extreme air temperatures reported under 0 08 020 preceded by 0 08 050 in which figure 3 is used.

(7) 3 07 082 is deprecated.

(8) To represent Intensity of precipitation, type of precipitation and state of functionality, 0 20 024 (Code table), 0 20 021 (Flag table) and 0 33 005 (Flag table) are used, respectively.

(9) Additional descriptors are required to reduce the workload with respect to the station database, e.g. for identification of the federal state and identification of the highway.

(10) The majority of stations has only one position on the road and one subsurface temperature sensor. Delayed replications have been introduced to increase flexibility and volume efficiency.

(11) Each position of road sensors includes the measurements of:

– Road surface temperature

– Road subsurface temperatures

– Water film thickness

– Road surface condition

(12) Some types of stations do not have the ability to identify the surface condition accurately. They can only report conditions such as "not dry" or "glazed". The code table for road surface conditions has been adjusted accordingly.

**Category 08 – Surface report sequences (sea)**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Buoy/platform – fixed) |  |
| 3 08 001 | 3 01 033 | Buoy/platform – fixed | Identification, type, date/time, position (high accuracy) |
|  | 3 02 011 | Low altitude station | Basic surface report |
|  | 0 22 042 | Sea/water temperature |  |
|  |  |  |  |
|  |  | (Buoy/platform – fixed) |  |
| 3 08 002 | 3 01 034 | Buoy/platform – fixed | Identification, type, date/time, position (coarse accuracy) |
|  | 3 02 011 | Low altitude station | Basic surface report |
|  | 0 22 042 | Sea/water temperature |  |
|  |  |  |  |
|  |  | (Buoy/platform – moving) (see Note 1) |  |
| 3 08 003 | 3 01 035 | Buoy/platform – moving | Identification, movement, type, date/time, position (coarse accuracy) |
|  | 3 02 011 | Low altitude station | Basic surface report |
|  | 0 22 042 | Sea/water temperature |  |
|  |  |  |  |
|  |  | (Ship) |  |
| 3 08 004 | 3 01 036 | Ship | Identification, movement, type, date/time, position (coarse accuracy) |
|  | 3 02 011 | Low altitude station | Basic surface report |
|  | 0 22 042 | Sea/water temperature |  |
|  |  |  |  |
| 3 08 005 | 3 08 004 | Ship | Basic ship report |
|  | 3 02 024 | Wind and swell waves |  |
|  |  |  |  |
|  |  | (Buoy Section 1 optional parameters) |  |
| 3 08 006 | 0 10 004 | Pressure |  |
|  | 0 10 061 | 3-hour pressure change |  |
|  | 0 10 063 | Characteristic of pressure tendency |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 12 004 | Air temperature at 2 m |  |
|  | 0 13 003 | Relative humidity |  |
|  | 0 22 042 | Sea/water temperature |  |
|  |  |  |  |
| 3 08 007 | 3 01 055 | Identification and type of station, date/time, location (high accuracy), movement |  |
|  | 3 02 011 | Low altitude station | Basic surface report |
|  | 0 07 062 | Depth below sea/water surface |  |
|  | 0 22 042 | Sea/water temperature |  |

*(continued)*

*(Category 08 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Sequence for representation of synoptic reports from a sea station suitable for SHIP data) |  |
| 3 08 009 | 3 01 093 | Ship identification, movement, date/time, horizontal and vertical coordinates |  |
|  | 3 02 001 | Pressure and 3-hour pressure change |  |
|  | 3 02 054 | Ship “instantaneous” data |  |
|  | 0 08 002 | Vertical significance (surface observations) |  |
|  | 3 02 055 | Icing and ice |  |
|  | 3 02 057 | Ship marine data |  |
|  | 3 02 060 | Ship “period” data |  |
|  |  |  |  |
|  |  | (TRACKOB template) |  |
| 3 08 010 | 0 01 011 | Ship or mobile land station identifier |  |
|  | 1 13 000 | Delayed replication of 13 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 04 080 | Averaging period for following value |  |
|  | 0 22 049 | Sea-surface temperature |  |
|  | 0 04 080 | Averaging period for following value |  |
|  | 0 22 059 | Sea-surface salinity |  |
|  | 0 04 080 | Averaging period for following value |  |
|  | 0 22 005 | Direction of sea-surface current |  |
|  | 0 02 042 | Indicator for sea-surface current speed |  |
|  | 0 22 032 | Speed of sea-surface current |  |
|  | 0 02 042 | Indicator for sea-surface current speed | Cancel |
|  | 0 04 080 | Averaging period for following value | Cancel |
|  |  |  |  |
|  |  | (Monthly values from an ocean weather station – CLIMAT SHIP) |  |
| 3 08 011 | 0 01 011 | Ship or mobile land station identifier | Ship’s call sign |
|  | 0 02 001 | Type of station |  |
|  | 3 01 011 | Year, month, day (see Note 2) |  |
|  | 3 01 012 | Hour, minute (see Note 2) |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level (see Note 3) |  |
|  | 0 07 031 | Height of barometer above mean sea level (see Note 3) |  |
|  |  | *Monthly mean values of pressure, temperature,  vapour pressure and sea/water temperature* |  |
|  | 0 04 074 | Short time period or displacement) (see Note 2) | = UTC – LT |
|  | 0 04 023 | Time period or displacement | = Number of days in the month |
|  | 0 08 023 | First-order statistics | = 4 Mean value |
|  | 0 10 051 | Pressure reduced to mean sea level |  |

*(continued)*

*(Category 08 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 08 011 *(continued)* | 0 07 032 | Height of sensor above local ground (or deck of marine platform) (see Note 3) | Temperature measurement |
|  | 0 07 033 | Height of sensor above water surface (see Note 3) | Temperature measurement |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 13 004 | Vapour pressure |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 0 07 033 | Height of sensor above water surface | Set to missing (cancel) |
|  | 3 02 056 | Sea/water temperature | Sea-surface temperature, method of measurement, and depth below sea surface |
|  | 0 08 023 | First-order statistics | Set to missing |
|  |  | *Precipitation* |  |
|  | 0 04 003 | Day (see Note 4) | = 1 |
|  | 0 04 004 | Hour (see Note 4) | = 6 |
|  | 0 04 023 | Time period or displacement (see Note 4) | = Number of days in the month |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) (see Note 3) |  |
|  | 0 13 060 | Total accumulated precipitation |  |
|  | 0 13 051 | Frequency group, precipitation |  |
|  | 0 04 053 | Number of days with precipitation equal to or more than 1 mm |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Monthly normals for an ocean weather station) |  |
| 3 08 012 | 0 04 001 | Year | Beginning of the reference period |
|  | 0 04 001 | Year | Ending of the reference period |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day (see Note 2) | = 1 |
|  | 0 04 004 | Hour (see Note 2) | = 0 |
|  | 0 04 074 | Short time period or displacement (see Note 2) | = UTC – LT |
|  | 0 04 022 | Time period or displacement | = 1 |
|  |  | *Normals of monthly mean pressure, temperature,  vapour pressure and* *sea/water temperature* |  |
|  | 0 08 023 | First-order statistics | = 4 Mean value |
|  | 0 10 051 | Pressure reduced to mean sea level |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) (see Note 3) | Temperature measurement |
|  | 0 07 033 | Height of sensor above water surface (see Note 3) | Temperature measurement |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 13 004 | Vapour pressure |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |

*(continued)*

*(Category 08 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 08 012 | 0 07 033 | Height of sensor above water surface | Set to missing (cancel) |
| *(continued)* | 3 02 056 | Sea/water temperature | Sea-surface temperature, method of measurement, and depth below sea surface |
|  | 0 08 023 | First-order statistics | Set to missing |
|  | 0 04 001 | Year | Beginning of the reference period |
|  | 0 04 001 | Year | Ending of the reference period |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day (see Note 4) | = 1 |
|  | 0 04 004 | Hour (see Note 4) | = 6 |
|  | 0 04 022 | Time period or displacement | = 1 |
|  |  | *Normals of precipitation* |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) (see Note 3) | Precipitation measurement |
|  | 0 08 023 | First-order statistics | = 4 Mean value |
|  | 0 13 060 | Total accumulated precipitation |  |
|  | 0 04 053 | Number of days with precipitation equal to or more than 1 mm |  |
|  | 0 08 023 | First-order statistics | Set to missing |
|  |  |  |  |
|  |  | (Representation of CLIMAT SHIP data of the actual month and for monthly normals) |  |
| 3 08 013 | 3 08 011 | Monthly values from an ocean weather station – CLIMAT SHIP |  |
|  | 3 08 012 | Monthly normals for an ocean weather station |  |
|  |  |  |  |
|  |  | (Synoptic reports from sea stations suitable for VOS observation data) |  |
| 3 08 014 | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 01 018 | Encrypted ship’s call sign and encryption method |  |
|  | 0 03 001 | Surface station type |  |
|  | 3 01 093 | Ship identification, movement, date/time, horizontal and vertical coordinates |  |
|  | 2 08 032 | Change width of CCITT IA5 field |  |
|  | 0 01 079 | Unique identifier for the profile | 32 characters **|** Unique ID for report |
|  | 2 08 000 | Change width of CCITT IA5 field | Cancel |
|  | 3 02 062 | Ship “instantaneous” data |  |
|  | 3 02 063 | Ship “period” data |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 092 | VOSClim data elements |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 06 033 | Surface salinity |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |

*(continued)*

*(Category 08 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 08 014 | 0 31 000 | Short delayed descriptor replication factor |  |
| *(continued)* | 3 06 034 | Surface current |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 06 043 | Marine biogeochemical and radiation observations | E-SURFMAR S-AWS observations |
|  |  |  |  |
|  |  | (Template for WAVEOB data expressed as frequency (Ia = 0 in FM-65 WAVEOB)) |  |
|  |  | *Identification (WAVEOB Section 0)* |  |
| 3 08 015 | 0 01 003 | WMO Region number/geographical area | A1 – First digit of WMO number (e.g. 62024 → 6) |
|  | 0 01 020 | WMO Region sub-area | bw – Second digit of WMO number (e.g. 62024 → 2) |
|  | 0 01 005 | Buoy/platform identifier | nbnbnb – Last 3 digits of WMO number (e.g. 62024 → 024) |
|  | 0 01 011 | Ship or mobile land station identifier | D....D |
|  | 0 01 007 | Satellite identifier | I6I6I6 |
|  | 0 01 001 | WMO block number | II |
|  | 0 01 002 | WMO station number | iii – IIiii only apply to fixed sea stations |
|  | 0 02 044 | Indicator for method of calculating spectral wave data | Im – Code table 1744 (WAVEOB), 0 02 044 (BUFR) |
|  | 0 02 045 | Indicator for type of platform | Ip – Code table 1747 (WAVEOB), 0 02 045 (BUFR) |
|  | 3 01 011 | Year, month, day | YYMMJ – Date of observation |
|  | 3 01 012 | Hour, minute | GGgg – Time of observation |
|  | 3 01 021 | Latitude/longitude (high accuracy) | QcLaLaLaLa LoLoLoLoLo |
|  |  | *Basic data (WAVEOB Section 0)* |  |
|  | 0 22 063 | Total water depth | 1hhhh |
|  | 0 22 076 | Direction from which dominant waves are coming | 9dddd – Section 0 |
|  | 0 22 077 | Directional spread of dominant wave | dsds – section 0 |
|  | 0 22 094 | Total number of wave bands | 111BTBT – Section 1 |
|  | 0 25 043 | Wave sampling interval (time) | SSSS – Section 1 |
|  | 0 22 078 | Duration of wave record | D’D’D’D’ – Section 1 |
|  | 1 05 002 | Replicate 5 descriptors 2 times | Replicate over sensor type |
|  | 0 02 046 | Wave measurement instrumentation | = 1 Heave sensor,  = 2 Slope sensor |
|  | 0 22 070 | Significant wave height | 2HsHsHsHs or 6HseHseHseHse – Section 0 |
|  | 0 22 071 | Spectral peak wave period | 3PpPpPpPp or 7PspPspPspPsp – Section 0 |

*(continued)*

*(Category 08 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 08 015 | 0 22 073 | Maximum wave height | 4HmHmHmHm |
| *(continued)* | 0 22 074 | Average wave period | 5PaPaPaPa or 8PsaPsaPsaPsa – Section 0 |
|  |  | *Spectral data (WAVEOB Sections 1–5)* |  |
|  | 1 27 000 | Delayed replication of 27 descriptors | Replication over sensor type |
|  | 0 31 001 | Delayed descriptor replication factor (see Note 5) | (0,1,2) normally 1 |
|  | 0 02 046 | Wave measurement instrumentation | = 1 Heave sensor,  = 2 Slope sensor |
|  | 0 08 090 | Decimal scale of following significands | x– Scale to be applied to following element descriptors |
|  | 0 22 102 | Scaled maximum non-directional spectral wave density by frequency | CmCmCm – Section 2 or CsmCsmCsm – Section 3 |
|  | 0 08 090 | Decimal scale of following significands | Set to missing |
|  | 0 22 084 | Band containing maximum non-directional spectral wave density | nmnm – Section 2 or nsmnsm – Section 3 |
|  | 1 20 000 | Delayed replication of 20 descriptors | Replication over bands |
|  | 0 31 001 | Delayed descriptor replication factor | 111BTBT – Section 1 (number of band) |
|  | 0 22 080 | Waveband central frequency | 1f1f1f1f1x .... – Section 1 |
|  | 0 22 108 | Spectral wave density ratio | 1c1c1c2c2 ... – Section 2 or 1cs1cs1cs2cs2 ... – Section 3 |
|  | 0 22 086 | Mean direction from which waves are coming | 1da1da1 – Section 4 |
|  | 0 22 087 | Principal direction from which waves are coming | da2da2 – Section 4 |
|  | 0 22 088 | First normalized polar coordinate from Fourier coefficients | r1r1 – Section 4 |
|  | 0 22 089 | Second normalized polar coordinate from Fourier coefficients | r2r2 – Section 4 |
|  | 1 05 000 | Delayed replication of 5 descriptors (see Note 6) |  |
|  | 0 31 001 | Delayed descriptor replication factor | n – Section 5 (number of directions counted); = 0 if Ib = 1 (directional) |
|  | 0 08 090 | Decimal scale of following significands | x– Scale to be applied to following element descriptors |
|  | 0 22 104 | Scaled non-directional spectral wave density by frequency | 1A1A1A1x ...– Section 5 |
|  | 0 08 090 | Decimal scale of following significands | Set to missing |
|  | 0 22 186 | Direction from which waves are coming (see Note 7) | 1d1d1 – Section 5 |
|  | 0 22 187 | Directional spread of wave (see Note 7) | dsds – Section 5 |
|  | 1 05 000 | Delayed replication of 5 descriptors (see Note 8) |  |
|  | 0 31 001 | Delayed descriptor replication factor | n – Section 5 (number of directions counted); = 0 if Ib = 0 (non-directional) |
|  | 0 08 090 | Decimal scale of following significands | x – Scale to be applied to following element descriptors |

*(continued)*

*(Category 08 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 08 015 *(continued)* | 0 22 106 | Scaled directional spectral wave density by frequency | 1A1A1A1x ...– Section 5 |
|  | 0 08 090 | Decimal scale of following significands | Set to missing |
|  | 0 22 186 | Direction from which waves are coming | 1d1d1 – Section 5 |
|  | 0 22 187 | Directional spread of wave | dsds – Section 5 |
|  |  |  |  |
|  |  | (Template for WAVEOB data expressed as the wave number (Ia = 1 in FM-65 WAVEOB)) |  |
| 3 08 016 |  | *Identification (WAVEOB Section 0)* |  |
|  | 0 01 003 | WMO Region number/geographical area | A1 – First digit of WMO number (e.g. 62024 → 6) |
|  | 0 01 020 | WMO Region sub-area | bw – Second digit of WMO number (e.g. 62024 → 2) |
|  | 0 01 005 | Buoy/platform identifier | nbnbnb – Last 3 digits of WMO number (e.g. 62024 → 024) |
|  | 0 01 011 | Ship or mobile land station identifier | D .... D |
|  | 0 01 007 | Satellite identifier | I6I6I6 |
|  | 0 01 001 | WMO block number | II |
|  | 0 01 002 | WMO station number | iii – IIiii only apply to fixed sea stations |
|  | 0 02 044 | Indicator for method of calculating spectral wave data | Im – Code table 1744 (WAVEOB), 0 02 044 (BUFR) |
|  | 0 02 045 | Indicator for type of platform | Ip – Code table 1747 (WAVEOB), 0 02 045 (BUFR) |
|  | 3 01 011 | Year, month, day | YYMMJ – Date of observation |
|  | 3 01 012 | Hour, minute | GGgg – Time of observation |
|  | 3 01 021 | Latitude/longitude (high accuracy) | QcLaLaLaLa, LoLoLoLoLo |
|  |  | *Basic data (WAVEOB Section 0)* |  |
|  | 0 22 063 | Total water depth | 1hhhh |
|  | 0 22 076 | Direction from which dominant waves are coming | 9dddd – Section 0 |
|  | 0 22 077 | Directional spread of dominant wave | dsds – Section 0 |
|  | 0 22 094 | Total number of wave bands | 111BTBT – Section 1 |
|  | 0 25 044 | Wave sampling interval (space) | SSSS – Section 1 |
|  | 0 22 079 | Length of wave record | D’D’D’D’ – Section 1 |
|  | 1 05 002 | Replicate 5 descriptors 2 times | Replication over sensor type |
|  | 0 02 046 | Wave measurement instrumentation | = 1 Heave sensor,  = 2 Slope sensor |
|  | 0 22 070 | Significant wave height | 2HsHsHsHs or 6HseHseHseHse – Section 0 |
|  | 0 22 072 | Spectral peak wavelength | 3PpPpPpPp – Section 0 |
|  | 0 22 073 | Maximum wave height | 4HmHmHmHm |
|  | 0 22 075 | Average wavelength | 5PaPaPaPa – Section 0 |

*(continued)*

*(Category 08 – continued)*

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| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 08 016 |  | *Spectral data (WAVEOB Sections 1–5)* |  |
| *(continued)* | 1 27 000 | Delayed replication of 27 descriptors | Replication over sensor type |
|  | 0 31 001 | Delayed descriptor replication factor (see Note 5) | (0,1,2) normally 1 |
|  | 0 02 046 | Wave measurement instrumentation | = 1 Heave sensor,  = 2 Slope sensor |
|  | 0 08 090 | Decimal scale of following significands | x – Scale to be applied to following element descriptors |
|  | 0 22 103 | Scaled maximum non-directional spectral wave density by wave number | CmCmCm – Section 2 or CsmCsmCsm – Section 3 |
|  | 0 08 090 | Decimal scale of following significands | Set to missing |
|  | 0 22 084 | Band containing maximum non-directional spectral wave density | nmnm – Section 2 or nsmnsm – Section 3 |
|  | 1 20 000 | Delayed replication of 20 descriptors | Replication over bands |
|  | 0 31 001 | Delayed descriptor replication factor | 111BTBT – Section 1 (number of band) |
|  | 0 22 081 | Waveband central wave number | 1f1f1f1f1x ... – Section 1 |
|  | 0 22 108 | Spectral wave density ratio | 1c1c1c2c2 ... – Section 2 or 1cs1cs1cs2cs2 ... – Section 3 |
|  | 0 22 086 | Mean direction from which waves are coming | 1da1da1 – Section 4 |
|  | 0 22 087 | Principal direction from which waves are coming | da2da2 – Section 4 |
|  | 0 22 088 | First normalized polar coordinate from Fourier coefficients | r1r1 – Section 4 |
|  | 0 22 089 | Second normalized polar coordinate from Fourier coefficients | r2r2 – Section 4 |
|  | 1 05 000 | Delayed replication of 5 descriptors (see Note 6) |  |
|  | 0 31 001 | Delayed descriptor replication factor | n – Section 5 (number of directions counted); = 0 if Ib = 1 (directional) |
|  | 0 08 090 | Decimal scale of following significands | x – Scale to be applied to following element descriptors |
|  | 0 22 105 | Scaled non-directional spectral wave density by wave number | 1A1A1A1x ... – Section 5 |
|  | 0 08 090 | Decimal scale of following significands | Set to missing |
|  | 0 22 186 | Direction from which waves are coming (see Note 7) | 1d1d1 – Section 5 |
|  | 0 22 187 | Directional spread of wave (see Note 7) | dsds – Section 5 |
|  | 1 05 000 | Delayed replication of 5 descriptors (see Note 8) |  |
|  | 0 31 001 | Delayed descriptor replication factor | n – Section 5 (number of directions counted); = 0 if Ib = 0 (non-directional) |
|  | 0 08 090 | Decimal scale of following significands | x – Scale to be applied to following element descriptors |
|  | 0 22 107 | Scaled directional spectral wave density by wave number | 1A1A1A1x ... – Section 5 |

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*(Category 08 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 08 016 | 0 08 090 | Decimal scale of following significands | Set to missing |
| *(continued)* | 0 22 186 | Direction from which waves are coming | 1d1d1 – Section 5 |
|  | 0 22 187 | Directional spread of wave | dsds – Section 5 |
|  |  |  |  |
|  |  | (Sequence for reporting observations from offshore platforms) |  |
| 3 08 017 | 3 01 056 | Sequence for platform identification, type, time and location of the observation report |  |
|  | 3 02 001 | Pressure and 3-hour pressure change |  |
|  | 3 02 052 | Ship temperature and humidity data |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 056 | Sea/water temperature | Optional |
|  | 3 02 064 | Ship or other marine platform wind data (see Note) |  |
|  | 3 02 053 | Ship visibility data |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 004 | General cloud information | Optional |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 005 | Cloud layer | Optional |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 038 | Present and past weather | Optional |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 06 039 | Sequence for representation of basic wave measurements | Optional |
|  |  |  |  |
|  |  | (Monthly values from an ocean weather station in compliance with regional or national reporting practices) |  |
|  |  | *Station identification, date/time, horizontal and vertical coordinates* |  |
| 3 08 021 | 0 01 011 | Ship or mobile land station identifier | Ship’s call sign |
|  | 0 02 001 | Type of station |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 0 07 031 | Height of barometer above mean sea level |  |
|  |  | *Monthly mean values of pressure, temperature, vapour pressure and sea/water temperature* |  |
|  | 0 04 074 | Short time period or displacement |  |
|  | 0 04 023 | Time period or displacement | Number of days in the month |
|  | 0 08 023 | First-order statistics | = 4 Mean value |
|  | 0 10 051 | Pressure reduced to mean sea level |  |

*(continued)*

*(Category 08 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 08 021 *(continued)* | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Temperature measurement |
|  | 0 07 033 | Height of sensor above water surface | Temperature measurement |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 13 004 | Vapour pressure |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 0 07 033 | Height of sensor above water surface | Set to missing (cancel) |
|  | 3 02 056 | Sea/water temperature | Sea-surface temperature, method of measurement and depth below sea surface |
|  | 0 08 023 | First-order statistics | Set to missing (cancel) |
|  |  | *Precipitation* |  |
|  | 0 04 003 | Day | = 1 |
|  | 0 04 004 | Hour | = 0 |
|  | 0 04 074 | Short time period or displacement |  |
|  | 0 04 023 | Time period or displacement | Number of days in the month |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 13 060 | Total accumulated precipitation |  |
|  | 0 13 051 | Frequency group, precipitation |  |
|  | 0 04 053 | Number of days with precipitation equal to or more than 1 mm |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Monthly normals for an ocean weather station in compliance with regional or national reporting practices) |  |
|  |  | *Normals of pressure, temperature, vapour pressure and sea/water temperature* |  |
| 3 08 022 | 0 04 001 | Year | Beginning of the reference period |
|  | 0 04 001 | Year | Ending of the reference period |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day | = 1 |
|  | 0 04 004 | Hour | = 0 |
|  | 0 04 074 | Short time period or displacement |  |
|  | 0 04 022 | Time period or displacement | = 1 |
|  | 0 08 023 | First-order statistics | = 4 Mean value |
|  | 0 10 051 | Pressure reduced to mean sea level |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Temperature measurement |
|  | 0 07 033 | Height of sensor above water surface | Temperature measurement |

*(continued)*

*(Category 08 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 08 022 | 0 12 101 | Temperature/air temperature |  |
| *(continued)* | 0 13 004 | Vapour pressure |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 0 07 033 | Height of sensor above water surface | Set to missing (cancel) |
|  | 3 02 056 | Sea/water temperature | Sea-surface temperature, method of measurement and depth below sea surface |
|  | 0 08 023 | First-order statistics | Set to missing (cancel) |
|  |  | *Normals of precipitation* |  |
|  | 0 04 001 | Year | Beginning of the reference period |
|  | 0 04 001 | Year | Ending of the reference period |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day | = 1 |
|  | 0 04 004 | Hour | = 0 |
|  | 0 04 074 | Short time period or displacement |  |
|  | 0 04 022 | Time period or displacement | = 1 |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Precipitation measurement |
|  | 0 08 023 | First-order statistics | = 4 Mean value |
|  | 0 13 060 | Total accumulated precipitation |  |
|  | 0 04 053 | Number of days with precipitation equal to or more than 1 mm |  |
|  | 0 08 023 | First-order statistics | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Sequence for representation of monthly values suitable for CLIMAT SHIP data in compliance with regional or national reporting practices) |  |
| 3 08 023 | 3 08 021 | Monthly values from an ocean weather station in compliance with regional or national reporting practices |  |
|  | 3 08 022 | Monthly normals for an ocean weather station in compliance with regional or national reporting practices |  |

Notes:

(1) Descriptor 3 08 007 should be used instead of 3 08 003 to encode moving buoy/platform information.

(2) The time identification refers to the beginning of the one-month period.

(3) If the height of the sensor was changed during the period specified, the value shall be that which existed for the greater part of the period.

(4) In case of precipitation measurements, the one-month period begins at 06 UTC on the first day of the month and ends at 06 UTC on the first day of the following month.

(5) Normally 1, may be 2 if both heave and slope sensors are in use, or 0 if no spectral data.

(6) Non-directional spectra (Ib = 0 in WAVEOB) or partial directional spectra (Ib = 1 in WAVEOB with one direction per wave number). Count = 0 (full directional spectra) or 1 (non-directional spectra or partial directional spectra). Partial directional spectra have only one direction per wave number band.

*(continued)*

*(Category 08 – continued)*

(7) Missing for non-directional spectra.

(8) Full directional spectra (Ib = 1 in WAVEOB with more than one direction per wave number band). The replication count is the number of directions per wave number band that should normally cover the full circle.

**Category 09 – Vertical sounding sequences (conventional data)**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Vertical wind profile) |  |
| 3 09 001 | 3 01 037 | Land station for vertical soundings | Identification, etc. (land station, high accuracy position) |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 011 | Wind at height |  |
|  |  |  |  |
|  |  | (Vertical wind profile) |  |
| 3 09 002 | 3 01 038 | Land station for vertical soundings | Identification, etc. (land station, coarse accuracy position) |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 011 | Wind at height |  |
|  |  |  |  |
|  |  | (Vertical wind profile) |  |
| 3 09 003 | 3 01 037 | Land station for vertical soundings | Identification, etc. (land station, high accuracy position) |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 012 | Wind at pressure level |  |
|  |  |  |  |
|  |  | (Vertical wind profile) |  |
| 3 09 004 | 3 01 038 | Land station for vertical soundings | Identification, etc. (land station, coarse accuracy position) |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 012 | Wind at pressure level |  |
|  |  |  |  |
|  |  | (Vertical sounding with relative humidity) |  |
| 3 09 005 | 3 01 037 | Land station for vertical soundings | Identification, etc. (land station, high accuracy position) |
|  | 3 02 004 | General cloud information | Significant cloud layer |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 013 | Geopotential, temperature, humidity, wind at pressure level |  |
|  |  |  |  |
|  |  | (Vertical sounding with relative humidity) |  |
| 3 09 006 | 3 01 038 | Land station for vertical soundings | Identification, etc. (land station, coarse accuracy position) |
|  | 3 02 004 | General cloud information | Significant cloud layer |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 013 | Geopotential, temperature, humidity, wind at pressure level |  |

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*(Category 09 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Vertical sounding with dewpoint data) |  |
| 3 09 007 | 3 01 037 | Land station for vertical soundings | Identification, etc. (land station, high accuracy position) |
|  | 3 02 004 | General cloud information | Significant cloud layer |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 014 | Geopotential, temperature, dewpoint temperature, wind at pressure level |  |
|  |  |  |  |
|  |  | (Vertical sounding with dewpoint data) |  |
| 3 09 008 | 3 01 038 | Land station for vertical soundings | Identification, etc. (land station, coarse accuracy position) |
|  | 3 02 004 | General cloud information | Significant cloud layer |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 014 | Geopotential, temperature, dewpoint temperature, wind at pressure level |  |
|  |  |  |  |
|  |  | (Vertical wind profile) |  |
| 3 09 011 | 3 01 039 | Ship for vertical soundings | Ship’s identification, etc. |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 011 | Wind at height |  |
|  |  |  |  |
|  |  | (Vertical wind profile) |  |
| 3 09 012 | 3 01 039 | Ship for vertical soundings | Ship’s identification, etc. |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 012 | Wind at pressure level |  |
|  |  |  |  |
|  |  | (Vertical sounding with relative humidity) |  |
| 3 09 013 | 3 01 039 | Ship for vertical soundings | Ship’s identification, etc. |
|  | 3 02 004 | General cloud information | Significant cloud layer |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 013 | Geopotential, temperature, humidity, wind at pressure level |  |
|  |  |  |  |
|  |  | (Vertical sounding with dewpoint data) |  |
| 3 09 014 | 3 01 039 | Ship for vertical soundings | Ship’s identification, etc. |
|  | 3 02 004 | General cloud information | Significant cloud layer |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 014 | Geopotential, temperature, dewpoint temperature, wind at pressure level |  |

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*(Category 09 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Vertical wind profile) |  |
| 3 09 015 | 3 01 040 | Ship for vertical soundings | Ship’s identification, etc. |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 011 | Wind at height |  |
|  |  |  |  |
|  |  | (Vertical wind profile) |  |
| 3 09 016 | 3 01 040 | Ship for vertical soundings | Ship’s identification, etc. |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 012 | Wind at pressure level |  |
|  |  |  |  |
|  |  | (Vertical sounding with relative humidity) |  |
| 3 09 017 | 3 01 040 | Ship for vertical soundings | Ship’s identification, etc. |
|  | 3 02 004 | General cloud information | Significant cloud layer |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 013 | Geopotential, temperature, humidity, wind at pressure level |  |
|  |  |  |  |
|  |  | (Vertical sounding with dewpoint data) |  |
| 3 09 018 | 3 01 040 | Ship for vertical soundings | Ship’s identification, etc. |
|  | 3 02 004 | General cloud information | Significant cloud layer |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 014 | Geopotential, temperature, dewpoint temperature, wind at pressure level |  |
|  |  |  |  |
|  |  | (Wind profiler – wind data sounding) |  |
| 3 09 019 | 3 01 031 | Identification and type of station, date/time, location (high accuracy), height of station |  |
|  | 0 02 003 | Type of measuring equipment used |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 011 | Wind at height |  |
|  |  |  |  |
|  |  | (Wind profiler – Cartesian coordinates) |  |
| 3 09 020 | 3 01 031 | Identification and type of station, date/time, location (high accuracy), height of station |  |
|  | 0 02 003 | Type of measuring equipment used |  |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 003 | Geopotential |  |
|  | 0 11 003 | u-component |  |
|  | 0 11 004 | v-component |  |
|  | 0 11 005 | w-component |  |

*(continued)*

*(Category 09 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Radar wind profiler wind data (product data)) |  |
| 3 09 021 | 3 01 001 | WMO block and station numbers |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 3 01 014 | Time period |  |
|  | 0 02 003 | Type of measuring equipment used |  |
|  | 0 02 121 | Mean frequency |  |
|  | 1 12 000 | Delayed replication of 12 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 007 | Height |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 11 003 | u-component |  |
|  | 0 11 110 | Uncertainty in u-component |  |
|  | 0 11 004 | v-component |  |
|  | 0 11 111 | Uncertainty in v-component |  |
|  | 0 33 002 | Quality information |  |
|  | 0 11 006 | w-component |  |
|  | 0 11 112 | Uncertainty in w-component |  |
|  | 0 33 002 | Quality information |  |
|  | 0 10 071 | Vertical resolution |  |
|  | 0 27 079 | Horizontal width of sampled volume |  |
|  |  |  |  |
|  |  | (RASS virtual temperature (product data)) |  |
| 3 09 022 | 3 01 001 | WMO block and station numbers |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 3 01 014 | Time period |  |
|  | 0 02 003 | Type of measuring equipment used |  |
|  | 0 02 121 | Mean frequency |  |
|  | 1 10 000 | Delayed replication of 10 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 007 | Height |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 12 007 | Virtual temperature |  |
|  | 0 12 008 | Uncertainty in virtual temperature |  |
|  | 0 33 002 | Quality information |  |
|  | 0 11 006 | w-component |  |
|  | 0 11 112 | Uncertainty in w-component |  |
|  | 0 33 002 | Quality information |  |
|  | 0 10 071 | Vertical resolution |  |
|  | 0 27 079 | Horizontal width of sampled volume |  |

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*(Category 09 – continued)*

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| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Lidar sequence) |  |
| 3 09 023 |  | *Header section* |  |
|  | 3 01 001 | WMO block and station numbers |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 3 01 014 | Time period |  |
|  | 0 02 003 | Type of measuring equipment used |  |
|  |  | *Cloud data section* |  |
|  | 3 02 004 | General cloud information |  |
|  | 3 02 005 | Cloud layer |  |
|  |  | *Backscatter data section* |  |
|  | 1 14 000 | Delayed replication of 14 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 007 | Height |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor | Number of wavelength measurements present in the data |
|  | 0 02 121 | Mean frequency |  |
|  | 0 15 063 | Attenuated backscatter |  |
|  | 0 15 064 | Uncertainty in attenuated backscatter |  |
|  | 0 15 065 | Particle backscatter coefficient |  |
|  | 0 15 066 | Uncertainty in particle backscatter coefficient |  |
|  | 0 15 067 | Particle extinction coefficient |  |
|  | 0 15 068 | Uncertainty in particle extinction coefficient |  |
|  | 0 15 069 | Particle lidar ratio |  |
|  | 0 15 070 | Uncertainty in lidar ratio |  |
|  | 0 15 071 | Particle depolarization ratio |  |
|  | 0 15 072 | Uncertainty in depolarization ratio |  |
|  | 0 33 002 | Quality information |  |
|  | 0 10 071 | Vertical resolution |  |
|  | 0 27 079 | Horizontal width of sampled volume |  |

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*(Category 09 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Ozone sonde flight data) (see Note 1) |  |
| 3 09 030 | 0 15 004 | Ozone sounding correction factor (CF) |  |
|  | 0 15 005 | Ozone p |  |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 04 015 | Time increment | Since launch time, if needed, in minutes |
|  | 0 08 006 | Ozone vertical sounding significance |  |
|  | 0 07 004 | Pressure |  |
|  | 0 15 003 | Measured ozone partial pressure (sounding) |  |
|  |  |  |  |
|  |  | (Ozone sonde flight data) |  |
| 3 09 031 | 0 15 004 | Ozone sounding correction factor (CF) |  |
|  | 0 15 005 | Ozone p |  |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 04 025 | Time period or displacement | Since launch time in minutes |
|  | 0 08 006 | Ozone vertical sounding significance |  |
|  | 0 07 004 | Pressure |  |
|  | 0 15 003 | Measured ozone partial pressure (sounding) |  |
|  |  |  |  |
|  |  | (Ozone sounding not coupled to a ground-based spectrophotometer) (see Note 2) |  |
| 3 09 040 | 3 01 075 | Sounding identification |  |
|  | 3 01 076 | Ozone sounding instrumentation |  |
|  | 3 09 030 | Ozone sonde flight data |  |
|  |  |  |  |
|  |  | (Ozone sounding coupled to measurements from a Brewer ground-based spectrophotometer; the total ozone obtained from the Brewer is a single value) (see Note 2) |  |
| 3 09 041 | 3 07 041 | Total ozone measurement from a Brewer ground-based spectrophotometer obtained from a single observation | Description of the ground-based part |
|  | 3 01 075 | Sounding identification | Identification of the ozone sounding part |
|  | 3 01 076 | Ozone sounding instrumentation |  |
|  | 3 09 030 | Ozone sonde flight data |  |
|  |  |  |  |
|  |  | (Ozone sounding coupled to measurements from a Brewer ground-based spectrophotometer; the total ozone obtained from the Brewer is an averaged value) (see Note 2) |  |
| 3 09 042 | 3 07 042 | Total ozone measurement from a Brewer ground-based spectrophotometer obtained from averaged observations | Description of the ground-based part |
|  | 3 01 075 | Sounding identification | Identification of the ozone sounding part |
|  | 3 01 076 | Ozone sounding instrumentation |  |
|  | 3 09 030 | Ozone sonde flight data |  |

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*(Category 09 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Ozone sounding coupled to measurements from a Dobson ground-based spectrophotometer; the total ozone obtained from the Dobson is a single value) (see Note 2) |  |
| 3 09 043 | 3 07 043 | Total ozone measurement from a Dobson ground-based spectrophotometer obtained from a single observation | Description of the ground-based part |
|  | 3 01 075 | Sounding identification | Identification of the ozone sounding part |
|  | 3 01 076 | Ozone sounding instrumentation |  |
|  | 3 09 030 | Ozone sonde flight data |  |
|  |  |  |  |
|  |  | (Ozone sounding coupled to measurements from a Dobson ground-based spectrophotometer; the total ozone obtained from the Dobson is an averaged value) (see Note 2) |  |
| 3 09 044 | 3 07 044 | Total ozone measurement from a Dobson ground-based spectrophotometer obtained from averaged observations | Description of the ground-based part |
|  | 3 01 075 | Sounding identification | Identification of the ozone sounding part |
|  | 3 01 076 | Ozone sounding instrumentation |  |
|  | 3 09 030 | Ozone sonde flight data |  |
|  |  |  |  |
|  |  | (Ozone sounding not coupled to a ground-based spectrophotometer) |  |
| 3 09 045 | 3 01 075 | Sounding identification |  |
|  | 3 01 076 | Ozone sounding instrumentation |  |
|  | 3 09 031 | Ozone sonde flight data |  |
|  |  |  |  |
|  |  | (Ozone sounding coupled to measurements from a Brewer ground-based spectrophotometer; the total ozone obtained from the Brewer is a single value) |  |
| 3 09 046 | 3 07 041 | Total ozone measurement from a Brewer ground-based spectrophotometer obtained from a single observation | Description of the ground-based part |
|  | 3 01 075 | Sounding identification | Identification of the ozone sounding part |
|  | 3 01 076 | Ozone sounding instrumentation |  |
|  | 3 09 031 | Ozone sonde flight data |  |
|  |  |  |  |
|  |  | (Ozone sounding coupled to measurements from a Brewer ground-based spectrophotometer; the total ozone obtained from the Brewer is an averaged value) |  |
| 3 09 047 | 3 07 042 | Total ozone measurement from a Brewer ground-based spectrophotometer obtained from averaged observations | Description of the ground-based part |
|  | 3 01 075 | Sounding identification | Identification of the ozone sounding part |
|  | 3 01 076 | Ozone sounding instrumentation |  |
|  | 3 09 031 | Ozone sonde flight data |  |

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*(Category 09 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Ozone sounding coupled to measurements from a Dobson ground-based spectrophotometer; the total ozone obtained from the Dobson is a single value) |  |
| 3 09 048 | 3 07 043 | Total ozone measurement from a Dobson ground-based spectrophotometer obtained from a single observation | Description of the ground-based part |
|  | 3 01 075 | Sounding identification | Identification of the ozone sounding part |
|  | 3 01 076 | Ozone sounding instrumentation |  |
|  | 3 09 031 | Ozone sonde flight data |  |
|  |  |  |  |
|  |  | (Ozone sounding coupled to measurements from a Dobson ground-based spectrophotometer; the total ozone obtained from the Dobson is an averaged value) |  |
| 3 09 049 | 3 07 044 | Total ozone measurement from a Dobson ground-based spectrophotometer obtained from averaged observations | Description of the ground-based part |
|  | 3 01 075 | Sounding identification | Identification of the ozone sounding part |
|  | 3 01 076 | Ozone sounding instrumentation |  |
|  | 3 09 031 | Ozone sonde flight data |  |
|  |  |  |  |
|  |  | (Sequence for representation of PILOT, PILOT SHIP and PILOT MOBIL observation type data with pressure as the vertical coordinate) |  |
| 3 09 050 | 3 01 110 | Identification of launch site and instrumentation for wind measurements |  |
|  | 3 01 113 | Date/time of launch |  |
|  | 3 01 114 | Horizontal and vertical coordinates of launch site |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 03 050 | Wind data at a pressure level with radiosonde position |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 051 | Wind shear data at a pressure level with radiosonde position |  |
|  |  |  |  |
|  |  | (Sequence for representation of PILOT, PILOT SHIP and PILOT MOBIL observation type data with height as the vertical coordinate) |  |
| 3 09 051 | 3 01 110 | Identification of launch site and instrumentation for wind measurements |  |
|  | 3 01 113 | Date/time of launch |  |
|  | 3 01 114 | Horizontal and vertical coordinates of launch site |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 03 052 | Wind data at a height level with radiosonde position |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 053 | Wind shear data at a height level with radiosonde position |  |

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*(Category 09 – continued)*

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| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Sequence for representation of TEMP, TEMP SHIP and TEMP MOBIL observation type data) |  |
| 3 09 052 | 3 01 111 | Identification of launch site and instrumentation for P, T, U and wind measurements |  |
|  | 3 01 113 | Date/time of launch |  |
|  | 3 01 114 | Horizontal and vertical coordinates of launch site |  |
|  | 3 02 049 | Cloud information reported with vertical soundings |  |
|  | 0 22 043 | Sea/water temperature |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 03 054 | Temperature, dewpoint and wind data at a pressure level with radiosonde position |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 051 | Wind shear data at a pressure level with radiosonde position |  |
|  |  |  |  |
|  |  | (Sequence for representation of TEMP DROP observation type data) |  |
| 3 09 053 | 3 01 112 | Identification of launch point and instrumentation of dropsonde |  |
|  | 3 01 113 | Date/time of launch |  |
|  | 3 01 114 | Horizontal and vertical coordinates of launch site |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 03 054 | Temperature, dewpoint and wind data at a pressure level with radiosonde position |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 051 | Wind shear data at a pressure level with radiosonde position |  |
|  |  |  |  |
|  |  | (Sequence for representation of CLIMAT TEMP and CLIMAT TEMP SHIP data) |  |
| 3 09 054 | 3 01 001 | WMO block and station numbers | Identification of launch site |
|  | 0 01 011 | Ship or mobile land station identifier | Ship’s call sign |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 0 07 031 | Height of barometer above mean sea level |  |
|  | 0 07 007 | Height | Release of sonde above mean sea level |
|  |  | *Monthly mean data* |  |
|  | 0 04 023 | Time period or displacement | Number of days in the month |
|  | 0 04 059 | Times of observation used to compute the reported mean values |  |
|  | 1 15 000 | Delayed replication of 15 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |

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*(Category 09 – continued)*

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| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 09 054 | 0 08 001 | Vertical sounding significance |  |
| *(continued)* | 0 08 023 | First-order statistics | = 4 Mean value |
|  | 0 07 004 | Pressure |  |
|  | 0 10 009 | Geopotential height |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 12 103 | Dewpoint temperature |  |
|  | 0 08 023 | First-order statistics | = 32 Vector mean |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 08 023 | First-order statistics | Set to missing |
|  | 0 11 019 | Steadiness of wind |  |
|  | 0 08 050 | Qualifier for number of missing values in calculation of statistic | = 2 Temperature |
|  | 0 08 020 | Total number of missing entities (with respect to accumulation or average) | Days |
|  | 0 08 050 | Qualifier for number of missing values in calculation of statistic | = 9 Wind |
|  | 0 08 020 | Total number of missing entities (with respect to accumulation or average) | Days |
|  |  |  |  |
|  |  | (Template for the representation of high resolution radiosonde data with geopotential height as the vertical coordinate) |  |
| 3 09 055 | 3 01 111 | Identification of launch site and instrumentation for P, T, U and wind measurements |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 01 081 | Radiosonde serial number |  |
|  | 0 01 082 | Radiosonde ascension number |  |
|  | 0 02 067 | Radiosonde operating frequency |  |
|  | 0 02 095 | Type of pressure sensor |  |
|  | 0 02 096 | Type of temperature sensor |  |
|  | 0 02 097 | Type of humidity sensor |  |
|  | 0 02 081 | Type of balloon |  |
|  | 0 02 082 | Weight of balloon |  |
|  | 0 02 084 | Type of gas used in balloon |  |
|  | 0 02 191 | Geopotential height calculation |  |
|  | 3 01 113 | Date/time of launch (see Note 3) |  |
|  | 3 01 114 | Horizontal and vertical coordinates of launch site |  |
|  | 0 10 004 | Pressure |  |
|  | 3 02 032 | Temperature and humidity data |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 02 002 | Type of instrumentation for wind measurement |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 0 20 003 | Present weather |  |
|  | 3 02 049 | Cloud information reported with vertical soundings |  |
|  | 0 22 043 | Sea/water temperature |  |

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*(Category 09 – continued)*

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| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 09 055 | 1 01 000 | Delayed replication of 1 descriptor |  |
| *(continued)* | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 03 055 | Temperature, dewpoint, relative humidity and wind data at a height level with radiosonde position (see Notes 4, 5 and 6) |  |
|  |  |  |  |
|  |  | (Sequence for representation of radiosonde descent data) |  |
| 3 09 056 | 3 01 150 | WIGOS identifier |  |
|  | 3 01 111 | Identification of launch site and instrumentation for P, T, U and wind measurements |  |
|  | 3 01 128 | Additional information on radiosonde ascent | Valid also for decent |
|  | 3 01 113 | Date/time of launch | (see Note 10) |
|  | 0 08 091 | Coordinates significance | = 2 Start of observation |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 007 | Height | Begin of descending of radiosonde above mean sea level |
|  | 0 08 091 | Coordinates significance | Set to missing (cancel) |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 03 056 | Temperature, dewpoint and wind data at a pressure level with radiosonde position and higher precision of pressure and geopotential height | (see Notes 11 and 12) |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 051 | Wind shear data at a pressure level with radiosonde position |  |
|  |  |  |  |
|  |  | (Sequence for representation of TEMP, TEMP SHIP and TEMP MOBIL observation type data with higher precision of pressure and geopotential height) |  |
| 3 09 057 | 3 01 150 | WIGOS identifier |  |
|  | 3 01 111 | Identification of launch site and instrumentation for P, T, U and wind measurements |  |
|  | 3 01 128 | Additional information on radiosonde ascent |  |
|  | 3 01 113 | Date/time of launch |  |
|  | 3 01 114 | Horizontal and vertical coordinates of launch site |  |
|  | 3 02 049 | Cloud information reported with vertical soundings |  |
|  | 0 22 043 | Sea/water temperature |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 03 056 | Temperature, dewpoint and wind data at a pressure level with radiosonde position and higher precision of pressure and geopotential height |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 051 | Wind shear data at a pressure level with radiosonde position |  |

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*(Category 09 – continued)*

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| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Radiosonde complete registration and surface observation) |  |
| 3 09 060 | 3 01 123 | Radiosonde full header information |  |
|  | 3 01 121 | Radiosonde launch point location |  |
|  | 3 02 050 | Radiosonde surface observation |  |
|  | 3 03 040 | Radiosonde duration of flight and termination information |  |
|  |  |  |  |
|  |  | (Raw PTU) |  |
| 3 09 061 | 3 01 120 | Radiosonde abbreviated header and launch information |  |
|  | 0 08 041 | Data significance | = 6 Flight level observation |
|  | 3 01 122 | Date/time (to hundredths of second) |  |
|  | 2 01 131 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 0 25 069 | Flight level pressure corrections |  |
|  | 0 07 004 | Pressure |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 33 007 | Per cent confidence | Pressure |
|  | 0 33 035 | Manual/automatic quality control | Pressure |
|  | 0 33 015 | Data quality check indicator | Pressure |
|  | 0 13 009 | Relative humidity |  |
|  | 0 33 007 | Per cent confidence | Relative humidity |
|  | 0 33 035 | Manual/automatic quality control | Relative humidity |
|  | 0 33 015 | Data quality check indicator | Relative humidity |
|  | 0 02 013 | Solar and infrared radiation correction |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 33 007 | Per cent confidence | Temperature |
|  | 0 33 035 | Manual/automatic quality control | Temperature |
|  | 0 33 015 | Data quality check indicator | Temperature |
|  |  |  |  |
|  |  | (Raw GPS unsmoothed wind) |  |
| 3 09 062 | 3 01 120 | Radiosonde abbreviated header and launch information |  |
|  | 0 08 041 | Data significance | = 6 Flight level observation |
|  | 3 01 122 | Date/time (to hundredths of second) |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 33 035 | Manual/automatic quality control | Latitude |
|  | 0 33 015 | Data quality check indicator | Latitude |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 33 035 | Manual/automatic quality control | Longitude |

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*(Category 09 – continued)*

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| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 09 062 | 0 33 015 | Data quality check indicator | Longitude |
| *(continued)* | 0 07 007 | Height |  |
|  | 0 33 035 | Manual/automatic quality control | Height |
|  | 0 33 015 | Data quality check indicator | Height |
|  | 0 11 003 | u-component |  |
|  | 0 33 035 | Manual/automatic quality control | u-component |
|  | 0 33 015 | Data quality check indicator | u-component |
|  | 0 11 004 | v-component |  |
|  | 0 33 035 | Manual/automatic quality control | v-component |
|  | 0 33 015 | Data quality check indicator | v-component |
|  | 0 33 007 | Per cent confidence | Raw GPS unsmoothed wind |
|  |  |  |  |
|  |  | (Raw GPS smoothed wind) |  |
| 3 09 063 | 3 01 120 | Radiosonde abbreviated header and launch information |  |
|  | 0 08 041 | Data significance | = 6 Flight level observation |
|  | 3 01 122 | Date/time (to hundredths of second) |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 33 035 | Manual/automatic quality control | Latitude |
|  | 0 33 015 | Data quality check indicator | Latitude |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 33 035 | Manual/automatic quality control | Longitude |
|  | 0 33 015 | Data quality check indicator | Longitude |
|  | 0 07 007 | Height |  |
|  | 0 33 035 | Manual/automatic quality control | Height |
|  | 0 33 015 | Data quality check indicator | Height |
|  | 0 11 003 | u-component |  |
|  | 0 33 035 | Manual/automatic quality control | u-component |
|  | 0 33 015 | Data quality check indicator | u-component |
|  | 0 11 004 | v-component |  |
|  | 0 33 035 | Manual/automatic quality control | v-component |
|  | 0 33 015 | Data quality check indicator | v-component |
|  | 0 33 007 | Per cent confidence | Raw GPS smoothed wind |
|  |  |  |  |
|  |  | (Processed PTU) |  |
| 3 09 064 | 3 01 120 | Radiosonde abbreviated header and launch information |  |
|  | 0 08 041 | Data significance | = 6 Flight level observation |
|  | 3 01 122 | Date/time (to hundredths of second) |  |
|  | 2 01 131 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 1 04 002 | Replicate 4 descriptors 2 times |  |
|  | 0 25 069 | Flight level pressure corrections |  |
|  | 0 07 004 | Pressure |  |
|  | 0 33 035 | Manual/automatic quality control | Pressure |
|  | 0 33 015 | Data quality check indicator | Pressure |

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*(Category 09 – continued)*

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| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 09 064 | 0 13 003 | Relative humidity |  |
| *(continued)* | 0 33 035 | Manual/automatic quality control | Relative humidity |
|  | 0 33 015 | Data quality check indicator | Relative humidity |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 1 04 002 | Replicate 4 descriptors 2 times |  |
|  | 0 02 013 | Solar and infrared radiation correction |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 33 035 | Manual/automatic quality control | Temperature |
|  | 0 33 015 | Data quality check indicator | Temperature |
|  | 0 12 103 | Dewpoint temperature |  |
|  | 0 33 035 | Manual/automatic quality control | Dewpoint temperature |
|  | 0 33 015 | Data quality check indicator | Dewpoint temperature |
|  | 0 10 009 | Geopotential height |  |
|  | 0 33 035 | Manual/automatic quality control | Geopotential height |
|  | 0 33 015 | Data quality check indicator | Geopotential height |
|  |  |  |  |
|  |  | (Processed GPS) |  |
| 3 09 065 | 3 01 120 | Radiosonde abbreviated header and launch information |  |
|  | 0 08 041 | Data significance | = 6 Flight level observation |
|  | 3 01 122 | Date/time (to hundredths of second) |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 33 035 | Manual/automatic quality control | Latitude |
|  | 0 33 015 | Data quality check indicator | Latitude |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 33 035 | Manual/automatic quality control | Longitude |
|  | 0 33 015 | Data quality check indicator | Longitude |
|  | 0 07 007 | Height |  |
|  | 0 33 035 | Manual/automatic quality control | Height |
|  | 0 33 015 | Data quality check indicator | Height |
|  | 0 11 003 | u-component |  |
|  | 0 33 035 | Manual/automatic quality control | u-component |
|  | 0 33 015 | Data quality check indicator | u-component |
|  | 0 11 004 | v-component |  |
|  | 0 33 035 | Manual/automatic quality control | v-component |
|  | 0 33 015 | Data quality check indicator | v-component |
|  |  |  |  |
|  |  | (Standard and significant levels) |  |
| 3 09 066 | 3 01 120 | Radiosonde abbreviated header and launch information |  |
|  | 0 08 041 | Data significance | = 6 Flight level observation |
|  | 3 01 122 | Date/time (to hundredths of second) |  |
|  | 0 08 040 | Flight level significance |  |
|  | 2 01 131 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 0 25 069 | Flight level pressure corrections |  |

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*(Category 09 – continued)*

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| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 09 066 | 0 07 004 | Pressure |  |
| *(continued)* | 0 13 003 | Relative humidity |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 02 013 | Solar and infrared radiation correction |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 12 103 | Dewpoint temperature |  |
|  | 0 10 009 | Geopotential height |  |
|  | 0 10 007 | Height |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 11 001 | Wind direction |  |
|  |  |  |  |
|  |  | (Vertical profile for numerical weather prediction data) |  |
|  |  | *Identification* |  |
| 3 09 070 | 0 01 035 | Originating centre |  |
|  | 0 01 032 | Generating application |  |
|  | 0 01 015 | Station or site name |  |
|  | 0 01 063 | ICAO location indicator |  |
|  | 3 01 001 | WMO block and station numbers |  |
|  |  | *Location and reference time* |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute | Reference time of the forecast (T-zero) |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 2 07 001 | Increase scale, reference value and data width  Increase scale factor by 1; reference value and data width are recalculated in accordance with the Table C specification of operator 2 07 YYY | /see left column |
|  | 0 10 001 | Height of land surface (see Note 7) | Station elevation (non coordinate) |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 08 086 | Vertical significance for NWP | Bit 9 set to 1 Virtual station height |
|  | 0 07 030 | Height of station ground above mean sea level  Elevation of model terrain at the latitude/longitude of station. As qualified by 0 08 086, this value is both station and model specific. | /see left column |
|  |  | *Vertical profile metadata* |  |
|  | 0 25 031 | NWP-generated vertical profile thinning method (see Note 8) |  |
|  | 0 08 021 | Time significance | = 4 Forecast,  = 16 Analysis,  = 27 First guess |
|  | 0 04 014 | Time increment  Validity time of the forecast expressed as a Delta T from reference time. In the case of an analysis or 00 hour forecast, the value is set to zero | /see left column |
|  |  | *Point data at station height (including column-  integrated data)* |  |
|  | 0 10 004 | Pressure |  |
|  | 0 10 051 | Pressure reduced to mean sea level |  |

*(continued)*

*(Category 09 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 09 070 | 0 10 009 | Geopotential height |  |
| *(continued)* | 0 20 010 | Cloud cover (total) |  |
|  | 0 13 095 | Total column water vapour |  |
|  |  | *Replication loop for levels* |  |
|  | 1 28 000 | Delayed replication of 28 descriptors |  |
|  | 0 31 002 | Extended delayed descriptor replication factor  The number of levels used in the vertical profile is determined by this replication. The number of levels is discretionary and comprises all agl levels and pressure levels | /see left column |
|  |  | *Data on pressure coordinates* |  |
|  | 1 13 000 | Delayed replication of 13 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor | = 1 Vertical coordinate is pressure,  = 0 Otherwise |
|  | 0 08 086 | Vertical significance for NWP | Bit 1 set to 0 and other bits as appropriate |
|  | 0 07 004 | Pressure (see Note 9) |  |
|  | 0 11 001 | Wind direction | Degrees true |
|  | 0 11 002 | Wind speed | m/s |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 12 102 | Wet-bulb temperature |  |
|  | 0 12 103 | Dewpoint temperature |  |
|  | 0 10 009 | Geopotential height |  |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor | = 1 Optional enhanced model data is to be included |
|  | 0 11 021 | Relative vorticity |  |
|  | 0 11 022 | Divergence |  |
|  | 0 11 005 | w-component | Vertical motion |
|  |  | *Data at 10 metres above ground level* |  |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor | = 1 Vertical coordinate is 10 metres above ground level,  = 0 Otherwise |
|  | 0 08 086 | Vertical significance for NWP | Bit 1 set to 1, bit 8 set to 1 |
|  | 0 07 006 | Height above station | = 10 m |
|  | 0 11 001 | Wind direction | Degrees true |
|  | 0 11 002 | Wind speed | m/s |
|  |  | *Data at 2 metres* *above ground level* |  |
|  | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor | = 1 Vertical coordinate is 2 metres above ground level,  = 0 Otherwise |
|  | 0 08 086 | Vertical significance for NWP |  |
|  | 0 07 006 | Height above station | = 2 m |

*(continued)*

*(Category 09 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 09 070 | 0 12 101 | Temperature/air temperature |  |
| *(continued)* | 0 12 102 | Wet-bulb temperature |  |
|  | 0 12 103 | Dewpoint temperature |  |
|  |  |  |  |
|  |  | (Sequence for representation of PILOT in the area of ASECNA) |  |
| 3 09 071 | 3 01 001 | WMO block and station numbers |  |
|  | 0 02 014 | Tracking technique/status of system used |  |
|  | 0 02 003 | Type of measuring equipment used |  |
|  | 3 01 113 | Date/time of launch |  |
|  | 3 01 114 | Horizontal and vertical coordinates of launch site |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 0 07 007 | Height | Release of balloon |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 009 | Geopotential height |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |

Notes:

(1) Sequence 3 09 030 is deprecated because of incorrect usage of descriptor 0 04 015; sequence 3 09 031 should be used instead.

(2) This sequence is deprecated because it includes deprecated sequence 3 09 030; sequence 3 09 045, 3 09 046, 3 09 047, 3 09 048 and 3 09 049 should be used instead of 3 09 040, 3 09 041, 3 09 042, 3 09 043 and 3 09 044, respectively.

(3) Time of launch 3 01 013 in the sequence shall be reported with the highest possible accuracy available. If the launch time is not available with second accuracy, the entry for seconds shall be put to zero.

(4) Long time displacement 0 04 086 in the sequence represents the time offset from the launch time 3 01 013 (in seconds).

(5) Latitude displacement 0 05 015 in the sequence represents the latitude offset from the latitude of the launch site. Longitude displacement 0 06 015 in the sequence represents the longitude offset from the longitude of the launch site.

(6) If the radiosonde is equipped with a relative humidity sensor, 0 13 009 in the sequence shall be reported as mandatory and dewpoint temperature may be included as a derived value. If the radiosonde is equipped with a dewpoint temperature sensor, 0 12 103 in the sequence shall be reported and 0 13 009 shall be set to a missing value.

(7) This value is the official or best estimate of the actual elevation of the station. It is provided for comparison with the model’s virtual terrain elevation. The two can be substantially different in rugged terrain. The scale factor is increased to make the value directly comparable with 0 07 030 below.

(8) In this instance, the term “thinning” refers to a method that may be applied to select a subset of levels from a model that may have many native vertical levels. Selecting only a subset reduces the size of the pseudo-sounding, at the possible cost of information loss and extra processing.

(9) Non-surface levels on the model’s native vertical coordinate are transposed to pressure coordinate. This makes the levels more readily intelligible for human interpretation and easier to use by generic display applications. The levels may correspond exactly to native model levels, or be interpolated between model levels to pressure levels chosen by the generating centre.

*(continued)*

*(Category 09 – continued)*

(10) Date/time of launch indicates date/time of start of descent measurement.

(11) In this sequence for representation of radiosonde descent data, indication of standard levels using the extended vertical sounding significance (0 08 042) is not mandatory.

(12) Data represented by this sequence should be sorted in descending order with respect to pressure.

**Category 10 – Vertical sounding sequences (satellite data)**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Satellite – brightness temperature) |  |
| 3 10 001 | 3 01 042 | Satellite identifier, instrument, data-processing technique, date/time, location |  |
|  | 3 03 031 | Significance data, land/sea, skin temperature |  |
|  | 3 03 032 | Cloud |  |
|  | 1 01 026 | Replicate 1 descriptor 26 times |  |
|  | 3 03 025 | Satellite channel and brightness temperature |  |
|  |  |  |  |
|  |  | (Satellite – low level) |  |
| 3 10 002 | 3 01 042 | Satellite identifier, instrument, data-processing technique, date/time, location |  |
|  | 3 03 031 | Significance data, land/sea, skin temperature |  |
|  | 3 03 032 | Cloud |  |
|  | 1 01 009 | Replicate 1 descriptor 9 times |  |
|  | 3 03 023 | Layer mean temperature |  |
|  |  |  |  |
|  |  | (Satellite – high level) |  |
| 3 10 003 | 3 01 042 | Satellite identifier, instrument, data-processing technique, date/time, location |  |
|  | 3 03 031 | Significance data, land/sea, skin temperature |  |
|  | 3 03 032 | Cloud |  |
|  | 1 01 006 | Replicate 1 descriptor 6 times |  |
|  | 3 03 023 | Layer mean temperature |  |
|  |  |  |  |
|  |  | (Satellite – precipitable water) |  |
| 3 10 004 | 3 01 042 | Satellite identifier, instrument, data-processing technique, date/time, location |  |
|  | 3 03 031 | Significance data, land/sea, skin temperature |  |
|  | 3 03 032 | Cloud |  |
|  | 1 01 003 | Replicate 1 descriptor 3 times |  |
|  | 3 03 024 | Precipitable water |  |
|  |  |  |  |
| 3 10 005 | 3 01 042 | Satellite identifier, instrument, data-processing technique, date/time, location |  |
|  | 3 03 031 | Significance data, land/sea, skin temperature |  |
|  | 3 03 033 | Cloud |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 025 | Satellite channel and brightness temperature |  |
|  |  |  |  |
| 3 10 006 | 3 01 042 | Satellite identifier, instrument, data-processing technique, date/time, location |  |
|  | 3 03 031 | Significance data, land/sea, skin temperature |  |
|  | 3 03 033 | Cloud |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 023 | Layer mean temperature |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 007 | 3 01 042 | Satellite identifier, instrument, data-processing technique, date/time, location |  |
|  | 3 03 031 | Significance data, land/sea, skin temperature |  |
|  | 3 03 033 | Cloud |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 03 024 | Precipitable water |  |
|  |  |  |  |
|  |  | (ATOVS HIRS report) |  |
| 3 10 008 | 3 10 011 | ATOVS field of view variables |  |
|  | 1 01 019 | Replicate 1 descriptor 19 times |  |
|  | 3 10 012 | ATOVS channel variables |  |
|  | 0 02 150 | TOVS/ATOVS/AVHRR instrumentation channel number |  |
|  | 0 25 079 | Albedo-radiance solar filtered irradiance for ATOVS |  |
|  | 0 25 080 | Albedo-radiance equivalent filter width for ATOVS |  |
|  | 0 33 032 | Channel quality flags for ATOVS |  |
|  | 0 14 045 | Channel radiance |  |
|  |  |  |  |
|  |  | (ATOVS AMSU-A report) |  |
| 3 10 009 | 3 10 011 | ATOVS field of view variables |  |
|  | 1 01 015 | Replicate 1 descriptor 15 times |  |
|  | 3 10 012 | ATOVS channel variables |  |
|  |  |  |  |
|  |  | (ATOVS AMSU-B/MHS report) |  |
| 3 10 010 | 3 10 011 | ATOVS field of view variables |  |
|  | 1 01 005 | Replicate 1 descriptor 5 times |  |
|  | 3 10 012 | ATOVS channel variables |  |
|  |  |  |  |
|  |  | (ATOVS field of view variables) |  |
| 3 10 011 | 0 08 070 | Vertical sounding product qualifier |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 01 034 | Identification of originating/generating sub-centre |  |
|  | 0 08 070 | Vertical sounding product qualifier |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 01 034 | Identification of originating/generating sub-centre |  |
|  | 0 01 007 | Satellite identifier |  |
|  | 0 02 048 | Satellite sensor indicator |  |
|  | 0 05 040 | Orbit number |  |
|  | 0 25 075 | Satellite antenna corrections version number |  |
|  | 2 01 133 | Change data width |  |
|  | 0 05 041 | Scan line number |  |
|  | 2 01 000 | Change data width |  |
|  | 0 05 043 | Field of view number |  |
|  | 0 25 070 | Major frame count |  |
|  | 0 33 030 | Scan line status flags for ATOVS |  |
|  | 0 33 031 | Scan line quality flags for ATOVS |  |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 011 | 0 04 003 | Day |  |
| *(continued)* | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 2 02 131 | Change scale |  |
|  | 2 01 138 | Change data width |  |
|  | 0 04 006 | Second |  |
|  | 2 01 000 | Change data width |  |
|  | 2 02 000 | Change scale |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 2 02 126 | Change scale |  |
|  | 0 07 001 | Height of station |  |
|  | 2 02 000 | Change scale |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth | Satellite azimuth |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  | 0 33 033 | Field of view quality flags for ATOVS |  |
|  | 0 02 151 | Radiometer identifier |  |
|  | 0 12 064 | Instrument temperature |  |
|  | 0 02 151 | Radiometer identifier |  |
|  | 0 12 064 | Instrument temperature |  |
|  | 0 02 151 | Radiometer identifier |  |
|  | 0 12 064 | Instrument temperature |  |
|  | 0 02 151 | Radiometer identifier |  |
|  | 0 12 064 | Instrument temperature |  |
|  |  |  |  |
|  |  | (ATOVS channel variables) |  |
| 3 10 012 | 0 02 150 | TOVS/ATOVS/AVHRR instrumentation channel number |  |
|  | 0 25 076 | Log10 of (temperature-radiance central wave number) for ATOVS |  |
|  | 0 25 077 | Bandwidth correction coefficient 1 |  |
|  | 0 25 078 | Bandwidth correction coefficient 2 |  |
|  | 0 33 032 | Channel quality flags for ATOVS |  |
|  | 2 01 132 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 2 02 000 | Change scale |  |
|  | 2 01 000 | Change data width |  |
|  |  |  |  |
|  |  | (AVHRR (GAC) report) |  |
| 3 10 013 | 0 01 007 | Satellite identifier |  |
|  | 0 05 040 | Orbit number |  |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 013 | 0 04 006 | Second |  |
| *(continued)* | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 043 | Field of view number |  |
|  | 0 25 085 | Fraction of clear pixels in HIRS FOV |  |
|  | 2 01 131 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 0 02 150 | TOVS/ATOVS/AVHRR instrumentation channel number |  |
|  | 0 08 023 | First-order statistics |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 14 027 | Albedo |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 14 027 | Albedo |  |
|  | 0 02 150 | TOVS/ATOVS/AVHRR instrumentation channel number |  |
|  | 0 08 023 | First-order statistics |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 14 027 | Albedo |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 14 027 | Albedo |  |
|  | 0 02 150 | TOVS/ATOVS/AVHRR instrumentation channel number |  |
|  | 0 08 023 | First-order statistics |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 14 027 | Albedo |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 14 027 | Albedo |  |
|  | 2 02 000 | Change scale |  |
|  | 2 01 000 | Change data width |  |
|  | 2 01 132 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 0 02 150 | TOVS/ATOVS/AVHRR instrumentation channel number |  |
|  | 0 08 023 | First-order statistics |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 02 150 | TOVS/ATOVS/AVHRR instrumentation channel number |  |
|  | 0 08 023 | First-order statistics |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 08 023 | First-order statistics |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 12 063 | Brightness temperature |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 013 | 0 08 072 | Pixel(s) type |  |
| *(continued)* | 0 12 063 | Brightness temperature |  |
|  | 0 02 150 | TOVS/ATOVS/AVHRR instrumentation channel number |  |
|  | 0 08 023 | First-order statistics |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 2 02 000 | Change scale |  |
|  | 2 01 000 | Change data width |  |
|  |  |  |  |
|  |  | (Satellite – geostationary wind data) |  |
| 3 10 014 | 3 01 072 | Satellite identification | Satellite identification, date/time, latitude/longitude |
|  | 3 03 041 | Wind sequence |  |
|  | 3 04 011 | GOES-I/M info |  |
|  |  |  |  |
|  |  | (Meteosat radiance data) |  |
| 3 10 015 | 3 01 072 | Satellite identification |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 10 002 | Height |  |
|  | 3 03 041 | Wind sequence |  |
|  | 1 01 003 | Replicate 1 descriptor 3 times |  |
|  | 3 04 032 | Cloud fraction |  |
|  | 0 02 152 | Satellite instrument used in data processing |  |
|  | 0 02 024 | Integrated mean humidity computational method |  |
|  | 0 07 004 | Pressure |  |
|  | 0 07 004 | Pressure |  |
|  | 0 13 003 | Relative humidity |  |
|  | 1 01 003 | Replicate 1 descriptor 3 times |  |
|  | 3 04 033 | Clear sky radiance |  |
|  |  |  |  |
|  |  | (Meteosat Second Generation (MSG) radiance data) |  |
| 3 10 016 | 3 01 072 | Satellite identification |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 10 002 | Height |  |
|  | 3 03 041 | Wind sequence |  |
|  | 1 01 012 | Replicate 1 descriptor 12 times |  |
|  | 3 04 032 | Cloud fraction |  |
|  | 0 02 152 | Satellite instrument used in data processing |  |
|  | 0 02 024 | Integrated mean humidity computational method |  |
|  | 0 07 004 | Pressure |  |
|  | 0 07 004 | Pressure |  |
|  | 0 13 003 | Relative humidity |  |
|  | 1 01 012 | Replicate 1 descriptor 12 times |  |
|  | 3 04 033 | Clear sky radiance |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Ozone data) |  |
| 3 10 018 | 0 01 007 | Satellite identifier |  |
|  | 0 05 040 | Orbit number |  |
|  | 0 04 001 | Year |  |
|  | 0 04 043 | Day of the year |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 04 006 | Second |  |
|  | 2 07 002 | Increase scale, reference value and data width |  |
|  | 0 26 030 | Measurement integration time |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 33 072 | Ozone error |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  | 2 07 002 | Increase scale, reference value and data width |  |
|  | 0 15 001 | Total ozone |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 08 003 | Vertical significance (satellite observations) | = 0 Surface |
|  | 2 07 001 | Increase scale, reference value and data width |  |
|  | 0 10 004 | Pressure | Terrain |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 08 003 | Vertical significance (satellite observations) | Set to missing (cancel) |
|  | 0 08 003 | Vertical significance (satellite observations) | = 2 Cloud top |
|  | 0 33 042 | Type of limit represented by following value | = 0 Exclusive lower limit |
|  | 2 07 001 | Increase scale, reference value and data width |  |
|  | 0 07 004 | Pressure |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 2 07 002 | Increase scale, reference value and data width |  |
|  | 0 15 001 | Total ozone | Below cloud top pressure |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 08 003 | Vertical significance (satellite observations) | Set to missing (cancel) |
|  | 2 07 002 | Increase scale, reference value and data width |  |
|  | 0 20 081 | Cloud amount in segment | Cloud fraction |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 20 065 | Snow cover |  |
|  | 0 08 029 | Surface type |  |
|  | 2 07 004 | Increase scale, reference value and data width |  |
|  | 0 15 030 | Aerosol contamination index |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 08 075 | Ascending/descending orbit qualifier |  |
|  |  |  |  |
|  |  | (Ozone data) |  |
| 3 10 019 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments | = 624 SBUV/2 |
|  | 3 01 011 | Year, month, day |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 019 | 3 01 013 | Hour, minute, second |  |
| *(continued)* | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 08 021 | Time significance | = 28 Start of scan |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 08 021 | Time significance | = 29 End of scan |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 08 021 | Time significance | Set to missing (cancel) |
|  | 0 08 029 | Surface type |  |
|  | 0 05 040 | Orbit number |  |
|  | 0 08 075 | Ascending/descending orbit qualifier |  |
|  | 0 08 003 | Vertical significance (satellite observations) | = 0 Surface |
|  | 0 10 004 | Pressure | = Terrain |
|  | 0 08 003 | Vertical significance (satellite observations) | Set to missing (cancel) |
|  | 2 07 002 | Increase scale, reference value and data width |  |
|  | 0 15 001 | Total ozone |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 33 070 | Total ozone quality |  |
|  | 0 15 030 | Aerosol contamination index |  |
|  | 2 07 002 | Increase scale, reference value and data width |  |
|  | 0 20 081 | Cloud amount in segment | Cloud fraction |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 08 003 | Vertical significance (satellite observations) | = 2 Cloud top |
|  | 0 33 042 | Type of limit represented by following value | = 0 Exclusive lower limit |
|  | 0 07 004 | Pressure |  |
|  | 2 07 002 | Increase scale, reference value and data width |  |
|  | 0 15 001 | Total ozone | Below cloud top pressure |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 08 003 | Vertical significance (satellite observations) | Set to missing (cancel) |
|  | 1 13 021 | Replicate 13 descriptors 21 times |  |
|  | 0 07 004 | Pressure | Bottom of layer |
|  | 0 07 004 | Pressure | Top of layer |
|  | 2 07 002 | Increase scale, reference value and data width |  |
|  | 0 08 021 | Time significance | = 27 First guess |
|  | 0 15 005 | Ozone p |  |
|  | 0 08 021 | Time significance | Set to missing (cancel) |
|  | 0 15 005 | Ozone p |  |
|  | 0 33 007 | Per cent confidence |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 08 026 | Matrix significance | = 0 Row of averaging kernel matrix |
|  | 1 01 020 | Replicate 1 descriptor 20 times |  |
|  | 0 25 143 | Linear coefficient |  |
|  | 0 08 026 | Matrix significance | Set to missing (cancel) |
|  | 0 08 043 | Atmospheric chemical or physical constituent type | = 0 Ozone |
|  | 1 09 015 | Replicate 9 descriptors 15 times |  |
|  | 0 07 004 | Pressure |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 019 | 0 08 090 | Decimal scale of following significands |  |
| *(continued)* | 2 07 006 | Increase scale, reference value and data width |  |
|  | 0 15 008 | Significand of volumetric mixing ratio |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 08 090 | Decimal scale of following significands | Set to missing (cancel) |
|  | 2 07 002 | Increase scale, reference value and data width |  |
|  | 0 33 007 | Per cent confidence |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 08 043 | Atmospheric chemical or physical constituent type | Set to missing (cancel) |
|  | 0 33 071 | Profile ozone quality |  |
|  | 1 08 008 | Replicate 8 descriptors 8 times |  |
|  | 2 02 124 | Change scale |  |
|  | 2 01 107 | Change data width |  |
|  | 0 02 071 | Spectrographic wavelength |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 07 002 | Increase scale, reference value and data width |  |
|  | 0 20 081 | Cloud amount in segment | Cloud fraction |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  |  |  |  |
|  |  | (Retrieved ozone data) |  |
| 3 10 020 | 3 10 022 | Satellite identifier, instrument and product type |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 3 04 034 | Latitude/longitude, solar elevation, number of layers |  |
|  | 3 10 021 | Integrated ozone density, height of defined layer |  |
|  |  |  |  |
|  |  | (Integrated ozone density, height of defined layer) |  |
| 3 10 021 | 1 08 000 | Delayed replication of 8 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 2 01 131 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 0 07 004 | Pressure |  |
|  | 0 07 004 | Pressure |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 15 020 | Integrated ozone density |  |
|  | 0 10 002 | Height |  |
|  |  |  |  |
|  |  | (Satellite identifier, instrument and product type) |  |
| 3 10 022 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 02 172 | Product type for retrieved atmospheric gases |  |
|  |  |  |  |
|  |  | (Geostationary multi-channel satellite radiance data) |  |
| 3 10 023 | 3 01 072 | Satellite identification |  |
|  | 0 30 021 | Number of pixels per row |  |
|  | 0 30 022 | Number of pixels per column |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 023 | 0 08 012 | Land/sea qualifier |  |
| *(continued)* | 0 07 024 | Satellite zenith angle |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 10 002 | Height |  |
|  | 1 01 012 | Replicate 1 descriptor 12 times |  |
|  | 3 04 032 | Cloud fraction |  |
|  | 1 05 002 | Replicate 5 descriptors 2 times |  |
|  | 0 02 152 | Satellite instrument used in data processing |  |
|  | 0 02 024 | Integrated mean humidity computational method |  |
|  | 0 07 004 | Pressure |  |
|  | 0 07 004 | Pressure |  |
|  | 0 13 003 | Relative humidity |  |
|  | 1 01 012 | Replicate 1 descriptor 12 times |  |
|  | 3 04 033 | Clear sky radiance |  |
|  |  |  |  |
|  |  | (Geostationary three-channel satellite radiance data) |  |
| 3 10 024 | 3 01 072 | Satellite identification |  |
|  | 0 30 021 | Number of pixels per row |  |
|  | 0 30 022 | Number of pixels per column |  |
|  | 0 08 012 | Land/sea qualifier |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 10 002 | Height |  |
|  | 1 01 003 | Replicate 1 descriptor 3 times |  |
|  | 3 04 032 | Cloud fraction |  |
|  | 1 05 002 | Replicate 5 descriptors 2 times |  |
|  | 0 02 152 | Satellite instrument used in data processing |  |
|  | 0 02 024 | Integrated mean humidity computational method |  |
|  | 0 07 004 | Pressure |  |
|  | 0 07 004 | Pressure |  |
|  | 0 13 003 | Relative humidity |  |
|  | 1 01 003 | Replicate 1 descriptor 3 times |  |
|  | 3 04 033 | Clear sky radiance |  |
|  |  |  |  |
|  |  | (SSMIS temperature data record) |  |
| 3 10 025 | 0 01 007 | Satellite identifier |  |
|  | 0 08 021 | Time significance | Scan start |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 2 01 138 | Change data width |  |
|  | 2 02 131 | Change scale |  |
|  | 0 04 006 | Second | Milliseconds |
|  | 2 02 000 | Change scale |  |
|  | 2 01 000 | Change data width |  |
|  | 2 01 132 | Change data width |  |
|  | 0 05 041 | Scan line number | Scan number |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 025 | 2 01 000 | Change data width |  |
| *(continued)* | 2 01 129 | Change data width |  |
|  | 0 05 043 | Field of view number | Scene number |
|  | 2 01 000 | Change data width |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 13 040 | Surface flag |  |
|  | 0 20 029 | Rain flag |  |
|  | 1 04 024 | Replicate 4 descriptors 24 times |  |
|  | 0 05 042 | Channel number |  |
|  | 0 12 163 | Brightness temperature |  |
|  | 0 21 083 | Warm target calibration |  |
|  | 0 21 084 | Cold target calibration |  |
|  | 1 15 003 | Replicate 15 descriptors 3 times |  |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 2 01 142 | Change data width |  |
|  | 2 02 131 | Change scale |  |
|  | 0 04 026 | Time period or displacement | Ephemeris milliseconds |
|  | 2 02 000 | Change scale |  |
|  | 2 01 000 | Change data width |  |
|  | 0 05 001 | Latitude (high accuracy) | Ephemeris |
|  | 0 06 001 | Longitude (high accuracy) | Ephemeris |
|  | 2 01 138 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 0 07 001 | Height of station | Ephemeris |
|  | 2 02 000 | Change scale |  |
|  | 2 01 000 | Change data width |  |
|  | 0 08 021 | Time significance | Orbit start |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 05 040 | Orbit number |  |
|  | 1 01 003 | Replicate 1 descriptor 3 times |  |
|  | 0 12 070 | Warm load temperature |  |
|  | 0 25 054 | SSMIS subframe ID number |  |
|  | 1 01 004 | Replicate 1 descriptor 4 times |  |
|  | 0 25 055 | Multiplexer housekeeping |  |
|  | 0 08 007 | Dimensional significance | Line |
|  | 1 04 028 | Replicate 4 descriptors 28 times |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 02 111 | Radar incidence angle | Earth angle |
|  | 0 05 021 | Bearing or azimuth |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Satellite radio occultation data) |  |
| 3 10 026 | 3 10 022 | Satellite identifier, instrument and product type |  |
|  | 0 25 060 | Software identification |  |
|  | 0 08 021 | Time significance | = 17 Start of phenomenon |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 2 01 138 | Change data width | 16 bits long |
|  | 2 02 131 | Change scale | Scale: 3 |
|  | 0 04 006 | Second |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 33 039 | Quality flags for radio occultation data |  |
|  | 0 33 007 | Per cent confidence | Whole message |
|  | 3 04 030 | Location of platform |  |
|  | 3 04 031 | Speed of platform |  |
|  | 0 02 020 | Satellite classification |  |
|  | 0 01 050 | Platform transmitter ID number |  |
|  | 2 02 127 | Change scale | Scale: 1 |
|  | 3 04 030 | Location of platform |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 3 04 031 | Speed of platform |  |
|  | 2 01 133 | Change data width | 18 bits long |
|  | 2 02 131 | Change scale | Scale: 3 |
|  | 0 04 016 | Time increment |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 3 04 030 | Location of platform |  |
|  | 0 10 035 | Earth’s local radius of curvature |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 10 036 | Geoid undulation |  |
|  | 1 13 000 | Delayed replication of 13 descriptors |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 1 08 000 | Delayed replication of 8 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 02 121 | Mean frequency |  |
|  | 0 07 040 | Impact parameter |  |
|  | 0 15 037 | Bending angle |  |
|  | 0 08 023 | First-order statistics | = 13 Root-mean-square |
|  | 2 01 125 | Change data width | 20 bits long |
|  | 0 15 037 | Bending angle |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 08 023 | First-order statistics | Set to missing |
|  | 0 33 007 | Per cent confidence | All data for current replication |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 026 | 1 08 000 | Delayed replication of 8 descriptors |  |
| *(continued)* | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 0 07 007 | Height |  |
|  | 0 15 036 | Atmospheric refractivity |  |
|  | 0 08 023 | First-order statistics | = 13 Root-mean-square |
|  | 2 01 123 | Change data width | 14 bits long |
|  | 0 15 036 | Atmospheric refractivity |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 08 023 | First-order statistics | Set to missing |
|  | 0 33 007 | Per cent confidence | All data for current height |
|  | 1 16 000 | Delayed replication of 16 descriptors |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 0 07 009 | Geopotential height |  |
|  | 0 10 004 | Pressure |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 13 001 | Specific humidity |  |
|  | 0 08 023 | First-order statistics | = 13 Root-mean-square |
|  | 2 01 120 | Change data width | 6 bits long |
|  | 0 10 004 | Pressure |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 01 122 | Change data width | 6 bits long |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 01 123 | Change data width | 9 bits long |
|  | 0 13 001 | Specific humidity |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 08 023 | First-order statistics | Set to missing |
|  | 0 33 007 | Per cent confidence | All data for current height |
|  | 0 08 003 | Vertical significance (satellite observations) | = 0 Surface |
|  | 0 07 009 | Geopotential height |  |
|  | 0 10 004 | Pressure |  |
|  | 0 08 023 | First-order statistics | = 13 Root-mean-square |
|  | 2 01 120 | Change data width | 6 bits long |
|  | 0 10 004 | Pressure |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 08 023 | First-order statistics | Set to missing |
|  | 0 33 007 | Per cent confidence | Surface data |
|  |  |  |  |
|  |  | (All sky radiance product main sequence) |  |
| 3 10 027 | 3 01 071 | Satellite identifier/Generating resolution | Product information |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 30 021 | Number of pixels per row |  |
|  | 0 30 022 | Number of pixels per column |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 027 | 0 10 002 | Height | Orbit height |
| *(continued)* | 3 04 036 | Cloud coverage |  |
|  | 0 02 152 | Satellite instrument used in data processing |  |
|  | 0 02 167 | Radiance computational method |  |
|  | 1 01 011 | Replicate 1 descriptor 11 times |  |
|  | 3 04 035 | All sky radiance data |  |
|  |  |  |  |
|  |  | (All sky radiance product main sequence) |  |
| 3 10 028 | 3 01 071 | Satellite identifier/Generating resolution | Product information |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 30 021 | Number of pixels per row |  |
|  | 0 30 022 | Number of pixels per column |  |
|  | 0 10 002 | Height | Orbit height |
|  | 3 04 036 | Cloud coverage |  |
|  | 0 02 152 | Satellite instrument used in data processing |  |
|  | 0 02 167 | Radiance computational method |  |
|  | 1 01 011 | Replicate 1 descriptor 11 times |  |
|  | 3 04 037 | All sky radiance data |  |
|  |  |  |  |
|  |  | (Layer, ozone, height, temperature and water vapour) |  |
| 3 10 029 | 1 10 000 | Delayed replication of 10 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 2 01 138 | Change data width |  |
|  | 2 02 130 | Change scale |  |
|  | 0 07 004 | Pressure |  |
|  | 0 07 004 | Pressure |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 15 020 | Integrated ozone density |  |
|  | 0 10 002 | Height |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 13 098 | Integrated water vapour density |  |
|  |  |  |  |
|  |  | (MIPAS or GOMOS instruments reporting) |  |
| 3 10 030 | 3 10 022 | Satellite identifier, instrument and product type |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 3 04 034 | Latitude/longitude, solar elevation, number of layers |  |
|  | 3 10 029 | Layer, ozone, height, temperature and water vapour |  |
|  |  |  |  |
|  |  | (Satellite collocated 1C reports with 3 instruments) |  |
| 3 10 050 | 3 10 051 | Satellite position and instrument temperatures |  |
|  | 3 10 052 | Satellite instrument type and position | AIRS |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 050 *(continued)* | 3 10 053 | Satellite channels and brightness temperatures with expanded channel set | AIRS |
|  | 1 01 004 | Replicate 1 descriptor 4 times |  |
|  | 3 10 054 | Satellite visible channels and albedos with expanded channel set |  |
|  | 0 20 010 | Cloud cover (total) |  |
|  | 3 10 052 | Satellite instrument type and position | AMSU-A |
|  | 1 01 015 | Replicate 1 descriptor 15 times |  |
|  | 3 10 053 | Satellite channels and brightness temperatures with expanded channel set | AMSU-A |
|  | 3 10 052 | Satellite instrument type and position | HSB |
|  | 1 01 005 | Replicate 1 descriptor 5 times |  |
|  | 3 10 053 | Satellite channels and brightness temperatures with expanded channel set | HSB |
|  |  |  |  |
|  |  | (Satellite position and instrument temperatures) |  |
| 3 10 051 | 0 01 007 | Satellite identifier |  |
|  | 0 05 040 | Orbit number |  |
|  | 2 01 133 | Change data width |  |
|  | 0 05 041 | Scan line number |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 01 132 | Change data width |  |
|  | 0 25 070 | Major frame count |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 02 126 | Change scale |  |
|  | 0 07 001 | Height of station |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  | 1 02 009 | Replicate 2 descriptors 9 times |  |
|  | 0 02 151 | Radiometer identifier |  |
|  | 0 12 064 | Instrument temperature |  |
|  |  |  |  |
|  |  | (Satellite instrument type and position) |  |
| 3 10 052 | 0 02 019 | Satellite instruments |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 2 02 131 | Change scale |  |
|  | 2 01 138 | Change data width |  |
|  | 0 04 006 | Second |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 02 000 | Change scale | Cancel |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 05 043 | Field of view number |  |

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*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Satellite channels and brightness temperatures with expanded channel set) |  |
| 3 10 053 | 2 01 134 | Change data width |  |
|  | 0 05 042 | Channel number |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 25 076 | Log10 of (temperature-radiance central wave number) for ATOVS |  |
|  | 0 33 032 | Channel quality flags for ATOVS |  |
|  | 0 12 163 | Brightness temperature | Scale: 2 |
|  |  |  |  |
|  |  | (Satellite visible channels and albedos with expanded channel set) |  |
| 3 10 054 | 2 01 134 | Change data width |  |
|  | 0 05 042 | Channel number |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 25 076 | Log10 of (temperature-radiance central wave number) for ATOVS |  |
|  | 0 33 032 | Channel quality flags for ATOVS |  |
|  | 2 01 131 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 1 02 002 | Replicate 2 descriptors 2 times |  |
|  | 0 08 023 | First-order statistics |  |
|  | 0 14 027 | Albedo |  |
|  | 0 08 023 | First-order statistics |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  |  |  |  |
|  |  | (Satellite radiance/channel principal components) |  |
| 3 10 055 | 3 10 051 | Satellite position and instrument temperatures |  |
|  | 3 10 052 | Satellite instrument type and position | AIRS |
|  | 1 02 020 | Replicate 2 descriptors 20 times |  |
|  | 0 25 076 | Log10 of (temperature-radiance central wave number) for ATOVS |  |
|  | 0 25 052 | Log10 of principal components normalized fit to data |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 0 25 050 | Principal component score | Satellite radiance |
|  |  |  |  |
|  |  | (CrIS (Cross-Track Infrared Sounder) radiance data) |  |
| 3 10 060 | 0 01 007 | Satellite identifier |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 02 020 | Satellite classification |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 2 07 003 | Increase scale, reference value and data width |  |
|  | 0 04 006 | Second |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 3 04 030 | Location of platform |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 060 | 3 01 021 | Latitude/longitude (high accuracy) |  |
| *(continued)* | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  | 0 08 075 | Ascending/descending orbit qualifier |  |
|  | 2 01 133 | Change data width | Increase bit width |
|  | 0 05 041 | Scan line number |  |
|  | 2 01 000 | Change data width | Cancel increase bit width |
|  | 0 05 045 | Field of regard number |  |
|  | 0 05 043 | Field of view number |  |
|  | 0 05 040 | Orbit number |  |
|  | 0 10 001 | Height of land surface |  |
|  | 2 01 129 | Change data width | Increase bit width |
|  | 0 07 002 | Height or altitude |  |
|  | 2 01 000 | Change data width | Cancel increase bit width |
|  | 2 02 127 | Change scale | Increase scale |
|  | 2 01 125 | Change data width | Increase bit width |
|  | 0 21 166 | Land fraction |  |
|  | 2 01 000 | Change data width | Cancel increase bit width |
|  | 2 02 000 | Change scale | Cancel increase scale |
|  | 0 08 012 | Land/sea qualifier |  |
|  | 0 20 010 | Cloud cover (total) |  |
|  | 0 20 014 | Height of top of cloud |  |
|  | 0 02 165 | Radiance type flags |  |
|  | 0 33 075 | Scan-level quality flags |  |
|  | 1 07 003 | Replicate 7 descriptors 3 times |  |
|  | 0 08 076 | Type of band |  |
|  | 0 06 029 | Wave number | Start of range |
|  | 0 06 029 | Wave number | End of range |
|  | 0 25 140 | Start channel |  |
|  | 0 25 141 | End channel |  |
|  | 0 33 076 | Calibration quality flags |  |
|  | 0 33 077 | Field-of-view quality flags |  |
|  | 0 08 076 | Type of band | Set to missing (cancel) |
|  | 0 33 078 | Geolocation quality |  |
|  | 0 33 003 | Quality information |  |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 2 01 133 | Change data width | Increase bit width |
|  | 0 05 042 | Channel number |  |
|  | 2 01 000 | Change data width | Cancel increase bit width |
|  | 0 14 044 | Channel radiance |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (ATMS (Advanced Technology Microwave Sounder) data) |  |
| 3 10 061 | 0 01 007 | Satellite identifier |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 01 034 | Identification of originating/generating sub-centre |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 02 020 | Satellite classification |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 2 07 003 | Increase scale, reference value and data width |  |
|  | 0 04 006 | Second |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 05 040 | Orbit number |  |
|  | 0 05 041 | Scan line number |  |
|  | 0 05 043 | Field of view number |  |
|  | 0 33 079 | Granule level quality flags |  |
|  | 0 33 080 | Scan level quality flags |  |
|  | 0 33 078 | Geolocation quality |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 2 01 129 | Change data width | Increase bit width |
|  | 0 07 002 | Height or altitude |  |
|  | 2 01 000 | Change data width | Cancel increase bit width |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  | 0 25 075 | Satellite antenna corrections version number |  |
|  | 1 11 000 | Delayed replication of 11 descriptors |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 0 05 042 | Channel number |  |
|  | 2 02 131 | Change scale | Increase scale by 3 |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 02 154 | Satellite channel band width |  |
|  | 2 02 000 | Change scale | Cancel increase scale |
|  | 0 02 104 | Antenna polarization |  |
|  | 0 12 066 | Antenna temperature |  |
|  | 0 12 163 | Brightness temperature |  |
|  | 0 12 158 | Noise-equivalent delta temperature while viewing cold target |  |
|  | 0 12 159 | Noise-equivalent delta temperature while viewing warm target |  |
|  | 0 33 081 | Channel data quality flags |  |
|  |  |  |  |
|  |  | (VIIRS (Visible/Infrared Imager Radiometer Suite) data) |  |
| 3 10 062 | 0 01 007 | Satellite identifier |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 01 034 | Identification of originating/generating sub-centre |  |
|  | 0 02 019 | Satellite instruments |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 062 | 0 02 020 | Satellite classification |  |
| *(continued)* | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 2 07 003 | Increase scale, reference value and data width |  |
|  | 0 04 006 | Second |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 05 040 | Orbit number |  |
|  | 2 01 133 | Change data width | Increase bit width |
|  | 0 05 041 | Scan line number |  |
|  | 0 05 043 | Field of view number |  |
|  | 2 01 000 | Change data width | Cancel increase bit width |
|  | 0 08 076 | Type of band |  |
|  | 0 33 082 | Geolocation quality flags |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 2 01 129 | Change data width | Increase bit width |
|  | 0 07 002 | Height or altitude |  |
|  | 2 01 000 | Change data width | Cancel increase bit width |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 08 029 | Surface type |  |
|  | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 0 05 042 | Channel number |  |
|  | 0 02 155 | Satellite channel wavelength |  |
|  | 0 33 083 | Radiance data quality flags |  |
|  | 0 14 043 | Channel radiance |  |
|  | 0 15 042 | Reflectance |  |
|  |  |  |  |
|  |  | (SST (Sea-surface temperature) data) |  |
| 3 10 063 | 0 01 007 | Satellite identifier |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 01 034 | Identification of originating/generating sub-centre |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 02 020 | Satellite classification |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 2 07 003 | Increase scale, reference value and data width |  |
|  | 0 04 006 | Second |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 05 040 | Orbit number |  |
|  | 2 01 133 | Change data width | Increase bit width |
|  | 0 05 041 | Scan line number |  |
|  | 0 05 043 | Field of view number |  |
|  | 2 01 000 | Change data width | Cancel increase bit width |

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*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 063 | 0 33 082 | Geolocation quality flags |  |
| *(continued)* | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 2 01 129 | Change data width | Increase bit width |
|  | 0 07 002 | Height or altitude |  |
|  | 2 01 000 | Change data width | Cancel increase bit width |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  | 0 08 075 | Ascending/descending orbit qualifier |  |
|  | 0 08 013 | Day/night qualifier |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 33 084 | Pixel level quality flags |  |
|  | 0 07 062 | Depth below sea/water surface |  |
|  | 0 33 086 | Quality of pixel level retrieval |  |
|  | 0 22 043 | Sea/water temperature |  |
|  | 0 07 062 | Depth below sea/water surface | Top of layer |
|  | 0 07 062 | Depth below sea/water surface | Bottom of layer |
|  | 0 33 086 | Quality of pixel level retrieval |  |
|  | 0 22 043 | Sea/water temperature |  |
|  |  |  |  |
|  |  | (AOT (Aerosol optical thickness) data) |  |
| 3 10 064 | 0 01 007 | Satellite identifier |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 01 034 | Identification of originating/generating sub-centre |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 02 020 | Satellite classification |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 2 07 003 | Increase scale, reference value and data width |  |
|  | 0 04 006 | Second |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 05 040 | Orbit number |  |
|  | 2 01 133 | Change data width |  |
|  | 0 05 041 | Scan line number |  |
|  | 0 05 043 | Field of view number |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 33 082 | Geolocation quality flags |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 2 01 129 | Change data width |  |
|  | 0 07 002 | Height or altitude |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  | 0 08 075 | Ascending/descending orbit qualifier |  |
|  | 0 08 029 | Surface type |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 064 | 0 08 046 | Atmospheric chemical or physical constituent type |  |
| *(continued)* | 0 33 085 | Aerosol optical thickness quality flags |  |
|  | 0 33 086 | Quality of pixel level retrieval |  |
|  | 0 15 049 | Aerosol Angstrom wavelength exponent |  |
|  | 0 33 086 | Quality of pixel level retrieval |  |
|  | 1 02 011 | Replicate 2 descriptors 11 times |  |
|  | 0 02 155 | Satellite channel wavelength |  |
|  | 0 15 062 | Aerosol optical thickness |  |
|  |  |  |  |
|  |  | (OMPS (Ozone mapping and profiler suite) nadir profile data) |  |
| 3 10 065 | 0 01 007 | Satellite identifier |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 01 034 | Identification of originating/generating sub-centre |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 02 020 | Satellite classification |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 2 07 003 | Increase scale, reference value and data width |  |
|  | 0 04 006 | Second |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 05 040 | Orbit number |  |
|  | 0 33 082 | Geolocation quality flags |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 2 01 129 | Change data width |  |
|  | 0 07 002 | Height or altitude |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  | 0 08 075 | Ascending/descending orbit qualifier |  |
|  | 0 33 071 | Profile ozone quality |  |
|  | 0 33 070 | Total ozone quality |  |
|  | 0 20 021 | Type of precipitation |  |
|  | 0 15 045 | Sulphur dioxide |  |
|  | 0 15 046 | Volcano contamination index |  |
|  | 0 08 065 | Sun-glint indicator |  |
|  | 0 33 087 | Extent of satellite within South Atlantic anomaly |  |
|  | 0 08 003 | Vertical significance (satellite observations) |  |
|  | 0 10 004 | Pressure |  |
|  | 0 08 003 | Vertical significance (satellite observations) |  |
|  | 2 07 002 | Increase scale, reference value and data width |  |
|  | 0 15 001 | Total ozone |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 1 05 012 | Replicate 5 descriptors 12 times |  |
|  | 0 10 040 | Number of retrieved layers |  |
|  | 0 10 004 | Pressure |  |
|  | 2 07 003 | Increase scale, reference value and data width |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 065 | 0 15 005 | Ozone p |  |
| *(continued)* | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 08 046 | Atmospheric chemical or physical constituent type |  |
|  | 1 07 019 | Replicate 7 descriptors 19 times |  |
|  | 0 10 040 | Number of retrieved layers |  |
|  | 0 10 004 | Pressure |  |
|  | 0 08 090 | Decimal scale of following signficands |  |
|  | 2 07 006 | Increase scale, reference value and data width |  |
|  | 0 15 008 | Significand of volumetric mixing ratio |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 08 090 | Decimal scale of following significands | Set to missing (cancel) |
|  |  |  |  |
|  |  | (OMPS (Ozone mapping and profiler suite) total column data) |  |
| 3 10 066 | 0 01 007 | Satellite identifier |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 01 034 | Identification of originating/generating sub-centre |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 02 020 | Satellite classification |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 2 07 003 | Increase scale, reference value and data width |  |
|  | 0 04 006 | Second |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 05 040 | Orbit number |  |
|  | 0 33 082 | Geolocation quality flags |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 2 01 129 | Change data width |  |
|  | 0 07 002 | Height or altitude |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  | 0 08 075 | Ascending/descending orbit qualifier |  |
|  | 0 20 081 | Cloud amount in segment | Cloud fraction |
|  | 2 07 004 | Increase scale, reference value and data width |  |
|  | 0 15 030 | Aerosol contamination index |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 20 065 | Snow cover |  |
|  | 0 15 041 | Sulphur dioxide index |  |
|  | 0 33 086 | Quality of pixel level retrieval |  |
|  | 0 33 087 | Extent of satellite within South Atlantic anomaly |  |
|  | 0 33 088 | Ozone total column quality flag |  |
|  | 0 08 003 | Vertical significance (satellite observations) | = 0 Surface |
|  | 2 07 001 | Increase scale, reference value and data width |  |
|  | 0 07 004 | Pressure |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 08 003 | Vertical significance (satellite observations) | Set to missing (cancel) |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 066 | 2 07 002 | Increase scale, reference value and data width |  |
| *(continued)* | 0 15 001 | Total ozone |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 08 003 | Vertical significance (satellite observations) | = 2 Cloud top |
|  | 0 33 042 | Type of limit represented by following value | = 0 Exclusive lower limit (>) |
|  | 2 07 001 | Increase scale, reference value and data width |  |
|  | 0 07 004 | Pressure | Cloud top pressure |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 2 07 002 | Increase scale, reference value and data width |  |
|  | 0 15 001 | Total ozone | Below cloud |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 08 003 | Vertical significance (satellite observations) | Set to missing (cancel) |
|  | 0 01 032 | Generating application | = 0 First guess | Defined by local generating centre |
|  | 2 07 002 | Increase scale, reference value and data width |  |
|  | 0 15 001 | Total ozone | First guess total column ozone |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  |  |  |  |
|  |  | (Satellite-derived winds) (see Note 2) |  |
| 3 10 067 |  | *Processing information* |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 01 034 | Identification of originating/generating sub-centre |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 25 062 | Database identification |  |
|  |  | *Satellite/instrument identification* |  |
|  | 0 01 007 | Satellite identifier |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 01 012 | Direction of motion of moving observing platform |  |
|  | 2 01 138 | Change data width |  |
|  | 0 02 026 | Cross-track resolution |  |
|  | 0 02 027 | Along-track resolution |  |
|  | 2 01 000 | Cancel change data width |  |
|  |  | *Methods* |  |
|  | 0 02 028 | Segment size at nadir in x-direction | Target box size |
|  | 0 02 029 | Segment size at nadir in y-direction | Target box size |
|  | 0 02 161 | Wind processing method |  |
|  | 0 02 164 | Tracer correlation method |  |
|  | 0 02 023 | Satellite-derived wind computation method |  |
|  | 0 08 012 | Land/sea qualifier |  |
|  | 0 08 013 | Day/night qualifier |  |
|  |  | *Final AMV data* |  |
|  | 0 01 124 | Grid point identifier |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 04 001 | Year |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 067 | 0 04 002 | Month |  |
| *(continued)* | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 04 006 | Second |  |
|  | 0 04 086 | Long time period or displacement | Seconds |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 11 003 | u-component |  |
|  | 0 11 004 | v-component |  |
|  | 0 02 162 | Extended height assignment method |  |
|  | 0 07 004 | Pressure |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 20 014 | Height of top of cloud |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 01 023 | Observation sequence number |  |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 02 162 | Extended height assignment method |  |
|  | 0 07 004 | Pressure |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 20 014 | Height of top of cloud |  |
|  |  | *Image information (for each image used)* |  |
|  | 1 13 000 | Delayed replication of 13 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 04 086 | Long time period or displacement | Seconds |
|  | 0 02 020 | Satellite classification |  |
|  | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 05 042 | Channel number |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 05 040 | Orbit number |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 02 162 | Extended height assignment method |  |
|  | 0 07 004 | Pressure |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 20 014 | Height of top of cloud |  |
|  |  | *Intermediate vectors (for each component vector)* |  |
|  | 1 19 000 | Delayed replication of 19 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 04 086 | Long time period or displacement | Seconds |
|  | 0 04 086 | Long time period or displacement | Seconds |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 11 003 | u-component |  |
|  | 0 11 004 | v-component |  |
|  | 0 11 113 | Tracking correlation of vector |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 067 | 0 25 148 | Coefficient of variation |  |
| *(continued)* | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 023 | First order statistics |  |
|  | 0 11 003 | u-component |  |
|  | 0 11 004 | v-component |  |
|  | 0 08 023 | First order statistics | Set to missing (cancel) |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 20 111 | x-axis error ellipse major component |  |
|  | 0 20 112 | y-axis error ellipse minor component |  |
|  | 0 20 114 | Angle of x-axis in error ellipse |  |
|  |  | *Corresponding forecast data* |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 08 021 | Time significance | = 27 First guess |
|  | 0 11 095 | u-component of the model wind vector |  |
|  | 0 11 096 | v-component of the model wind vector |  |
|  | 0 07 004 | Pressure |  |
|  | 0 08 021 | Time significance | = 4 Forecast |
|  | 0 11 095 | u-component of the model wind vector |  |
|  | 0 11 096 | v-component of the model wind vector |  |
|  | 0 07 004 | Pressure |  |
|  | 0 08 021 | Time significance | Set to missing (cancel) |
|  | 0 08 086 | Vertical significance for NWP | = 10 Level of best fit |
|  | 0 11 095 | u-component of the model wind vector |  |
|  | 0 11 096 | v-component of the model wind vector |  |
|  | 0 07 004 | Pressure |  |
|  | 0 08 086 | Vertical significance for NWP | Set to missing (cancel) |
|  |  | *Final AMV quality* |  |
|  | 1 02 004 | Replicate 2 descriptors 4 times |  |
|  | 0 01 032 | Generating application |  |
|  | 0 33 007 | Per cent confidence |  |
|  | 0 08 092 | Measurement uncertainty expression | = 0 Standard uncertainty |
|  | 0 11 003 | u-component |  |
|  | 0 11 004 | v-component |  |
|  | 0 07 004 | Pressure |  |
|  | 0 08 092 | Measurement uncertainty expression | Set to missing (cancel) |
|  | 0 33 066 | AMV quality flag |  |
|  |  | *Cloud data and microphysics (refers to the nominal*  *image used for height assignment)* |  |
|  | 0 20 081 | Cloud amount in segment |  |
|  | 0 20 012 | Cloud type |  |
|  | 0 20 056 | Cloud phase |  |
|  | 1 17 000 | Delayed replication of 17 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 023 | First order statistics |  |
|  | 0 20 016 | Pressure at top of cloud |  |

*(continued)*

*(Category 10 – continued)*

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| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 067 *(continued)* | 0 08 092 | Measurement uncertainty expression | = 0 Standard uncertainty |
|  | 0 08 003 | Vertical significance (satellite observations) | = 2 Cloud top |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 08 003 | Vertical significance (satellite observations) | Set to missing (cancel) |
|  | 0 20 016 | Pressure at top of cloud |  |
|  | 0 08 092 | Measurement uncertainty expression | Set to missing (cancel) |
|  | 0 25 149 | Optimal estimation cost |  |
|  | 0 20 016 | Pressure at top of cloud |  |
|  | 0 20 014 | Height of top of cloud |  |
|  | 0 13 093 | Cloud optical thickness |  |
|  | 0 13 109 | Ice/liquid water path |  |
|  | 0 40 038 | Cloud particle size |  |
|  | 0 08 011 | Meteorological feature | = 12 Cloud |
|  | 0 14 050 | Emissivity |  |
|  | 0 08 011 | Meteorological feature | Set to missing (cancel) |
|  | 0 08 023 | First order statistics | Set to missing (cancel) |
|  |  |  |  |
|  |  | (VASS field of view variables) |  |
| 3 10 068 | 0 08 070 | Vertical sounding product qualifier |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 01 034 | Identification of originating/generating sub-centre |  |
|  | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 12 064 | Instrument temperature |  |
|  | 0 05 040 | Orbit number |  |
|  | 2 01 136 | Change data width |  |
|  | 0 05 041 | Scan line number |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 05 043 | Field of view number |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 2 01 138 | Change data width |  |
|  | 2 02 131 | Change scale |  |
|  | 0 04 006 | Second |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 2 02 126 | Change scale |  |
|  | 0 07 001 | Height of station |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 0 10 007 | Height |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  | 0 13 040 | Surface flag |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 068 *(continued)* | 0 12 101 | Temperature/air temperature | Land or ocean surface temperature |
|  | 2 01 131 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 0 11 011 | Wind direction at 10 m | Ocean surface wind |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 01 130 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 0 11 012 | Wind speed at 10 m | Ocean surface wind |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 20 029 | Rain flag |  |
|  | 0 20 010 | Cloud cover (total) |  |
|  | 0 20 014 | Height of top of cloud |  |
|  | 0 13 162 | Cloud liquid water |  |
|  | 0 14 050 | Emissivity |  |
|  |  |  |  |
|  |  | (VASS channel variables) |  |
| 3 10 069 | 0 05 042 | Channel number |  |
|  | 2 01 139 | Change data width |  |
|  | 0 02 155 | Satellite channel wavelength |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 25 077 | Bandwidth correction coefficient 1 |  |
|  | 0 25 078 | Bandwidth correction coefficient 2 |  |
|  | 0 33 007 | Per cent confidence |  |
|  | 2 01 132 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  |  |  |  |
|  |  | (VASS MWTS report of FY-3) |  |
| 3 10 070 | 3 10 068 | VASS field of view variables |  |
|  | 1 01 013 | Replicate 1 descriptor 13 times |  |
|  | 3 10 069 | VASS channel variables |  |
|  |  |  |  |
|  |  | (VASS MWHS report of FY-3) |  |
| 3 10 071 | 3 10 068 | VASS field of view variables |  |
|  | 1 01 015 | Replicate 1 descriptor 15 times |  |
|  | 3 10 069 | VASS channel variables |  |
|  |  |  |  |
|  |  | (VASS IRAS report of FY-3) |  |
| 3 10 072 | 3 10 068 | VASS field of view variables |  |
|  | 1 01 026 | Replicate 1 descriptor 26 times |  |
|  | 3 10 069 | VASS channel variables |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Satellite-derived winds) |  |
| 3 10 077 |  | *Processing information* |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 01 034 | Identification of originating/generating sub-centre |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 25 062 | Database identification |  |
|  |  | *Satellite/instrument identification* |  |
|  | 0 01 007 | Satellite identifier |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 01 012 | Direction of motion of moving observing platform |  |
|  | 2 01 138 | Change data width |  |
|  | 0 02 026 | Cross-track resolution |  |
|  | 0 02 027 | Along-track resolution |  |
|  | 2 01 000 | Change data width | Cancel |
|  |  | *Methods* |  |
|  | 0 02 028 | Segment size at nadir in x-direction | Target box size |
|  | 0 02 029 | Segment size at nadir in y-direction | Target box size |
|  | 0 02 161 | Wind processing method |  |
|  | 0 02 164 | Tracer correlation method |  |
|  | 0 02 023 | Satellite derived wind computation method |  |
|  | 0 08 012 | Land/sea qualifier |  |
|  | 0 08 013 | Day/night qualifier |  |
|  |  | *Final AMV data* |  |
|  | 0 01 124 | Grid point identifier |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 04 006 | Second |  |
|  | 0 04 086 | Long time period or displacement | Seconds |
|  | 0 02 162 | Extended height assignment method |  |
|  | 0 07 004 | Pressure |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 11 003 | u-component |  |
|  | 0 11 004 | v-component |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 20 014 | Height of top of cloud |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 01 023 | Observation sequence number |  |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 02 162 | Extended height assignment method |  |
|  | 0 07 004 | Pressure |  |
|  | 0 12 001 | Temperature/air temperature |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 077 | 0 20 014 | Height of top of cloud |  |
| *(continued)* |  | *Image information (for each image used)* |  |
|  | 1 13 000 | Delayed replication of 13 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 04 086 | Long time period or displacement | Seconds |
|  | 0 02 020 | Satellite classification |  |
|  | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 05 042 | Channel number |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 05 040 | Orbit number |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 02 162 | Extended height assignment method |  |
|  | 0 07 004 | Pressure |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 20 014 | Height of top of cloud |  |
|  |  | *Intermediate vectors (for each component vector)* |  |
|  | 1 19 000 | Delayed replication of 19 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 04 086 | Long time period or displacement | Seconds |
|  | 0 04 086 | Long time period or displacement | Seconds |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 11 003 | u-component |  |
|  | 0 11 004 | v-component |  |
|  | 0 11 113 | Tracking correlation of vector |  |
|  | 0 25 148 | Coefficient of variation |  |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 023 | First order statistics |  |
|  | 0 11 003 | u-component |  |
|  | 0 11 004 | v-component |  |
|  | 0 08 023 | First order statistics | Set to missing (cancel) |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 20 111 | x-axis error ellipse major component |  |
|  | 0 20 112 | y-axis error ellipse minor component |  |
|  | 0 20 114 | Angle of x-axis in error ellipse |  |
|  |  | *Corresponding forecast data* |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 08 021 | Time significance | = 27 First guess |
|  | 0 07 004 | Pressure |  |
|  | 0 11 095 | u-component of the model wind vector |  |
|  | 0 11 096 | v-component of the model wind vector |  |
|  | 0 08 021 | Time significance | = 4 Forecast |
|  | 0 07 004 | Pressure |  |
|  | 0 11 095 | u-component of the model wind vector |  |

*(continued)*

*(Category 10 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 10 077 | 0 11 096 | v-component of the model wind vector |  |
| *(continued)* | 0 08 021 | Time significance | Set to missing (cancel) |
|  | 0 08 086 | Vertical significance for NWP | = 10 Level of best fit |
|  | 0 07 004 | Pressure |  |
|  | 0 11 095 | u-component of the model wind vector |  |
|  | 0 11 096 | v-component of the model wind vector |  |
|  | 0 08 086 | Vertical significance for NWP | Set to missing (cancel) |
|  |  | *Final AMV quality* |  |
|  | 1 02 004 | Replicate 2 descriptors 4 times |  |
|  | 0 01 044 | Standard generating application |  |
|  | 0 33 007 | Per cent confidence |  |
|  | 0 08 092 | Measurement uncertainty expression | = 0 Standard uncertainty |
|  | 0 07 004 | Pressure |  |
|  | 0 11 003 | u-component |  |
|  | 0 11 004 | v-component |  |
|  | 0 08 092 | Measurement uncertainty expression | Set to missing (cancel) |
|  | 0 33 066 | AMV quality flag |  |
|  |  | *Cloud data and microphysics (refers to the nominal   image used for height assignment)* |  |
|  | 0 20 081 | Cloud amount in segment |  |
|  | 0 20 012 | Cloud type |  |
|  | 0 20 056 | Cloud phase |  |
|  | 1 17 000 | Delayed replication of 17 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 023 | First order statistics |  |
|  | 0 20 016 | Pressure at the top of cloud |  |
|  | 0 08 092 | Measurement uncertainty expression | = 0 Standard uncertainty |
|  | 0 08 003 | Vertical significance (satellite observations) | = 2 Cloud top |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 08 003 | Vertical significance (satellite observations) | Set to missing (cancel) |
|  | 0 20 016 | Pressure at the top of cloud |  |
|  | 0 08 092 | Measurement uncertainty expression | Set to missing (cancel) |
|  | 0 25 149 | Optimal estimation cost |  |
|  | 0 20 016 | Pressure at the top of cloud |  |
|  | 0 20 014 | Height of the top of cloud |  |
|  | 0 13 093 | Cloud optical thickness |  |
|  | 0 13 109 | Ice/liquid water path |  |
|  | 0 40 038 | Cloud particle size |  |
|  | 0 08 011 | Meteorological feature | = 12 Cloud |
|  | 0 14 050 | Emissivity |  |
|  | 0 08 011 | Meteorological feature | Set to missing (cancel) |
|  | 0 08 023 | First order statistics | Set to missing (cancel) |

Notes:

(1) 3 10 027 is deprecated.

(2) In the context of 3 10 067, pressure values which immediately follow occurrences of wind components should be understood to pertain to those components.

**Category 11 – Single level report sequences (conventional data)**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Aircraft reports) |  |
| 3 11 001 | 3 01 051 | Flight number, navigational system, date/time, location, phase of flight | ASDAR |
|  | 0 07 002 | Height or altitude |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 11 031 | Degree of turbulence |  |
|  | 0 11 032 | Height of base of turbulence |  |
|  | 0 11 033 | Height of top of turbulence |  |
|  | 0 20 041 | Airframe icing |  |
|  |  |  |  |
|  |  | (ACARS reports) |  |
| 3 11 002 | 3 01 065 | ACARS identification |  |
|  | 3 01 066 | ACARS location |  |
|  | 3 11 003 | ACARS standard reported variables |  |
|  | 3 11 004 | ACARS supplementary reported variables |  |
|  |  |  |  |
|  |  | (ACARS standard reported variables) |  |
| 3 11 003 | 0 10 070 | Indicated aircraft altitude |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 13 002 | Mixing ratio |  |
|  |  |  |  |
|  |  | (ACARS supplementary reported variables) |  |
| 3 11 004 | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 11 034 | Vertical gust velocity |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 11 035 | Vertical gust acceleration |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 11 075 | Mean turbulence intensity (eddy dissipation rate) |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 11 076 | Peak turbulence intensity (eddy dissipation rate) |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 33 025 | ACARS interpolated values indicator |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 33 026 | Moisture quality |  |
|  |  |  |  |
|  |  | (Standard AMDAR reports) |  |
| 3 11 005 | 0 01 008 | Aircraft registration number or other identification |  |
|  | 0 01 023 | Observation sequence number |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |

*(continued)*

*(Category 11 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 11 005 | 3 01 011 | Year, month, day |  |
| *(continued)* | 3 01 013 | Hour, minute, second |  |
|  | 0 07 010 | Flight level |  |
|  | 0 08 009 | Detailed phase of flight |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 11 031 | Degree of turbulence |  |
|  | 0 11 036 | Maximum derived equivalent vertical gust speed |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 33 025 | ACARS interpolated values indicator |  |
|  |  |  |  |
|  |  | (AMDAR data or aircraft data for one level without latitude/longitude) |  |
| 3 11 006 | 0 07 010 | Flight level |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 02 064 | Aircraft roll angle quality |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 12 103 | Dewpoint temperature |  |
|  |  |  |  |
|  |  | (Aircraft data for one level with latitude/longitude indicated) |  |
| 3 11 007 | 0 07 010 | Flight level |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 02 064 | Aircraft roll angle quality |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 12 103 | Dewpoint temperature |  |
|  |  |  |  |
|  |  | (Aircraft ascent/descent profile without latitude/longitude indicated at each level) |  |
| 3 11 008 | 0 01 008 | Aircraft registration number or other identification |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 08 004 | Phase of aircraft flight |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 11 006 | AMDAR data or aircraft data for one level without latitude/longitude |  |
|  |  |  |  |
|  |  | (Aircraft ascent/descent profile with latitude/longitude given for each level) |  |
| 3 11 009 | 0 01 008 | Aircraft registration number or other identification |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 08 004 | Phase of aircraft flight |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |

*(continued)*

*(Category 11 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 11 009 | 0 31 001 | Delayed descriptor replication factor |  |
| *(continued)* | 3 11 007 | Aircraft data for one level with latitude/longitude indicated |  |
|  |  |  |  |
|  |  | (BUFR template for AMDAR, version 7) |  |
| 3 11 010 | 0 01 008 | Aircraft registration number or other identification |  |
|  | 0 01 023 | Observation sequence number |  |
|  | 0 01 006 | Aircraft flight number |  |
|  | 0 01 110 | Aircraft tail number |  |
|  | 0 01 111 | Origination airport |  |
|  | 0 01 112 | Destination airport |  |
|  | 2 04 002 | Add associated field | 2 bits long |
|  | 0 31 021 | Associated field significance | = 8 Two bits quality information |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 010 | Flight level | Pressure altitude |
|  | 0 10 053 | Global navigation satellite system altitude |  |
|  | 0 08 009 | Detailed phase of flight |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 02 064 | Aircraft roll angle quality |  |
|  | 0 11 100 | Aircraft true airspeed |  |
|  | 0 11 101 | Aircraft ground speed u-component |  |
|  | 0 11 102 | Aircraft ground speed v-component |  |
|  | 0 11 103 | Aircraft ground speed w-component |  |
|  | 0 11 104 | True heading of aircraft, ship or other mobile platform | True heading of aircraft |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 02 170 | Aircraft humidity sensors |  |
|  | 2 01 144 | Change data width |  |
|  | 2 02 133 | Change scale |  |
|  | 0 13 002 | Mixing ratio |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 01 135 | Change data width |  |
|  | 2 02 130 | Change scale |  |
|  | 0 13 003 | Relative humidity |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 12 103 | Dewpoint temperature |  |
|  | 0 33 026 | Moisture quality |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 20 042 | Airframe icing present |  |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |

*(continued)*

*(Category 11 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 11 010 | 0 31 000 | Short delayed descriptor replication factor |  |
| *(continued)* | 0 20 043 | Peak liquid water content |  |
|  | 0 20 044 | Average liquid water content |  |
|  | 0 20 045 | Supercooled large droplet (SLD) conditions |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 33 025 | ACARS interpolated values indicator |  |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 11 075 | Mean turbulence intensity (eddy dissipation rate) |  |
|  | 0 11 076 | Peak turbulence intensity (eddy dissipation rate) |  |
|  | 0 11 039 | Extended time of occurrence of peak eddy dissipation rate |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 11 037 | Turbulence index | EDR |
|  | 0 11 077 | Reporting interval or averaging time for eddy dissipation rate |  |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 11 034 | Vertical gust velocity |  |
|  | 0 11 035 | Vertical gust acceleration |  |
|  | 0 11 036 | Maximum derived equivalent vertical gust speed |  |
|  | 2 04 000 | Add associated field | Cancel |
|  | 1 19 000 | Delayed replication of 19 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 007 | Height |  |
|  | 0 11 105 | EDR algorithm version |  |
|  | 2 04 007 | Add associated field | 7 bits long |
|  | 0 31 021 | Associated field significance | = 7 Percentage confidence |
|  | 0 11 076 | Peak turbulence intensity (eddy dissipation rate) |  |
|  | 0 11 075 | Mean turbulence intensity (eddy dissipation rate) |  |
|  | 2 04 000 | Add associated field | Cancel |
|  | 0 11 106 | Running minimum confidence |  |
|  | 0 11 107 | Maximum number bad inputs |  |
|  | 0 11 108 | Peak location |  |
|  | 0 11 109 | Number of good EDR |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 11 001 | Wind direction |  |
|  | 2 01 130 | Change data width |  |
|  | 0 11 084 | Wind speed |  |
|  | 2 01 000 | Change data width | Cancel |

*(continued)*

*(Category 11 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (IAGOS template for a single observation), version 2 |  |
| 3 11 011 | 0 01 023 | Observation sequence number |  |
|  | 0 08 004 | Phase of aircraft flight |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 07 004 | Pressure |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 1 06 000 | Delayed replication of 6 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 046 | Atmospheric chemical or physical constituent type |  |
|  | 2 01 139 | Change data width | 20 bits long |
|  | 2 02 126 | Change scale | Scale: 7 |
|  | 0 15 026 | Concentration of pollutant (mol mol–1) |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 1 06 000 | Delayed replication of 6 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 046 | Atmospheric chemical or physical constituent type |  |
|  | 2 01 138 | Change data width | 19 bits long |
|  | 2 02 130 | Change scale | Scale: 11 |
|  | 0 15 026 | Concentration of pollutant (mol mol–1) |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 15 052 | Log10 of number density of aerosol particles with diameter greater than 5 nm |  |
|  | 0 15 053 | Log10 of number density of aerosol particles with diameter greater than 14 nm |  |
|  | 0 15 054 | Log10 of number density of aerosol particles with diameter between 0.25 and 2.5 µm |  |
|  | 0 15 055 | Non volatile aerosol ratio |  |
|  | 0 07 004 | Pressure |  |
|  | 0 07 004 | Pressure |  |
|  | 0 13 099 | Log10 of integrated cloud particle density |  |
|  | 0 13 100 | Log10 of integrated cloud particle area |  |
|  | 0 13 101 | Log10 of integrated cloud particle volume |  |

**Category 12 – Single level report sequences (satellite data)**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 12 001 | 3 01 043 | Satellite identifier, wind computation method, date/time, location |  |
|  | 3 04 001 | Cloud top pressure, temperature, wind |  |
|  |  |  |  |
| 3 12 002 | 3 01 043 | Satellite identifier, wind computation method, date/time, location |  |
|  | 3 04 002 | Cloud top pressure, wind |  |
|  |  |  |  |
| 3 12 003 | 3 01 042 | Satellite identifier, instrument, data-processing technique, date/time, location |  |
|  | 3 04 003 | Surface temperature |  |
|  |  |  |  |
| 3 12 004 | 3 01 042 | Satellite identifier, instrument, data-processing technique, date/time, location |  |
|  | 3 04 004 | Cloud top pressure, cloud cover, temperature |  |
|  |  |  |  |
| 3 12 005 | 3 01 042 | Satellite identifier, instrument, data-processing technique, date/time, location |  |
|  | 0 20 014 | Height of top of cloud |  |
|  |  |  |  |
| 3 12 006 | 3 01 044 | Satellite identifier, humidity computation method, date/time, location |  |
|  | 3 04 005 | Layer mean relative humidity |  |
|  |  |  |  |
| 3 12 007 | 3 01 042 | Satellite identifier, instrument, data-processing technique, date/time, location |  |
|  | 3 04 006 | Radiation |  |
|  |  |  |  |
|  |  | (Orbital information, Part I) |  |
| 3 12 010 | 0 01 007 | Satellite identifier |  |
|  | 0 05 040 | Orbit number |  |
|  | 0 02 021 | Satellite instrument data used in processing |  |
|  | 0 05 041 | Scan line number |  |
|  | 0 04 001 | Year |  |
|  | 0 04 043 | Day of the year |  |
|  |  |  |  |
|  |  | (Orbital information, Part II) |  |
| 3 12 011 | 2 02 131 | Change scale |  |
|  | 2 01 149 | Change data width |  |
|  | 0 04 006 | Second |  |
|  | 2 01 000 | Change data width |  |
|  | 2 02 126 | Change scale |  |
|  | 0 10 002 | Height |  |
|  | 2 02 000 | Change scale |  |
|  | 0 05 043 | Field of view number |  |
|  | 0 05 053 | Field of view number increment |  |

*(continued)*

*(Category 12 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (HIRS brightness temperatures – channels 1-19) |  |
| 3 12 012 | 2 02 129 | Change scale |  |
|  | 2 01 132 | Change data width |  |
|  | 1 01 019 | Replicate 1 descriptor 19 times |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 2 01 000 | Change data width |  |
|  | 2 02 000 | Change scale |  |
|  |  |  |  |
|  |  | (HIRS brightness temperatures – channel 20) |  |
| 3 12 013 | 0 05 042 | Channel number |  |
|  | 2 02 129 | Change scale |  |
|  | 2 01 135 | Change data width |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 2 01 000 | Change data width |  |
|  | 2 02 000 | Change scale |  |
|  |  |  |  |
|  |  | (HIRS satellite data) |  |
| 3 12 014 | 3 12 010 | Orbital information, Part I |  |
|  | 3 12 011 | Orbital information, Part II |  |
|  | 1 05 056 | Replicate 5 descriptors 56 times |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 05 042 | Channel number |  |
|  | 0 05 052 | Channel number increment |  |
|  | 3 12 012 | HIRS brightness temperatures – channels 1–19 |  |
|  | 3 12 013 | HIRS brightness temperatures – channel 20 |  |
|  |  |  |  |
|  |  | (MSU brightness temperatures – channels 1–4) |  |
| 3 12 015 | 1 09 011 | Replicate 9 descriptors 11 times |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 05 042 | Channel number |  |
|  | 0 05 052 | Channel number increment |  |
|  | 2 02 129 | Change scale |  |
|  | 2 01 132 | Change data width |  |
|  | 1 01 004 | Replicate 1 descriptor 4 times |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 2 02 000 | Change scale |  |
|  | 2 01 000 | Change data width |  |
|  |  |  |  |
|  |  | (MSU satellite data) |  |
| 3 12 016 | 3 12 010 | Orbital information, Part I |  |
|  | 3 12 011 | Orbital information, Part II |  |
|  | 3 12 015 | MSU brightness temperatures – channels 1–4 |  |
|  |  |  |  |
|  |  | (SSU brightness temperatures – channels 1–3) |  |
| 3 12 017 | 1 09 008 | Replicate 9 descriptors 8 times |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 05 042 | Channel number |  |
|  | 0 05 052 | Channel number increment |  |
|  | 2 02 129 | Change scale |  |

*(continued)*

*(Category 12 – continued)*

|  |  |  |  |
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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 12 017 | 2 01 132 | Change data width |  |
| *(continued)* | 1 01 003 | Replicate 1 descriptor 3 times |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 2 02 000 | Change scale |  |
|  | 2 01 000 | Change data width |  |
|  |  |  |  |
|  |  | (SSU satellite data) |  |
| 3 12 018 | 3 12 010 | Orbital information, Part I |  |
|  | 3 12 011 | Orbital information, Part II |  |
|  | 3 12 017 | SSU brightness temperatures – channels 1-3 |  |
|  |  |  |  |
|  |  | (Wave scatterometer product with width change for wave number (spectral)) |  |
| 3 12 019 | 3 01 047 | ERS product header |  |
|  | 3 01 048 | Radar parameters |  |
|  | 0 15 015 | Maximum image spectral component before normalization |  |
|  | 0 29 002 | Coordinate grid type |  |
|  | 0 21 076 | Representation of intensities |  |
|  | 1 06 012 | Replicate 6 descriptors 12 times |  |
|  | 2 01 129 | Change data width | 14 bits long |
|  | 0 06 030 | Wave number (spectral) |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 1 02 012 | Replicate 2 descriptors 12 times |  |
|  | 0 05 030 | Direction (spectral) |  |
|  | 0 21 075 | Image spectrum intensity |  |
|  | 0 21 066 | Wave scatterometer product confidence data |  |
|  |  |  |  |
|  |  | (Wave scatterometer product) |  |
| 3 12 020 | 3 01 047 | ERS product header |  |
|  | 3 01 048 | Radar parameters |  |
|  | 0 15 015 | Maximum image spectral component before normalization |  |
|  | 0 29 002 | Coordinate grid type |  |
|  | 0 21 076 | Representation of intensities |  |
|  | 1 04 012 | Replicate 4 descriptors 12 times |  |
|  | 0 06 030 | Wave number (spectral) |  |
|  | 1 02 012 | Replicate 2 descriptors 12 times |  |
|  | 0 05 030 | Direction (spectral) |  |
|  | 0 21 075 | Image spectrum intensity |  |
|  | 0 21 066 | Wave scatterometer product confidence data |  |
|  |  |  |  |
|  |  | (Wind scatterometer product) |  |
| 3 12 021 | 3 01 047 | ERS product header |  |
|  | 1 01 003 | Replicate 1 descriptor 3 times |  |
|  | 3 01 049 | Radar beam data |  |
|  | 0 11 012 | Wind speed at 10 m |  |
|  | 0 11 011 | Wind direction at 10 m |  |
|  | 0 21 067 | Wind product confidence data |  |

*(continued)*

*(Category 12 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Radar altimeter product) |  |
| 3 12 022 | 3 01 047 | ERS product header |  |
|  | 0 08 022 | Total number (with respect to accumulation or average) | Number in average |
|  | 0 11 012 | Wind speed at 10 m |  |
|  | 0 11 050 | Standard deviation of horizontal wind speed |  |
|  | 0 22 070 | Significant wave height |  |
|  | 0 22 026 | Standard deviation of significant wave height |  |
|  | 3 12 041 | Altitude |  |
|  | 0 10 050 | Standard deviation altitude |  |
|  | 0 21 068 | Radar altimeter product confidence data |  |
|  | 0 21 071 | Peakiness |  |
|  | 0 21 072 | Satellite altimeter calibration status |  |
|  | 0 21 073 | Satellite altimeter instrument mode |  |
|  | 3 12 042 | Altitude corrections |  |
|  | 0 21 062 | Backscatter |  |
|  | 0 15 011 | Log10 of integrated electron density |  |
|  |  |  |  |
|  |  | (ATSR sea-surface temperature product) |  |
| 3 12 023 | 3 01 047 | ERS product header |  |
|  | 1 03 003 | Replicate 3 descriptors 3 times |  |
|  | 0 08 022 | Total number (with respect to accumulation or average) | Number in average |
|  | 0 12 061 | Skin temperature |  |
|  | 0 22 050 | Standard deviation sea-surface temperature |  |
|  | 0 21 069 | SST product confidence data |  |
|  | 0 21 085 | ATSR sea-surface temperature across-track band number |  |
|  |  |  |  |
|  |  | (Wave scatterometer product enhanced) |  |
| 3 12 024 | 3 12 020 | Wave scatterometer product |  |
|  | 0 08 060 | Sample scanning mode significance | Range |
|  | 0 08 022 | Total number (with respect to accumulation or average) | Number in sample |
|  | 0 08 060 | Sample scanning mode significance | Horizontal |
|  | 0 08 022 | Total number (with respect to accumulation or average) | Number in sample |
|  | 0 25 014 | Azimuth clutter cut-off |  |
|  | 0 22 101 | Total energy (wavelength > 731m) at low wave numbers |  |
|  | 0 22 097 | Mean wavelength > 731 m of image spectrum at low wave numbers |  |
|  | 0 22 098 | Wavelength spread (wavelength > 731 m) at low wave numbers |  |
|  | 0 22 099 | Mean direction at low wave numbers (wavelength > 731 m) |  |
|  | 0 22 100 | Direction spread at low wave numbers (wavelength > 731 m) |  |

*(continued)*

*(Category 12 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Wave scatterometer enhanced product (with change of width for wave number (spectral)) |  |
| 3 12 025 | 3 12 019 | Wave scatterometer product with width change for wave number (spectral) |  |
|  | 0 08 060 | Sample scanning mode significance | Range |
|  | 0 08 022 | Total number (with respect to accumulation or average) | Number in sample |
|  | 0 08 060 | Sample scanning mode significance | Horizontal |
|  | 0 08 022 | Total number (with respect to accumulation or average) | Number in sample |
|  | 0 25 014 | Azimuth clutter cut-off |  |
|  | 0 22 101 | Total energy (wavelength > 731m) at low wave numbers |  |
|  | 0 22 097 | Mean wavelength > 731 m of image spectrum at low wave numbers |  |
|  | 0 22 098 | Wavelength spread (wavelength > 731 m) at low wave numbers |  |
|  | 0 22 099 | Mean direction at low wave numbers (wavelength > 731 m) |  |
|  | 0 22 100 | Direction spread at low wave numbers (wavelength > 731 m) |  |
|  |  |  |  |
|  |  | (QUIKSCAT data) |  |
| 3 12 026 | 3 01 046 | Satellite identifier, direction of motion, sensor, model function, software, resolution |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 3 12 031 | SEAWINDS wind |  |
|  | 1 01 004 | Replicate 1 descriptor 4 times |  |
|  | 3 12 030 | Wind, formal uncertainty, likelihood |  |
|  | 0 21 110 | Number of inner-beam sigma-0 (forward of satellite) |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 3 21 027 | Radar specification, normalized radar cross-section, Kp variance coefficient |  |
|  | 0 21 111 | Number of outer-beam sigma-0 (forward of satellite) |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 3 21 027 | Radar specification, normalized radar cross-section, Kp variance coefficient |  |
|  | 0 21 112 | Number of inner-beam sigma-0 (aft of satellite) |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 3 21 027 | Radar specification, normalized radar cross-section, Kp variance coefficient |  |
|  | 0 21 113 | Number of outer-beam sigma-0 (aft of satellite) |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 3 21 027 | Radar specification, normalized radar cross-section, Kp variance coefficient |  |

*(continued)*

*(Category 12 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (ATSR SST product (SADIST-2)) |  |
| 3 12 027 | 3 01 047 | ERS product header |  |
|  | 1 05 009 | Replicate 5 descriptors 9 times |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) | 10-arcmin cell |
|  | 0 07 021 | Elevation | Incidence angle nadir view **|** Set to zero |
|  | 0 12 061 | Skin temperature | SST (nadir-only view) |
|  | 0 07 021 | Elevation | Incidence angle dual view **|** Set to missing |
|  | 0 12 061 | Skin temperature | SST (dual view) |
|  | 0 21 085 | ATSR sea-surface temperature across-track band number | 0–9 |
|  | 0 21 070 | SST product confidence data (SADIST-2) | 23-bit flag |
|  |  |  |  |
|  |  | (SEAWINDS QUIKSCAT data) |  |
| 3 12 028 | 3 01 046 | Satellite identifier, direction of motion, sensor, model function, software, resolution |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 08 025 | Time difference qualifier |  |
|  | 2 01 136 | Change data width |  |
|  | 0 04 006 | Second |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 3 12 031 | SEAWINDS wind |  |
|  | 3 12 032 | SEAWINDS precipitation |  |
|  | 1 01 004 | Replicate 1 descriptor 4 times |  |
|  | 3 12 030 | Wind, formal uncertainty, likelihood |  |
|  | 1 01 002 | Replicate 1 descriptor 2 times |  |
|  | 3 12 033 | Antenna polarization, brightness temperature |  |
|  | 0 21 110 | Number of inner-beam sigma-0 (forward of satellite) |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 3 21 028 | Radar specification, SEAWINDS normalized radar cross-section, Kp variance coefficient |  |
|  | 0 21 111 | Number of outer-beam sigma-0 (forward of satellite) |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 3 21 028 | Radar specification, SEAWINDS normalized radar cross-section, Kp variance coefficient |  |
|  | 0 21 112 | Number of inner-beam sigma-0 (aft of satellite) |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 3 21 028 | Radar specification, SEAWINDS normalized radar cross-section, Kp variance coefficient |  |
|  | 0 21 113 | Number of outer-beam sigma-0 (aft of satellite) |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 3 21 028 | Radar specification, SEAWINDS normalized radar cross-section, Kp variance coefficient |  |

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*(Category 12 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Wind, formal uncertainty, likelihood) |  |
| 3 12 030 | 2 01 130 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 0 11 012 | Wind speed at 10 m |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 11 052 | Formal uncertainty in wind speed |  |
|  | 2 01 135 | Change data width |  |
|  | 2 02 130 | Change scale |  |
|  | 0 11 011 | Wind direction at 10 m |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 11 053 | Formal uncertainty in wind direction |  |
|  | 0 21 104 | Likelihood computed for solution |  |
|  |  |  |  |
|  |  | (SEAWINDS wind) |  |
| 3 12 031 | 0 05 034 | Along-track row number |  |
|  | 0 06 034 | Cross-track cell number |  |
|  | 0 21 109 | SEAWINDS wind vector cell quality |  |
|  | 0 11 081 | Model wind direction at 10 m |  |
|  | 0 11 082 | Model wind speed at 10 m |  |
|  | 0 21 101 | Number of vector ambiguities |  |
|  | 0 21 102 | Index of selected wind vector |  |
|  | 0 21 103 | Total number of sigma-0 measurements |  |
|  |  |  |  |
|  |  | (SEAWINDS precipitation) |  |
| 3 12 032 | 0 21 120 | Probability of rain |  |
|  | 0 21 121 | SEAWINDS NOF rain index |  |
|  | 0 13 055 | Intensity of precipitation |  |
|  | 0 21 122 | Attenuation correction on sigma-0 (from tB) |  |
|  |  |  |  |
|  |  | (Antenna polarization, brightness temperature) |  |
| 3 12 033 | 0 02 104 | Antenna polarization |  |
|  | 0 08 022 | Total number (with respect to accumulation or average) |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 12 065 | Standard deviation brightness temperature |  |
|  |  |  |  |
|  |  | (Altitude) |  |
| 3 12 041 | 2 01 141 | Change data width | 28 bits long |
|  | 2 02 130 | Change scale | Scale: 2 |
|  | 0 07 001 | Height of station |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 02 000 | Change scale | Cancel |
|  |  |  |  |
|  |  | (Altitude corrections) |  |
| 3 12 042 | 0 21 077 | Altitude correction (ionosphere) |  |
|  | 0 21 078 | Altitude correction (dry troposphere) |  |
|  | 0 21 079 | Altitude correction (wet troposphere) |  |

*(continued)*

*(Category 12 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 12 042 | 0 21 080 | Altitude correction (calibration constant) |  |
| *(continued)* | 0 21 081 | Open loop correction (height-time loop) |  |
|  | 0 21 082 | Open loop correction (auto gain control) |  |
|  |  |  |  |
|  |  | (AATSR sea-surface temperatures) |  |
| 3 12 045 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 01 096 | Station acquisition |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 05 040 | Orbit number |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 002 | Height or altitude |  |
|  | 0 12 180 | Averaged 12 micron BT for all clear pixels at nadir |  |
|  | 0 12 181 | Averaged 11 micron BT for all clear pixels at nadir |  |
|  | 0 12 182 | Averaged 3.7 micron BT for all clear pixels at nadir |  |
|  | 0 12 183 | Averaged 12 micron BT for all clear pixels, forward view |  |
|  | 0 12 184 | Averaged 11 micron BT for all clear pixels, forward view |  |
|  | 0 12 185 | Averaged 3.7 micron BT for all clear pixels, forward view |  |
|  | 0 02 174 | Mean across-track pixel number |  |
|  | 0 21 086 | Number of pixels in nadir only, average |  |
|  | 0 12 186 | Mean nadir sea-surface temperature |  |
|  | 0 21 087 | Number of pixels in dual view, average |  |
|  | 0 12 187 | Mean dual view sea-surface temperature |  |
|  | 0 33 043 | AST confidence |  |
|  |  |  |  |
|  |  | (MERIS instrument reporting) |  |
| 3 12 050 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 01 096 | Station acquisition |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 05 040 | Orbit number |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  | 0 10 080 | Viewing zenith angle |  |
|  | 0 27 080 | Viewing azimuth angle |  |
|  | 0 08 003 | Vertical significance (satellite observations) |  |
|  | 0 07 004 | Pressure |  |
|  | 0 13 093 | Cloud optical thickness |  |
|  | 0 08 003 | Vertical significance (satellite observations) |  |
|  | 2 01 131 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 0 07 004 | Pressure |  |

*(continued)*

*(Category 12 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 12 050 | 0 07 004 | Pressure |  |
| *(continued)* | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 13 095 | Total column water vapour |  |
|  |  |  |  |
|  |  | (Ocean cross spectra – WVS) |  |
| 3 12 051 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 01 096 | Station acquisition |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 05 040 | Orbit number |  |
|  | 0 08 075 | Ascending/descending orbit qualifier |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 01 012 | Direction of motion of moving observing platform |  |
|  | 2 01 131 | Change data width |  |
|  | 0 01 013 | Speed of motion of moving observing platform |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 10 032 | Satellite distance to Earth’s centre |  |
|  | 0 10 033 | Altitude (platform to ellipsoid) |  |
|  | 0 10 034 | Earth’s radius |  |
|  | 0 07 002 | Height or altitude |  |
|  | 0 08 012 | Land/sea qualifier |  |
|  | 0 25 110 | Image processing summary |  |
|  | 0 25 111 | Number of input data gaps |  |
|  | 0 25 102 | Number of missing lines excluding data gaps |  |
|  | 0 02 104 | Antenna polarization |  |
|  | 0 25 103 | Number of directional bins |  |
|  | 0 25 104 | Number of wavelength bins |  |
|  | 0 25 105 | First directional bin |  |
|  | 0 25 106 | Directional bin step |  |
|  | 0 25 107 | First wavelength bin |  |
|  | 0 25 108 | Last wavelength bin |  |
|  | 0 02 111 | Radar incidence angle |  |
|  | 0 02 121 | Mean frequency |  |
|  | 0 02 026 | Cross-track resolution |  |
|  | 0 02 027 | Along-track resolution |  |
|  | 0 21 130 | Spectrum total energy |  |
|  | 0 21 131 | Spectrum max energy |  |
|  | 0 21 132 | Direction of spectrum max on higher resolution grid |  |
|  | 0 21 133 | Wavelength of spectrum max on higher resolution grid |  |
|  | 0 21 064 | Clutter noise estimate |  |
|  | 0 25 014 | Azimuth clutter cut-off |  |
|  | 0 21 134 | Range resolution of cress covariance spectrum |  |
|  | 1 07 018 | Replicate 7 descriptors 18 times |  |
|  | 0 05 030 | Direction (spectral) |  |
|  | 1 05 024 | Replicate 5 descriptors 24 times |  |
|  | 2 01 130 | Change data width |  |

*(continued)*

*(Category 12 – continued)*

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| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 12 051 | 0 06 030 | Wave number (spectral) |  |
| *(continued)* | 2 01 000 | Change data width | Cancel |
|  | 0 21 135 | Real part of cross spectra polar grid number of bins |  |
|  | 0 21 136 | Imaginary part of cross spectra polar grid number of bins |  |
|  | 0 33 044 | ASAR quality information |  |
|  |  |  |  |
|  |  | (RA2 – radar altimeter-2) |  |
| 3 12 052 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 01 096 | Station acquisition |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 05 040 | Orbit number |  |
|  | 0 25 120 | RA2-L2-processing flag |  |
|  | 0 25 121 | RA2-L2-processing quality |  |
|  | 0 25 124 | MWR-L2-processing flag |  |
|  | 0 25 125 | MWR-L2-processing quality |  |
|  | 0 25 122 | Hardware configuration for RF |  |
|  | 0 25 123 | Hardware configuration for HPA |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 002 | Height or altitude |  |
|  | 0 02 119 | RA-2 instrument operations |  |
|  | 0 33 047 | Measurement confidence data |  |
|  | 0 10 081 | Altitude of COG above reference ellipsoid |  |
|  | 0 10 082 | Instantaneous altitude rate |  |
|  | 0 10 083 | Squared off nadir angle of the satellite from platform data |  |
|  | 0 10 084 | Squared off nadir angle of the satellite from waveform data |  |
|  | 0 02 116 | Percentage of 320 MHz band processed |  |
|  | 0 02 117 | Percentage of 80 MHz band processed |  |
|  | 0 02 118 | Percentage of 20 MHz band processed |  |
|  | 0 02 156 | Percentage of valid Ku ocean retracker measurements |  |
|  | 0 02 157 | Percentage of valid S ocean retracker measurements |  |
|  | 0 14 055 | Solar activity index |  |
|  | 0 22 150 | Number of 18 Hz valid points for Ku band |  |
|  | 0 22 151 | Ku band ocean range |  |
|  | 0 22 152 | STD of 18 Hz Ku band ocean range |  |
|  | 0 22 153 | Number of 18 Hz valid points for S band |  |
|  | 0 22 154 | S band ocean range |  |
|  | 0 22 155 | STD of 18 Hz S band ocean range |  |
|  | 0 22 156 | Ku band significant wave height |  |
|  | 0 22 157 | STD of 18 Hz Ku band ocean range | Significant wave height |
|  | 0 22 158 | S band significant wave height |  |
|  | 0 22 159 | STD of 18 Hz S band significant wave height |  |
|  | 0 21 137 | Ku band corrected ocean backscatter coefficient |  |
|  | 0 21 138 | STD Ku band corrected ocean backscatter coefficient |  |

*(continued)*

*(Category 12 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 12 052 | 0 21 139 | Ku band net instrumental correction for AGC |  |
| *(continued)* | 0 21 140 | S band corrected ocean backscatter coefficient |  |
|  | 0 21 141 | STD S band corrected ocean backscatter coefficient |  |
|  | 0 21 142 | S band net instrumental correction for AGC |  |
|  | 0 10 085 | Mean sea-surface height |  |
|  | 0 10 086 | Geoid’s height |  |
|  | 0 10 087 | Ocean depth/land elevation |  |
|  | 0 10 088 | Total geocentric ocean tide height (solution 1) |  |
|  | 0 10 089 | Total geocentric ocean tide height (solution 2) |  |
|  | 0 10 090 | Long period tide height |  |
|  | 0 10 091 | Tidal loading height |  |
|  | 0 10 092 | Solid Earth tide height |  |
|  | 0 10 093 | Geocentric pole tide height |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 25 126 | Model dry tropospheric correction |  |
|  | 0 25 127 | Inverted barometer correction |  |
|  | 0 25 128 | Model wet tropospheric correction |  |
|  | 0 25 129 | MWR derived wet tropospheric correction |  |
|  | 0 25 130 | RA2 ionospheric correction on Ku band |  |
|  | 0 25 131 | Ionospheric correction from Doris on Ku band |  |
|  | 0 25 132 | Ionospheric correction from model on Ku band |  |
|  | 0 25 133 | Sea state bias correction on Ku band |  |
|  | 0 25 134 | RA2 ionospheric correction on S band |  |
|  | 0 25 135 | Ionospheric correction from Doris on S band |  |
|  | 0 25 136 | Ionospheric correction from model on S band |  |
|  | 0 25 137 | Sea state bias correction on S band |  |
|  | 0 13 096 | MWR water vapour content |  |
|  | 0 13 097 | MWR liquid water content |  |
|  | 0 11 095 | u-component of the model wind vector |  |
|  | 0 11 096 | v-component of the model wind vector |  |
|  | 0 12 188 | Interpolated 23.8 GHz brightness T from MWR |  |
|  | 0 12 189 | Interpolated 36.5 GHz brightness T from MWR |  |
|  | 0 02 158 | RA-2 instrument |  |
|  | 0 02 159 | MWR instrument |  |
|  | 0 33 052 | S band ocean retracking quality |  |
|  | 0 33 053 | Ku band ocean retracking quality |  |
|  | 0 21 143 | Ku band rain attenuation |  |
|  | 0 21 144 | Altimeter rain flag |  |
|  |  |  |  |
|  |  | (Ocean wave spectra) |  |
| 3 12 053 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 01 096 | Station acquisition |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 05 040 | Orbit number |  |
|  | 0 08 075 | Ascending/descending orbit qualifier |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |

*(continued)*

*(Category 12 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 12 053 | 0 01 012 | Direction of motion of moving observing platform |  |
| *(continued)* | 2 01 131 | Change data width |  |
|  | 0 01 013 | Speed of motion of moving observing platform |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 10 032 | Satellite distance to Earth’s centre |  |
|  | 0 10 033 | Altitude (platform to ellipsoid) |  |
|  | 0 10 034 | Earth’s radius |  |
|  | 0 07 002 | Height or altitude |  |
|  | 0 08 012 | Land/sea qualifier |  |
|  | 0 25 110 | Image processing summary |  |
|  | 0 25 111 | Number of input data gaps |  |
|  | 0 25 102 | Number of missing lines excluding data gaps |  |
|  | 0 02 104 | Antenna polarization |  |
|  | 0 25 103 | Number of directional bins |  |
|  | 0 25 104 | Number of wavelength bins |  |
|  | 0 25 105 | First directional bin |  |
|  | 0 25 106 | Directional bin step |  |
|  | 0 25 107 | First wavelength bin |  |
|  | 0 25 108 | Last wavelength bin |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 22 160 | Normalized inverse wave age |  |
|  | 0 25 138 | Average signal-to-noise ratio |  |
|  | 2 01 130 | Change data width |  |
|  | 2 02 129 | Change scale |  |
|  | 0 22 021 | Height of waves |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 33 048 | Confidence measure of SAR inversion |  |
|  | 0 33 049 | Confidence measure of wind retrieval |  |
|  | 0 02 026 | Cross-track resolution |  |
|  | 0 02 027 | Along-track resolution |  |
|  | 0 21 130 | Spectrum total energy |  |
|  | 0 21 131 | Spectrum max energy |  |
|  | 0 21 132 | Direction of spectrum max on higher resolution grid |  |
|  | 0 21 133 | Wavelength of spectrum max on higher resolution grid |  |
|  | 0 25 014 | Azimuth clutter cut-off |  |
|  | 1 06 036 | Replicate 6 descriptors 36 times |  |
|  | 0 05 030 | Direction (spectral) |  |
|  | 1 04 024 | Replicate 4 descriptors 24 times |  |
|  | 2 01 130 | Change data width |  |
|  | 0 06 030 | Wave number (spectral) |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 22 161 | Wave spectra |  |
|  | 0 33 044 | ASAR quality information |  |
|  |  |  |  |
|  |  | (ASCAT level 1b cell information) |  |
| 3 12 055 | 0 05 033 | Pixel size on horizontal – 1 |  |
|  | 0 05 040 | Orbit number |  |

*(continued)*

*(Category 12 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 12 055 | 0 06 034 | Cross-track cell number |  |
| *(continued)* | 0 10 095 | Height of atmosphere used |  |
|  | 0 21 157 | Loss per unit length of atmosphere used |  |
|  |  |  |  |
|  |  | (Scatterometer wind cell information) |  |
| 3 12 056 | 0 25 060 | Software identification |  |
|  | 0 01 032 | Generating application |  |
|  | 0 11 082 | Model wind speed at 10 m |  |
|  | 0 11 081 | Model wind direction at 10 m |  |
|  | 0 20 095 | Ice probability |  |
|  | 0 20 096 | Ice age (“A” parameter) |  |
|  | 0 21 155 | Wind vector cell quality |  |
|  | 2 01 133 | Change data width | Increase data width by 5 bits |
|  | 0 21 101 | Number of vector ambiguities |  |
|  | 0 21 102 | Index of selected wind vector |  |
|  | 2 01 000 | Change data width | Cancel |
|  |  |  |  |
|  |  | (Ambiguous wind data) |  |
| 3 12 057 | 2 01 130 | Change data width | Increase data width by 2 bits |
|  | 2 02 129 | Change scale | Increase scaling by 101 |
|  | 0 11 012 | Wind speed at 10 m |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 01 131 | Change data width | Increase data width by 3 bits |
|  | 2 02 129 | Change scale | Increase scaling by 101 |
|  | 0 11 011 | Wind direction at 10 m |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 21 156 | Backscatter distance |  |
|  | 0 21 104 | Likelihood computed for solution |  |
|  |  |  |  |
|  |  | (ASCAT level 1b data) |  |
| 3 12 058 | 3 01 125 | ASCAT header information |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 3 12 055 | ASCAT level 1b cell information |  |
|  | 0 21 150 | Beam co-location |  |
|  | 1 01 003 | Replicate 1 descriptor 3 times |  |
|  | 3 21 030 | ASCAT sigma-0 information |  |
|  |  |  |  |
|  |  | (Scatterometer wind data) |  |
| 3 12 059 | 3 12 056 | Scatterometer wind cell information |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 12 057 | Ambiguous wind data |  |

*(continued)*

*(Category 12 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Scatterometer soil moisture data) |  |
| 3 12 060 | 0 25 060 | Software identification |  |
|  | 0 25 062 | Database identification |  |
|  | 0 40 001 | Surface soil moisture (ms) |  |
|  | 0 40 002 | Estimated error in surface soil moisture |  |
|  | 0 21 062 | Backscatter | Extrapolated backscatter at 40 deg incidence angle (sigma0\_40) |
|  | 0 21 151 | Estimated error in sigma-0 at 40 degrees incidence angle |  |
|  | 0 21 152 | Slope at 40 degrees incidence angle |  |
|  | 0 21 153 | Estimated error in slope at 40 degrees incidence angle |  |
|  | 0 21 154 | Soil moisture sensitivity |  |
|  | 0 21 062 | Backscatter | Dry backscatter |
|  | 0 21 088 | Wet backscatter |  |
|  | 0 40 003 | Mean surface soil moisture |  |
|  | 0 40 004 | Rain fall detection |  |
|  | 0 40 005 | Soil moisture correction flag |  |
|  | 0 40 006 | Soil moisture processing flag |  |
|  | 0 40 007 | Soil moisture quality |  |
|  | 0 20 065 | Snow cover |  |
|  | 0 40 008 | Frozen land surface fraction |  |
|  | 0 40 009 | Inundation and wetland fraction |  |
|  | 0 40 010 | Topographic complexity |  |
|  |  |  |  |
|  |  | (ASCAT level 1b and level 2 data) |  |
| 3 12 061 | 3 12 058 | ASCAT level 1b data |  |
|  | 3 12 060 | Scatterometer soil moisture data |  |
|  | 3 12 059 | Scatterometer wind data |  |
|  |  |  |  |
|  |  | (SMOS data) |  |
| 3 12 070 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 01 144 | Snapshot identifier |  |
|  | 0 01 124 | Grid point identifier |  |
|  | 0 30 010 | Number of grid points |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 012 | Grid point altitude |  |
|  | 0 15 012 | Total electron count per square metre |  |
|  | 0 12 165 | Direct sun brightness temperature |  |
|  | 0 12 166 | Snapshot accuracy |  |
|  | 0 12 167 | Radiometric accuracy (pure polarization) |  |
|  | 0 12 168 | Radiometric accuracy (cross polarization) |  |
|  | 0 27 010 | Footprint axis 1 |  |
|  | 0 28 010 | Footprint axis 2 |  |
|  | 0 02 099 | Polarization |  |

*(continued)*

*(Category 12 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 12 070 | 0 13 048 | Water fraction |  |
| *(continued)* | 0 25 081 | Incidence angle |  |
|  | 0 25 082 | Azimuth angle |  |
|  | 0 25 083 | Faraday rotational angle |  |
|  | 0 25 084 | Geometric rotational angle |  |
|  | 0 12 080 | Brightness temperature real part |  |
|  | 0 12 081 | Brightness temperature imaginary part |  |
|  | 0 12 082 | Pixel radiometric accuracy |  |
|  | 0 25 174 | SMOS information flag |  |
|  | 0 33 028 | Snapshot overall quality |  |
|  |  |  |  |
|  |  | (CryoSat-2 SIRAL altimeter) |  |
| 3 12 071 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 02 139 | SIRAL instrument configuration |  |
|  | 0 01 096 | Station acquisition | Acquisition station name |
|  | 0 01 040 | Processing centre ID code |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 05 040 | Orbit number |  |
|  | 0 05 044 | Satellite cycle number |  |
|  | 0 08 075 | Ascending/descending orbit qualifier |  |
|  | 0 08 077 | Radiometer sensed surface type |  |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 04 006 | Second |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 10 081 | Altitude of COG above reference ellipsoid |  |
|  | 0 22 156 | Ku band significant wave height |  |
|  | 0 22 142 | Square of significant wave height |  |
|  | 1 01 020 | Replicate 1 descriptor 20 times |  |
|  | 0 22 149 | 20 Hz significant wave height squared |  |
|  | 0 22 143 | STD of 20 Hz SWH squared |  |
|  | 0 22 144 | Number of 20 Hz valid points for SWH squared |  |
|  | 0 21 137 | Ku band corrected ocean backscatter coefficient |  |
|  | 1 01 020 | Replicate 1 descriptor 20 times |  |
|  | 0 21 181 | 20 Hz ocean backscatter coefficient |  |
|  | 0 21 138 | STD Ku band corrected ocean backscatter coefficient |  |
|  | 0 21 180 | Number of 20 Hz valid points for ocean backscatter coefficient |  |
|  | 0 21 177 | Corrected OCOG backscatter coefficient |  |
|  | 0 21 178 | STD of 20 Hz OCOG backscatter coefficient |  |
|  | 0 21 179 | Number of 20 Hz valid points for OCOG backscatter coefficient |  |

*(continued)*

*(Category 12 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 12 071 | 0 10 079 | Off nadir angle of the satellite from platform data |  |
| *(continued)* | 0 10 085 | Mean sea-surface height |  |
|  | 0 10 086 | Geoid’s height |  |
|  | 0 10 087 | Ocean depth/land elevation |  |
|  | 0 10 089 | Total geocentric ocean tide height (solution 2) |  |
|  | 0 10 090 | Long period tide height |  |
|  | 0 10 091 | Tidal loading height |  |
|  | 0 10 092 | Solid Earth tide height |  |
|  | 0 10 093 | Geocentric pole tide height |  |
|  | 0 11 097 | Wind speed from altimeter |  |
|  | 0 21 093 | Ku band peakiness | Average of 20 Hz values |
|  | 1 01 020 | Replicate 1 descriptor 20 times |  |
|  | 0 21 182 | 20 Hz Ku band peakiness | 20 values |
|  | 0 33 053 | Ku band ocean retracking quality |  |
|  | 0 22 151 | Ku band ocean range |  |
|  | 0 22 145 | STD of 20 Hz ocean range |  |
|  | 0 22 148 | Number of 20 Hz valid points for ocean range |  |
|  | 0 22 146 | OCOG range |  |
|  | 0 22 147 | STD of 20 Hz OCOG range |  |
|  | 0 25 126 | Model dry tropospheric correction |  |
|  | 0 25 128 | Model wet tropospheric correction |  |
|  | 0 25 127 | Inverted barometer correction |  |
|  | 0 21 176 | High frequency variability correction |  |
|  | 0 25 132 | Ionospheric correction from model on Ku band |  |
|  | 0 25 133 | Sea state bias correction on Ku band |  |
|  | 0 25 182 | L1 processing flag |  |
|  | 0 25 183 | L1 processing quality |  |
|  | 0 25 180 | LRM mode per cent |  |
|  | 0 25 184 | L2 product status |  |
|  | 0 25 181 | L2 processing flag |  |
|  | 0 33 080 | Scan level quality flags | L2 processing quality |

Notes:

(1) Separation of single level satellite data into sets of BUFR messages helps compression and results in   
efficient data transmission and storage.

(2) Each BUFR message may contain data for a number of locations; the BUFR compression technique   
involves negligible overheads for data items that are invariant.

(3) Compound BUFR messages may be described within the data description section, if required (e.g.   
3 01 041, 3 04 001, 3 04 002, 3 04 003, 3 04 004, 3 04 005, 3 04 006).

**Category** **13** **–** **Sequences common to image data**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Radar reflectivity values) |  |
| 3 13 009 | 0 21 001 | Horizontal reflectivity |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 21 001 | Horizontal reflectivity |  |
|  |  |  |  |
|  |  | (Radar rainfall intensities) |  |
| 3 13 010 | 0 21 036 | Radar rainfall intensity |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 21 036 | Radar rainfall intensity |  |
|  |  |  |  |
|  |  | (Non run-length encoded row for Pixel value (4 bits)) |  |
| 3 13 031 | 0 06 002 | Longitude (coarse accuracy) | First longitude location minus one increment |
|  | 0 06 012 | Longitude increment (coarse accuracy) |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 0 30 001 | Pixel value (4 bits) |  |
|  |  |  |  |
|  |  | (Non run-length encoded picture data for Pixel value (4 bits)) |  |
| 3 13 032 | 0 05 002 | Latitude (coarse accuracy) | First latitude location minus one increment |
|  | 0 05 012 | Latitude increment (coarse accuracy) | Signed value so cannot cross pole |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 13 031 | Non run-length encoded row for Pixel value (4 bits) |  |
|  |  |  |  |
|  |  | (Run-length encoded row for Pixel value (4 bits)) |  |
| 3 13 041 | 0 06 002 | Longitude (coarse accuracy) | First longitude location minus one increment |
|  | 1 10 000 | Delayed replication of 10 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 06 012 | Longitude increment (coarse accuracy) |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 012 | Extended delayed descriptor and data repetition factor |  |
|  | 0 30 001 | Pixel value (4 bits) |  |
|  | 0 06 012 | Longitude increment (coarse accuracy) |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 30 001 | Pixel value (4 bits) |  |

*(continued)*

*(Category 13 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Run-length encoded picture data for Pixel value (4 bits)) |  |
| 3 13 042 | 0 05 002 | Latitude (coarse accuracy) | First latitude location minus one increment |
|  | 0 05 012 | Latitude increment (coarse accuracy) | Signed value so cannot cross pole |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 13 041 | Run-length encoded row for pixel value (4 bits) |  |
|  |  |  |  |
|  |  | (Run-length encoded picture data for pixel value (4 bits), regular grid) |  |
| 3 13 043 | 0 06 002 | Longitude (coarse accuracy) | First longitude location minus one increment |
|  | 0 05 002 | Latitude (coarse accuracy) | First latitude location minus one increment |
|  | 0 05 012 | Latitude increment (coarse accuracy) |  |
|  | 1 12 000 | Delayed replication of 12 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 1 10 000 | Delayed replication of 10 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 06 012 | Longitude increment (coarse accuracy) |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 011 | Delayed descriptor and data repetition factor |  |
|  | 0 30 001 | Pixel value (4 bits) |  |
|  | 0 06 012 | Longitude increment (coarse accuracy) |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 30 001 | Pixel value (4 bits) |  |

**Category** **15** **–** **Oceanographic report sequences**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Typically reported underwater sounding without optional fields) |  |
| 3 15 001 | 0 01 011 | Ship or mobile land station identifier | Ship’s call sign |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 3 06 001 | Depth, temperature |  |
|  |  |  |  |
|  |  | (Typically reported underwater sounding without optional fields) |  |
| 3 15 002 | 0 01 011 | Ship or mobile land station identifier | Ship’s call sign |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 3 06 004 | Depth, temperature, salinity |  |
|  |  |  |  |
|  |  | (Temperature and salinity profile observed by profile floats) |  |
| 3 15 003 | 0 01 087 | WMO marine observing platform extended identifier |  |
|  | 0 01 085 | Observing platform manufacturer’s model |  |
|  | 0 01 086 | Observing platform manufacturer’s serial number |  |
|  | 0 02 036 | Buoy type |  |
|  | 0 02 148 | Data collection and/or location system |  |
|  | 0 02 149 | Type of data buoy |  |
|  | 0 22 055 | Float cycle number |  |
|  | 0 22 056 | Direction of profile |  |
|  | 0 22 067 | Instrument type for water temperature/salinity profile measurement |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 08 080 | Qualifier for GTSPP quality flag |  |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 1 09 000 | Delayed replication of 9 descriptors |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 0 07 065 | Water pressure |  |
|  | 0 08 080 | Qualifier for GTSPP quality flag |  |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 22 045 | Sea/water temperature |  |
|  | 0 08 080 | Qualifier for GTSPP quality flag |  |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 22 064 | Salinity |  |
|  | 0 08 080 | Qualifier for GTSPP quality flag |  |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  |  |  |  |
|  |  | (XBT temperature profile data sequence) |  |
| 3 15 004 | 0 01 079 | Unique identifier for the profile | Hexadecimal string |
|  | 0 01 011 | Ship or mobile land station identifier | Ship’s call sign |
|  | 0 01 103 | IMO Number. Unique Lloyd’s register | = 0 to 9999999 |

*(continued)*

*(Category 15 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 15 004 *(continued)* | 0 01 087 | WMO marine observing platform extended identifier (see Note 1) |  |
|  | 0 01 019 | Long station or site name | Ship name |
|  | 0 01 080 | Ship line number according to SOOP |  |
|  | 0 05 036 | Ship transect number according to SOOP (see Note 2) |  |
|  | 0 01 036 | Agency in charge of operating the observing platform |  |
|  | 0 01 013 | Speed of motion of moving observing platform |  |
|  | 0 01 012 | Direction of motion of moving observing platform |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 07 033 | Height of sensor above water surface |  |
|  | 0 02 002 | Type of instrumentation for wind measurement |  |
|  | 0 11 002 | Wind speed |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) |  |
|  | 0 07 033 | Height of sensor above water surface |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  | 0 12 103 | Dewpoint temperature |  |
|  | 0 07 032 | Height of sensor above local ground (or deck of marine platform) | Set to missing (cancel) |
|  | 0 07 033 | Height of sensor above water surface | Set to missing (cancel) |
|  | 3 02 021 | Waves |  |
|  | 0 02 031 | Duration and time of current measurement |  |
|  | 0 02 030 | Method of current measurement |  |
|  | 0 22 005 | Direction of sea-surface current |  |
|  | 0 22 032 | Speed of sea-surface current |  |
|  | 0 22 063 | Total water depth |  |
|  | 0 08 080 | Qualifier for GTSPP quality flag |  |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 22 178 | XBT/XCTD launcher type |  |
|  | 0 22 177 | Height of XBT/XCTD launcher | Above sea level | 0 to 50 m in units of whole m |
|  | 0 22 067 | Instrument type for water temperature/salinity profile measurement |  |
|  | 0 08 041 | Data significance |  |
|  | 0 26 021 | Year |  |
|  | 0 26 022 | Month |  |
|  | 0 26 023 | Day |  |
|  | 0 22 068 | Water temperature profile recorder types |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 08 041 | Data significance | Set to missing (cancel) |
|  | 0 08 080 | Qualifier for GTSPP quality flag | Set to missing (cancel) |
|  | 0 02 171 | Instrument serial number for water temperature profile measurement |  |

*(continued)*

*(Category 15 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 15 004 | 3 02 090 | Sea/water temperature high precision |  |
| *(continued)* | 0 02 171 | Instrument serial number for water temperature profile measurement |  |
|  | 0 02 032 | Indicator for digitization (see Note 3) |  |
|  | 3 15 005 | Water temperature profile (temperature profile observed by XBT or buoy) |  |
|  |  |  |  |
|  |  | (Water temperature profile (temperature profile observed by XBT or buoy)) |  |
| 3 15 005 | 1 06 000 | Delayed replication of 6 descriptors |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 0 07 063 | Depth below sea/water surface (cm) |  |
|  | 0 08 080 | Qualifier for GTSPP quality flag | = 13 Water depth at a level |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  | 0 22 043 | Sea/water temperature |  |
|  | 0 08 080 | Qualifier for GTSPP quality flag | = 11 Water temperature at a level |
|  | 0 33 050 | Global GTSPP quality flag |  |
|  |  |  |  |
|  |  | (Sequence for representation of data derived from a ship-based lowered instrument measuring subsurface sea/water temperature, salinity and current profiles) |  |
| 3 15 007 | 3 01 003 | Ship’s call sign and motion |  |
|  |  | *Extended identification* |  |
|  | 0 01 019 | Long station or site name |  |
|  | 0 01 103 | IMO Number. Unique Lloyd's register | Values are restricted to between 0 and 9999999 |
|  | 0 01 087 | WMO marine observing platform extended identifier | Set to missing, if ship's call sign is reported |
|  |  | *Cruise/ship line information* |  |
|  | 0 01 036 | Agency in charge of operating the observing platform |  |
|  | 0 01 115 | Identifier of the cruise or mission under which the data were collected | Set to missing, if no cruise identifier is reported |
|  | 0 01 080 | Ship line number according to SOOP |  |
|  | 0 05 036 | Ship transect number according to SOOP |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  |  | *Profile information* |  |
|  | 0 01 079 | Unique identifier for the profile |  |
|  | 0 01 023 | Observation sequence number | Cast/station number along the line/transect |
|  | 0 22 063 | Total water depth |  |
|  |  | *Surface pressure* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 001 | Pressure and 3-hour pressure change |  |

*(continued)*

*(Category 15 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 15 007 |  | *Waves* |  |
| *(continued)* | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 021 | Waves |  |
|  |  | *Temperature and humidity data* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 052 | Ship temperature and humidity data |  |
|  |  | *Wind data* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 059 | Ship wind data |  |
|  |  | *Surface temperature, salinity and current* |  |
|  | 0 22 067 | Instrument type for water temperature/salinity profile measurement |  |
|  | 0 02 171 | Instrument serial number for water temperature profile measurement |  |
|  | 3 02 090 | Sea/water temperature high precision | Surface temperature |
|  | 3 06 033 | Surface salinity |  |
|  | 3 06 034 | Surface current |  |
|  | 0 02 171 | Instrument serial number for water temperature profile measurement | Set to missing (cancel) |
|  | 0 22 067 | Instrument type for water temperature/salinity profile measurement | Set to missing (cancel) |
|  |  | *Temperature and salinity profile data* |  |
|  | 0 02 038 | Method of water temperature and/or salinity measurement |  |
|  | 0 22 067 | Instrument type for water temperature/salinity profile measurement |  |
|  | 0 22 068 | Water temperature profile recorder types |  |
|  | 0 02 171 | Instrument serial number for water temperature profile measurement |  |
|  | 0 02 033 | Method of salinity/depth measurement |  |
|  | 0 02 032 | Indicator for digitization |  |
|  | 0 22 056 | Direction of profile |  |
|  | 0 03 011 | Method of depth calculation |  |
|  | 3 06 035 | Temperature and salinity profile |  |
|  |  | *Current profile data* |  |
|  | 1 07 000 | Delayed replication of 7 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 02 032 | Indicator for digitization |  |
|  | 0 03 010 | Method of sea/water current measurement |  |
|  | 0 02 031 | Duration and time of current measurement |  |
|  | 0 02 040 | Method of removing velocity and motion of platform from current |  |
|  | 0 22 056 | Direction of profile |  |
|  | 0 03 011 | Method of depth calculation |  |
|  | 3 06 036 | Current profile |  |
|  |  | *Dissolved oxygen profile data* |  |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |

*(continued)*

*(Category 15 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 15 007 | 0 31 000 | Short delayed descriptor replication factor |  |
| *(continued)* | 0 02 032 | Indicator for digitization |  |
|  | 0 03 012 | Instrument type/sensor for dissolved oxygen measurement |  |
|  | 0 03 011 | Method of depth calculation |  |
|  | 3 06 037 | Dissolved oxygen profile data |  |
|  |  |  |  |
|  |  | (Sequence for the representation of data from moored buoys) |  |
|  |  | *Buoy identification and location* |  |
| 3 15 008 | 3 01 126 | Sequence for representation of moored buoy identification |  |
|  |  | *Standard meteorological data* |  |
|  | 3 06 038 | Sequence for representation of standard surface marine meteorological observations from moored buoys | For buoys equipped with more than 1 anemometer, the height of sensor should relate to the one being used |
|  |  | *Optional ancillary meteorological data* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 091 | Sequence for representation of ancillary meteorological observations |  |
|  |  | *Optional radiation measurements* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 02 082 | Radiation data |  |
|  |  | *Optional basic wave measurements* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 06 039 | Sequence for representation of basic wave measurements |  |
|  |  | *Optional spectral wave measurements* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 06 040 | Sequence for representation of detailed spectral wave measurements |  |
|  |  | *Optional temperature profile measurements* |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 02 005 | Precision of temperature observation |  |
|  | 3 06 041 | Depth and temperature profile (high accuracy/ precision) |  |
|  |  | *Optional temperature and salinity profile   measurements* |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 02 005 | Precision of temperature observation |  |
|  | 3 06 004 | Depth, temperature, salinity |  |

*(continued)*

*(Category 15 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 15 008 |  | *Optional subsurface current measurements* |  |
| *(continued)* | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 06 005 | Subsurface current measurements |  |
|  |  |  |  |
|  |  | (Sequence for the representation of data from drifting buoys) |  |
| 3 15 009 | 0 01 087 | WMO marine observing platform extended identifier |  |
|  | 0 01 019 | Long station or site name |  |
|  | 0 02 149 | Type of data buoy |  |
|  |  | *Time/date of last known position* |  |
|  | 0 08 021 | Time significance | = 26 Time of last known position |
|  | 3 01 011 | Year, month, day | Date of last known position |
|  | 3 01 012 | Hour, minute | Time of last known position |
|  |  | *Location and location quality* |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 2 08 016 | Change width of CCITT IA5 field | Change to 16 characters |
|  | 0 01 051 | Platform Transmitter ID number |  |
|  | 2 08 000 | Change width of CCITT IA5 field | Cancel |
|  | 0 02 148 | Data collection and/or location system | = 1 Argos, = 8 Iridium and GPS, = 9 Argos-3 |
|  | 0 01 012 | Direction of motion of moving observing platform | Platform drift direction |
|  | 0 01 014 | Platform drift speed (high precision) | Speed of motion of moving observing platform |
|  | 0 33 022 | Quality of buoy satellite transmission |  |
|  | 0 33 023 | Quality of buoy location |  |
|  | 0 33 027 | Location quality class (range of radius of 66% confidence) |  |
|  | 0 25 026 | Battery voltage (large range) | Platform battery voltage |
|  |  | *Drogue status* |  |
|  | 0 02 034 | Drogue type |  |
|  | 0 22 060 | Lagrangian drifter drogue status |  |
|  | 0 07 070 | Drogue depth |  |
|  | 0 02 190 | Lagrangian drifter submergence (% time submerged) |  |
|  |  | *Time/date of observation* |  |
|  | 0 08 021 | Time significance | = 25 Nominal reporting time |
|  | 3 01 011 | Year, month, day | Date of observation |
|  | 3 01 012 | Hour, minute | Time of observation |
|  |  | *Surface temperature and salinity* |  |
|  | 0 02 005 | Precision of temperature observation |  |
|  | 0 22 043 | Sea/water temperature |  |
|  | 0 02 033 | Method of salinity/depth measurement |  |
|  | 0 22 059 | Sea-surface salinity |  |

*(continued)*

*(Category 15 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 15 009 |  | *Surface type/ice information* |  |
| *(continued)* | 0 08 029 | Surface type |  |
|  | 0 13 115 | Ice thickness |  |
|  |  | *Optional temperature and salinity profile   measurements* |  |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 02 005 | Precision of temperature observation |  |
|  | 3 06 004 | Depth, temperature, salinity |  |
|  | 0 02 005 | Precision of temperature observation | Set to missing (cancel) |
|  |  | *Pressure and air temperature data* |  |
|  | 0 10 004 | Pressure |  |
|  | 0 10 051 | Pressure reduced to mean sea level |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 07 033 | Height of sensor above water surface |  |
|  | 0 12 101 | Temperature/air temperature |  |
|  |  | *Wind data* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 06 042 | Wind measurement from drifting buoy |  |
|  |  | *Wave data* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 06 039 | Sequence for representation of basic wave measurements |  |

Notes:

(1) If field 0 01 011 is used, this field will be left missing and vice versa.

(2) Integer, assigned by the operator, incremented for each new transect (i.e. all drops have the same transect number while the ship is moving from one end point of the line to the other end point; as soon as the ship arrived to port and goes back to start a new transect then transect number is incremented). The initial value and subsequent values for transect numbers do not matter provided that each new transect by a ship on a line has a transect number higher than previous transect numbers for the same line and the same ship. In case a single cruise follows more than one SOOP line in a row, then the transect number should be incremented each time the cruise changes line.

(3) This descriptor applies to the method used to select depths for the temperature profile encoded through 3 15 005. If temperatures are reported at signiﬁcant depths, the values shall:

(a) Be sufficient to reproduce basic features of the profile;

(b) Define the top and the bottom of isothermal layers.

**Category 16 – Synoptic feature sequences**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 16 001 | 3 01 011 | Year, month, day |  |
|  | 0 04 004 | Hour |  |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 01 021 | Synoptic feature identifier |  |
|  | 0 02 041 | Method for estimating reports related to synoptic features |  |
|  | 0 19 001 | Type of synoptic feature |  |
|  | 0 10 051 | Pressure reduced to mean sea level |  |
|  | 0 19 002 | Effective radius of feature |  |
|  | 0 19 003 | Wind speed threshold | 15 m s–1 typically |
|  | 0 19 004 | Effective radius with respect to wind speeds above threshold |  |
|  |  |  |  |
|  |  | (Header) |  |
| 3 16 002 | 0 08 021 | Time significance | Data time (analysis) |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 08 021 | Time significance | Validity time (forecast) |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 07 002 | Height or altitude | Flight level (base of chart layer) |
|  | 0 07 002 | Height or altitude | Flight level (top of chart layer) |
|  |  |  |  |
|  |  | (Jet stream) |  |
| 3 16 003 | 1 10 000 | Delayed replication of 10 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 011 | Meteorological feature | Jet stream value |
|  | 0 08 007 | Dimensional significance | Value for line |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 10 002 | Height | Flight level |
|  | 0 11 002 | Wind speed |  |
|  | 0 08 007 | Dimensional significance | Cancel |
|  | 0 08 011 | Meteorological feature | Cancel **|** End of object |

*(continued)*

*(Category 16 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Turbulence) |  |
| 3 16 004 | 1 11 000 | Delayed replication of 11 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 011 | Meteorological feature | Value for turbulence |
|  | 0 08 007 | Dimensional significance | Value for area |
|  | 0 07 002 | Height or altitude | Flight level (base of layer) |
|  | 0 07 002 | Height or altitude | Flight level (top of layer) |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 11 031 | Degree of turbulence (see Note 1) |  |
|  | 0 08 007 | Dimensional significance | Cancel |
|  | 0 08 011 | Meteorological feature | Cancel **|** End of object |
|  |  |  |  |
|  |  | (Storm) |  |
| 3 16 005 | 1 08 000 | Delayed replication of 8 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 005 | Meteorological attribute significance | Storm centre |
|  | 0 08 007 | Dimensional significance | Value for point |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 01 026 | WMO storm name | Use “UNKNOWN” for a sandstorm |
|  | 0 19 001 | Type of synoptic feature | Value for type of storm |
|  | 0 08 007 | Dimensional significance | Cancel |
|  | 0 08 005 | Meteorological attribute significance | Cancel **|** End of object |
|  |  |  |  |
|  |  | (Cloud) |  |
| 3 16 006 | 1 12 000 | Delayed replication of 12 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 011 | Meteorological feature | Value for cloud |
|  | 0 08 007 | Dimensional significance | Value for area |
|  | 0 07 002 | Height or altitude | Flight level (base of layer) |
|  | 0 07 002 | Height or altitude | Flight level (top of layer) |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 20 011 | Cloud amount (see Note 2) |  |
|  | 0 20 012 | Cloud type |  |
|  | 0 08 007 | Dimensional significance | Cancel |
|  | 0 08 011 | Meteorological feature | Cancel **|** End of object |

*(continued)*

*(Category 16 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Front) |  |
| 3 16 007 | 1 10 000 | Delayed replication of 10 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 011 | Meteorological feature (see Note 3) | Value for type of front |
|  | 0 08 007 | Dimensional significance | Value for line |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 19 005 | Direction of motion of feature |  |
|  | 0 19 006 | Speed of motion of feature |  |
|  | 0 08 007 | Dimensional significance | Cancel |
|  | 0 08 011 | Meteorological feature | Cancel **|** End of object |
|  |  |  |  |
|  |  | (Tropopause) |  |
| 3 16 008 | 1 11 000 | Delayed replication of 11 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 001 | Vertical sounding significance | Bit 3 set for tropopause |
|  | 0 08 007 | Dimensional significance | Value for point |
|  | 0 08 023 | First-order statistics (see Note 4) | Type of tropopause value |
|  | 1 03 000 | Delayed replication of 3 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 10 002 | Height |  |
|  | 0 08 023 | First-order statistics | Cancel |
|  | 0 08 007 | Dimensional significance | Cancel |
|  | 0 08 001 | Vertical sounding significance | Cancel **|** End of object |
|  |  |  |  |
|  |  | (Airframe icing area) |  |
| 3 16 009 | 1 11 000 | Delayed replication of 11 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 011 | Meteorological feature | Value for airframe icing |
|  | 0 08 007 | Dimensional significance | Value for area |
|  | 0 07 002 | Height or altitude | Flight level (base of layer) |
|  | 0 07 002 | Height or altitude | Flight level (top of layer) |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 20 041 | Airframe icing | Type of airframe icing |
|  | 0 08 007 | Dimensional significance | Cancel |
|  | 0 08 011 | Meteorological feature | Cancel **|** End of object |

*(continued)*

*(Category 16 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Name of feature) |  |
| 3 16 010 | 1 07 000 | Delayed replication of 7 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 011 | Meteorological feature |  |
|  | 0 08 007 | Dimensional significance | Value for point |
|  | 0 01 022 | Name of feature |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 08 007 | Dimensional significance | Cancel |
|  | 0 08 011 | Meteorological feature | Cancel **|** End of object |
|  |  |  |  |
|  |  | (Volcano erupting) |  |
| 3 16 011 | 1 17 000 | Delayed replication of 17 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 011 | Meteorological feature | Value for special clouds |
|  | 0 01 022 | Name of feature | Volcano name |
|  | 0 08 007 | Dimensional significance | Value for point |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 08 021 | Time significance | Eruption starting time |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 20 090 | Special clouds | Clouds from volcanic eruptions |
|  | 0 08 021 | Time significance | Cancel |
|  | 0 08 007 | Dimensional significance | Cancel |
|  | 0 08 011 | Meteorological feature | Cancel **|** End of object |
|  |  |  |  |
|  |  | (Tropical storm identification) |  |
| 3 16 020 | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 01 025 | Storm identifier |  |
|  | 0 01 027 | WMO long storm name |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  |  |  |  |
|  |  | (Analysis data) |  |
| 3 16 021 | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 02 041 | Method for estimating reports related to synoptic features |  |
|  | 0 19 001 | Type of synoptic feature |  |
|  | 0 19 007 | Effective radius of feature |  |
|  | 0 19 005 | Direction of motion of feature |  |
|  | 0 19 006 | Speed of motion of feature |  |

*(continued)*

*(Category 16 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 16 021 | 0 19 008 | Vertical extent of circulation |  |
| *(continued)* | 0 08 005 | Meteorological attribute significance | = 1 Storm centre |
|  | 0 10 004 | Pressure | Storm centre by virtue of preceding significance qualifier |
|  | 0 08 005 | Meteorological attribute significance | = 2 Outer limit or edge of feature |
|  | 0 10 004 | Pressure | Outer limit |
|  | 0 19 007 | Effective radius of feature | Outer limit |
|  | 0 08 005 | Meteorological attribute significance | = 3 Location of maximum wind |
|  | 0 08 021 | Time significance | Time averaged |
|  | 0 04 075 | Short time period or displacement | Minutes |
|  | 0 11 040 | Maximum wind speed (mean wind) |  |
|  | 0 19 007 | Effective radius of feature | Maximum wind |
|  | 1 05 004 | Replicate 5 descriptors 4 times |  |
|  | 0 05 021 | Bearing or azimuth | Starting |
|  | 0 05 021 | Bearing or azimuth | Ending |
|  | 1 02 002 | Replicate 2 descriptors 2 times |  |
|  | 0 19 003 | Wind speed threshold |  |
|  | 0 19 004 | Effective radius with respect to wind speeds above threshold |  |
|  |  |  |  |
|  |  | (Forecast data) |  |
| 3 16 022 | 0 01 032 | Generating application | NWP model name, etc. code table defined by originating/ generating centre |
|  | 0 02 041 | Method for estimating reports related to synoptic features |  |
|  | 0 19 001 | Type of synoptic feature |  |
|  | 0 19 010 | Method for tracking the centre of synoptic feature |  |
|  | 1 18 000 | Delayed replication of 18 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 021 | Time significance | Forecast |
|  | 0 04 014 | Time increment | Hours |
|  | 0 08 005 | Meteorological attribute significance | Surface synoptic feature |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 19 005 | Direction of motion of feature |  |
|  | 0 19 006 | Speed of motion of feature |  |
|  | 0 10 004 | Pressure |  |
|  | 0 11 041 | Maximum wind gust speed | For example, used in the United States |
|  | 0 08 021 | Time significance | Forecast time averaged |
|  | 0 04 075 | Short time period or displacement | Minutes |
|  | 0 11 040 | Maximum wind speed (mean wind) |  |
|  | 0 19 008 | Vertical extent of circulation |  |
|  | 1 05 004 | Replicate 5 descriptors 4 times |  |

*(continued)*

*(Category 16 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 16 022 | 0 05 021 | Bearing or azimuth | Starting |
| *(continued)* | 0 05 021 | Bearing or azimuth | Ending |
|  | 1 02 002 | Replicate 2 descriptors 2 times |  |
|  | 0 19 003 | Wind speed threshold |  |
|  | 0 19 004 | Effective radius with respect to wind speeds above threshold |  |
|  |  |  |  |
|  |  | (Tropical storm analysis information) |  |
| 3 16 026 | 3 16 020 | Tropical storm identification |  |
|  | 3 16 021 | Analysis data |  |
|  |  |  |  |
|  |  | (Tropical storm forecast information) |  |
| 3 16 027 | 3 16 020 | Tropical storm identification |  |
|  | 3 16 022 | Forecast data |  |
|  |  |  |  |
|  |  | (SIGMET header) |  |
| 3 16 030 | 3 01 014 | Time period | For which SIGMET is valid |
|  | 0 01 037 | SIGMET sequence identifier |  |
|  | 0 10 064 | SIGMET cruising level |  |
|  | 0 08 019 | Qualifier for following centre identifier | = 1 ATS unit serving FIR |
|  | 0 01 062 | Short ICAO location indicator |  |
|  | 0 08 019 | Qualifier for following centre identifier | = 2 FIR, = 3 UIR,  = 4 CTA |
|  | 0 01 065 | ICAO region identifier |  |
|  | 0 08 019 | Qualifier for following centre identifier | = 6 MWO |
|  | 0 01 062 | Short ICAO location indicator |  |
|  | 0 08 019 | Qualifier for following centre identifier | Set to missing (cancel) |
|  |  |  |  |
|  |  | (SIGMET, Observed or forecast location and motion) |  |
| 3 16 031 | 0 08 021 | Time significance | = 16 Analysis,  = 4 Forecast |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 027 | Description of a feature in 3-D or 2-D |  |
|  | 0 19 005 | Direction of motion of feature |  |
|  | 0 19 006 | Speed of motion of feature |  |
|  | 0 20 028 | Expected change in intensity |  |
|  | 0 08 021 | Time significance | Set to missing (cancel) |
|  |  |  |  |
|  |  | (SIGMET, Forecast position) |  |
| 3 16 032 | 0 08 021 | Time significance | = 4 Forecast |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 3 01 027 | Description of a feature in 3-D or 2-D |  |
|  | 0 08 021 | Time significance | Set to missing (cancel) |

*(continued)*

*(Category 16 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (SIGMET, Outlook) |  |
| 3 16 033 | 0 08 021 | Time significance | = 4 Forecast |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 01 027 | Description of a feature in 3-D or 2-D |  |
|  | 0 08 021 | Time significance | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Volcanic Ash SIGMET) |  |
| 3 16 034 | 0 08 079 | Product status | = 0 Normal issue,  = 1 Correction |
|  | 3 16 030 | SIGMET header |  |
|  | 0 08 011 | Meteorological feature | = 17 Volcano |
|  | 0 01 022 | Name of feature |  |
|  | 0 08 007 | Dimensional significance | = 0 Point |
|  | 3 01 023 | Latitude/longitude (coarse accuracy) |  |
|  | 0 08 007 | Dimensional significance | Set to missing (cancel) |
|  | 0 20 090 | Special clouds | = 5 Clouds from volcanic eruptions |
|  | 3 16 031 | SIGMET, Observed or forecast location and motion |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 16 032 | SIGMET, Forecast position |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 16 033 | SIGMET, Outlook |  |
|  | 0 08 011 | Meteorological feature | Set to missing (cancel) |
|  | 0 08 079 | Product status | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Thunderstorm SIGMET) |  |
| 3 16 035 | 0 08 079 | Product status | = 0 Normal issue,  = 1 Correction |
|  | 3 16 030 | SIGMET header |  |
|  | 0 08 011 | Meteorological feature | = 21 Thunderstorm |
|  | 0 20 023 | Other weather phenomena | Bit 2 = Squalls or all 18 bits = Missing |
|  | 0 20 021 | Type of precipitation | Bit 14 = Hail or all 30 bits = Missing |
|  | 0 20 008 | Cloud distribution for aviation | = 15 OBSC,  = 16 EMBD, = 12 FRQ, = 31 Missing |
|  | 3 16 031 | SIGMET, Observed or forecast location and motion |  |
|  | 0 08 011 | Meteorological feature | Set to missing (cancel) |
|  | 0 08 079 | Product status | Set to missing (cancel) |

*(continued)*

*(Category 16 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Tropical cyclone SIGMET) |  |
| 3 16 036 | 0 08 079 | Product status | = 0 Normal issue,  = 1 Correction |
|  | 3 16 030 | SIGMET header |  |
|  | 0 08 011 | Meteorological feature | = 22 Tropical cyclone |
|  | 0 01 027 | WMO long storm name |  |
|  | 3 16 031 | SIGMET, Observed or forecast location and motion |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 3 16 032 | SIGMET, Forecast position |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 16 033 | SIGMET, Outlook |  |
|  | 0 08 011 | Meteorological feature | Set to missing (cancel) |
|  | 0 08 079 | Product status | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Turbulence SIGMET) |  |
| 3 16 037 | 0 08 079 | Product status | = 0 Normal issue,  = 1 Correction |
|  | 3 16 030 | SIGMET header |  |
|  | 0 08 011 | Meteorological feature | = 13 Turbulence |
|  | 0 11 031 | Degree of turbulence | = 10 Moderate,  = 11 Severe |
|  | 3 16 031 | SIGMET, Observed or forecast location and motion |  |
|  | 0 08 011 | Meteorological feature | Set to missing (cancel) |
|  | 0 08 079 | Product status | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Icing SIGMET) |  |
| 3 16 038 | 0 08 079 | Product status | = 0 Normal issue,  = 1 Correction |
|  | 3 16 030 | SIGMET header |  |
|  | 0 08 011 | Meteorological feature | = 15 Airframe icing |
|  | 0 20 041 | Airframe icing | = 7 Severe |
|  | 0 20 021 | Type of precipitation | Bit 3 = Liquid freezing or all 30 bits = Missing |
|  | 3 16 031 | SIGMET, Observed or forecast location and motion |  |
|  | 0 08 011 | Meteorological feature | Set to missing (cancel) |
|  | 0 08 079 | Product status | Set to missing (cancel) |
|  |  |  |  |
|  |  | (Mountain wave, duststorm or sandstorm SIGMET) |  |
| 3 16 039 | 0 08 079 | Product status | = 0 Normal issue, = 1 Correction |
|  | 3 16 030 | SIGMET header |  |
|  | 0 08 011 | Meteorological feature | = 23 Mountain wave,  = 24 Duststorm,  = 25 Sandstorm |
|  | 0 20 024 | Intensity of phenomena | = 3 Heavy, = 5 Severe |
|  | 3 16 031 | SIGMET, Observed or forecast location and motion |  |
|  | 0 08 011 | Meteorological feature | Set to missing (cancel) |
|  | 0 08 079 | Product status | Set to missing (cancel) |

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*(Category 16 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Cancellation of SIGMET) |  |
| 3 16 040 | 3 16 030 | SIGMET header |  |
|  | 0 08 079 | Product status | = 4 Cancellation |
|  | 3 01 014 | Time period | Of the SIGMET to be cancelled |
|  | 0 01 037 | SIGMET sequence identifier | Of the SIGMET to be cancelled |
|  | 0 10 064 | SIGMET cruising level | Of the SIGMET to be cancelled |
|  | 0 08 079 | Product status | Set to missing (cancel) |
|  |  |  |  |
|  |  | (RADOB template – Part A: Information on tropical cyclone) |  |
| 3 16 050 | 3 01 001 | WMO block and station numbers |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 0 02 160 | Wavelength of the radar |  |
|  | 0 08 005 | Meteorological attribute significance | = 1 |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 08 005 | Meteorological attribute significance | Cancel |
|  | 0 19 100 | Time interval to calculate the movement of the tropical cyclone |  |
|  | 0 19 005 | Direction of motion of feature |  |
|  | 0 19 006 | Speed of motion of feature |  |
|  | 0 19 101 | Accuracy of the position of the centre of the tropical cyclone |  |
|  | 0 19 102 | Shape and definition of the eye of the tropical cyclone |  |
|  | 0 19 103 | Diameter of major axis of the eye of the tropical cyclone |  |
|  | 0 19 104 | Change in character of the eye during the 30 minutes |  |
|  | 0 19 105 | Distance between the end of spiral band and the centre |  |
|  |  |  |  |
|  |  | (SAREP template – Part A: Information on tropical cyclone) |  |
| 3 16 052 | 3 01 005 | Originating centre/sub-centre |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 0 01 007 | Satellite identifier |  |
|  | 0 25 150 | Method of tropical cyclone intensity analysis using satellite data |  |
|  | 1 22 000 | Delayed replication of 22 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 01 027 | WMO long storm name |  |
|  | 0 19 150 | Typhoon International Common Number (Typhoon Committee) |  |
|  | 0 19 106 | Identification number of tropical cyclone |  |
|  | 0 08 005 | Meteorological attribute significance | = 1 |
|  | 0 05 002 | Latitude (coarse accuracy) |  |

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*(Category 16 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 16 052 | 0 06 002 | Longitude (coarse accuracy) |  |
| *(continued)* | 0 08 005 | Meteorological attribute significance | Cancel |
|  | 0 19 107 | Time interval over which the movement of the tropical cyclone has been calculated |  |
|  | 0 19 005 | Direction of motion of feature |  |
|  | 0 19 006 | Speed of motion of feature |  |
|  | 0 19 108 | Accuracy of geographical position of the tropical cyclone |  |
|  | 0 19 109 | Mean diameter of the overcast cloud of the tropical cyclone |  |
|  | 0 19 110 | Apparent 24-hour change in intensity of the tropical cyclone |  |
|  | 0 19 111 | Current Intensity (CI) number of the tropical cyclone |  |
|  | 0 19 112 | Data Tropical (DT) number of the tropical cyclone |  |
|  | 0 19 113 | Cloud pattern type of the DT-number |  |
|  | 0 19 114 | Model Expected Tropical (MET) number of the tropical cyclone |  |
|  | 0 19 115 | Trend of the past 24-hour change (+: Developed, –: Weakened) |  |
|  | 0 19 116 | Pattern Tropical (PT) number of the tropical cyclone |  |
|  | 0 19 117 | Cloud picture type of the PT-number |  |
|  | 0 19 118 | Final Tropical (T) number of the tropical cyclone |  |
|  | 0 19 119 | Type of the final T-number |  |
|  |  |  |  |
|  |  | (Definition of squall line (by 3 points: Centre, North, South) and forecasted trajectory and evolution) |  |
| 3 16 060 | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  |  | *Position of squall line centre* |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 19 005 | Direction of motion of feature |  |
|  | 0 19 006 | Speed of motion of feature |  |
|  |  | *Amplitude of feature from most external points to  centre point – North point* |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  |  | *Amplitude of feature from most external points to  centre point – South point* |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  |  | *Amplitude of feature from most external points to  centre point – Evolution* |  |
|  | 0 04 074 | Short time period or displacement | Period of validity |
|  | 0 20 048 | Evolution of feature |  |
|  | 0 11 041 | Maximum wind gust speed | Maximum burst expected |
|  | 0 13 055 | Intensity of precipitation | Intensity of rain expected |

*(continued)*

*(Category 16 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Definition of squall line (by centre and several points: North points and South points) and forecasted trajectory and evolution) |  |
| 3 16 061 | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  |  | *Position of squall line centre* |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 0 19 005 | Direction of motion of feature |  |
|  | 0 19 006 | Speed of motion of feature |  |
|  |  | *Amplitude of feature from most external points to  centre point – North points* |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  |  | *Amplitude of feature from most external points to  centre point – South points* |  |
|  | 1 02 000 | Delayed replication of 2 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  |  | *Amplitude of feature from most external points to  centre point – Evolution* |  |
|  | 0 04 074 | Short time period or displacement | Period of validity |
|  | 0 20 048 | Evolution of feature |  |
|  | 0 11 041 | Maximum wind gust speed | Maximum burst expected |
|  | 0 13 055 | Intensity of precipitation | Intensity of rain expected |
|  |  |  |  |
|  |  | (Graphical AIRMET Sierra) |  |
| 3 16 071 | 3 01 014 | Time period | For which AIRMET is valid |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 16 075 | GFA IFR ceiling and visibility |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 16 076 | GFA mountain obscuration |  |
|  |  |  |  |
|  |  | (Graphical AIRMET Tango) |  |
| 3 16 072 | 3 01 014 | Time period | For which AIRMET is valid |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 16 077 | GFA turbulence |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 16 078 | GFA strong surface wind |  |

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*(Category 16 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 16 072 | 1 01 000 | Delayed replication of 1 descriptor |  |
| *(continued)* | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 16 079 | GFA low-level wind shear |  |
|  |  |  |  |
|  |  | (Graphical AIRMET Zulu) |  |
| 3 16 073 | 3 01 014 | Time period | For which AIRMET is valid |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 16 080 | GFA icing |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 16 081 | GFA freezing level |  |
|  |  |  |  |
|  |  | (GFA identifier and observed/forecast location) |  |
| 3 16 074 | 0 01 039 | Graphical Area Forecast (GFA) sequence identifier |  |
|  | 0 08 021 | Time significance | = 4 Forecast,  = 16 Analysis |
|  | 3 01 014 | Time period | For which hazard is being observed/ forecast |
|  | 3 01 027 | Description of a feature in 3-D or 2-D |  |
|  | 0 08 021 | Time significance | Set to missing (cancel) |
|  |  |  |  |
|  |  | (GFA IFR ceiling and visibility) |  |
| 3 16 075 | 0 08 079 | Product status | = 0 Normal, = 1 COR, = 2 AMD, = 3 COR AMD, = 4 CNL |
|  | 0 08 041 | Data significance | = 8 IFR ceiling and visibility |
|  | 3 16 074 | GFA identifier and observed/forecast location |  |
|  | 0 20 006 | Flight rules | = 1 IFR |
|  | 0 33 042 | Type of limit represented by following value | = 2 Exclusive upper limit, = 7 Missing |
|  | 0 20 013 | Height of base of cloud |  |
|  | 0 33 042 | Type of limit represented by following value | = 2 Exclusive upper limit, = 7 Missing |
|  | 0 20 001 | Horizontal visibility |  |
|  | 0 20 025 | Obscuration |  |
|  | 0 20 026 | Character of obscuration | = 6 Blowing,  = 15 Missing |
|  | 0 08 041 | Data significance | Set to missing (cancel) |
|  | 0 08 079 | Product status | Set to missing (cancel) |
|  |  |  |  |
|  |  | (GFA mountain obscuration) |  |
| 3 16 076 | 0 08 079 | Product status | = 0 Normal, = 1 COR, = 2 AMD, = 3 COR AMD, = 4 CNL |
|  | 0 08 041 | Data significance | = 9 Mountain obscuration |

*(continued)*

*(Category 16 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 16 076 | 3 16 074 | GFA identifier and observed/forecast location |  |
| *(continued)* | 0 20 006 | Flight rules | = 1 IFR |
|  | 0 20 025 | Obscuration |  |
|  | 0 20 026 | Character of obscuration | = 6 Blowing,  = 15 Missing |
|  | 0 08 041 | Data significance | Set to missing (cancel) |
|  | 0 08 079 | Product status | Set to missing (cancel) |
|  |  |  |  |
|  |  | (GFA turbulence) |  |
| 3 16 077 | 0 08 079 | Product status | = 0 Normal, = 1 COR, = 2 AMD, = 3 COR AMD, = 4 CNL |
|  | 0 08 011 | Meteorological feature | = 13 Turbulence |
|  | 3 16 074 | GFA identifier and observed/forecast location |  |
|  | 0 11 031 | Degree of turbulence | = 6 Moderate |
|  | 0 08 011 | Meteorological feature | Set to missing (cancel) |
|  | 0 08 079 | Product status | Set to missing (cancel) |
|  |  |  |  |
|  |  | (GFA strong surface wind) |  |
| 3 16 078 | 0 08 079 | Product status | = 0 Normal, = 1 COR, = 2 AMD, = 3 COR AMD, = 4 CNL |
|  | 0 08 041 | Data significance | = 10 Strong surface wind |
|  | 3 16 074 | GFA identifier and observed/forecast location |  |
|  | 0 33 042 | Type of limit represented by following value | = 0 Exclusive lower limit |
|  | 0 11 012 | Wind speed at 10 m |  |
|  | 0 08 041 | Data significance | Set to missing (cancel) |
|  | 0 08 079 | Product status | Set to missing (cancel) |
|  |  |  |  |
|  |  | (GFA low-level wind shear) |  |
| 3 16 079 | 0 08 079 | Product status | = 0 Normal, = 1 COR, = 2 AMD, = 3 COR AMD, = 4 CNL |
|  | 0 08 011 | Meteorological feature | = 16 Phenomenon |
|  | 3 16 074 | GFA identifier and observed/forecast location |  |
|  | 0 20 023 | Other weather phenomena | Bit 12 = Wind shear |
|  | 0 20 024 | Intensity of phenomena |  |
|  | 0 08 011 | Meteorological feature | Set to missing (cancel) |
|  | 0 08 079 | Product status | Set to missing (cancel) |
|  |  |  |  |
|  |  | (GFA icing) |  |
| 3 16 080 | 0 08 079 | Product status | = 0 Normal, = 1 COR, = 2 AMD, = 3 COR AMD, = 4 CNL |
|  | 0 08 011 | Meteorological feature | = 15 Airframe icing |
|  | 3 16 074 | GFA identifier and observed/forecast location |  |
|  | 0 20 041 | Airframe icing | = 4 Moderate icing |
|  | 0 08 011 | Meteorological feature | Set to missing (cancel) |
|  | 0 08 079 | Product status | Set to missing (cancel) |

*(continued)*

*(Category 16 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (GFA freezing level) |  |
| 3 16 081 | 0 08 079 | Product status | = 0 Normal, = 1 COR, = 2 AMD, = 3 COR AMD, = 4 CNL |
|  | 0 08 041 | Data significance | = 11 Freezing level,  = 12 Multiple freezing level |
|  | 3 16 074 | GFA identifier and observed/forecast location |  |
|  | 0 08 041 | Data significance | Set to missing (cancel) |
|  | 0 08 079 | Product status | Set to missing (cancel) |

Notes:

(1) For MOD OCNL SEV code as 12 (extreme in clear air) or 13 (extreme in cloud).

(2) Code table values:

FRQ = code figure 8 (8 oktas)

OCNL EMBD = code figure 6 (6 oktas)

ISOL = code figure 2 (2 oktas) when the cloud = Cb.

(3) Front direction (towards which the front is moving) must always be given as it is needed for plotting purposes. A front direction with a front speed of zero would indicate a slow front. A value in the code table exists to represent a quasi-stationary front.

(4) The statistic is to determine whether the following tropopause levels are minimum, maximum or spot values (missing code value).

(5) Decibel (dB) is a logarithmic measure of the relative power, or of the relative values of two flux densities, especially of sound intensities and radio and radar power densities. In radar meteorology, the logarithmic scale (dBZ) is used for measuring radar reflectivity factor (obtained from the American Meteorological Society *Glossary of Meteorology*).

**Category** **18** **–** **Radiological report sequences**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 18 001 | 3 01 025 | Latitude/longitude (coarse accuracy), day/time |  |
|  | 0 24 011 | Dose |  |
|  |  |  |  |
| 3 18 003 | 3 01 026 | Latitude/longitude (high accuracy), time period (day, hour, minute) |  |
|  | 0 24 005 | Isotope mass |  |
|  | 0 24 004 | Element name |  |
|  | 0 24 021 | Air concentration (of named isotope type including gross beta) |  |
|  |  |  |  |
| 3 18 004 | 3 01 025 | Latitude/longitude (coarse accuracy), day/time |  |
|  | 0 04 023 | Time period or displacement |  |
|  | 0 13 011 | Total precipitation/total water equivalent |  |
|  | 0 24 005 | Isotope mass |  |
|  | 0 24 004 | Element name |  |
|  | 0 24 022 | Concentration in precipitation (of named isotope type) |  |

**Category** **21** **–** **Radar report sequences**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Wind profiler – antenna characteristics) |  |
| 3 21 001 | 0 02 101 | Type of antenna |  |
|  | 0 02 114 | Antenna effective surface area |  |
|  | 0 02 105 | Maximum antenna gain |  |
|  | 0 02 106 | 3-dB beamwidth |  |
|  | 0 02 107 | Sidelobe suppression |  |
|  | 0 02 121 | Mean frequency |  |
|  |  |  |  |
|  |  | (Wind profiler – moment data) |  |
| 3 21 003 | 0 21 051 | Signal power above 1 mW |  |
|  | 0 21 014 | Doppler mean velocity (radial) |  |
|  | 0 21 017 | Doppler velocity spectral width |  |
|  | 0 21 030 | Signal to noise ratio |  |
|  |  |  |  |
|  |  | (Wind profiler – moment data sounding) |  |
| 3 21 004 | 3 01 031 | Identification and type of station, date/time, location (high accuracy), height of station |  |
|  | 0 02 003 | Type of measuring equipment used |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 3 21 003 | Wind profiler – moment data |  |
|  |  |  |  |
|  |  | (Transmitter-receiver characteristics) |  |
| 3 21 005 | 0 25 004 | Echo processing |  |
|  | 0 02 121 | Mean frequency |  |
|  | 0 02 122 | Frequency agility range |  |
|  | 0 02 123 | Peak power |  |
|  | 0 02 124 | Average power |  |
|  | 0 02 125 | Pulse repetition frequency |  |
|  | 0 02 126 | Pulse width |  |
|  | 0 02 127 | Receiver intermediate frequency |  |
|  | 0 02 128 | Intermediate frequency bandwidth |  |
|  | 0 02 129 | Minimum detectable signal |  |
|  | 0 02 130 | Dynamic range |  |
|  | 0 02 131 | Sensitivity time control (STC) |  |
|  |  |  |  |
|  |  | (Integration characteristics) |  |
| 3 21 006 | 0 25 001 | Range-gate length |  |
|  | 0 25 002 | Number of gates averaged |  |
|  | 0 25 003 | Number of integrated pulses |  |
|  | 0 25 005 | Echo integration |  |
|  |  |  |  |
|  |  | (Corrections) |  |
| 3 21 007 | 0 25 009 | Calibration method |  |
|  | 0 25 010 | Clutter treatment |  |
|  | 0 25 011 | Ground occultation correction (screening) |  |
|  | 0 25 012 | Range attenuation correction |  |
|  | 0 25 013 | Bright-band correction |  |
|  | 0 25 015 | Radome attenuation correction |  |
|  | 0 25 016 | Clear-air attenuation correction |  |
|  | 0 25 017 | Precipitation attenuation correction |  |

*(continued)*

*(Category 21 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Z to R conversion) |  |
| 3 21 008 | 0 25 006 | Z to R conversion |  |
|  | 0 25 007 | Z to R conversion factor |  |
|  | 0 25 008 | Z to R conversion exponent |  |
|  |  |  |  |
|  |  | (A to Z law) |  |
| 3 21 009 | 0 25 018 | A to Z law for attenuation factor |  |
|  | 0 25 019 | A to Z law for attenuation exponent |  |
|  |  |  |  |
|  |  | (Antenna characteristics) |  |
| 3 21 010 | 0 02 101 | Type of antenna |  |
|  | 0 07 002 | Height or altitude | Altitude of the tower base |
|  | 0 02 102 | Antenna height above tower base |  |
|  | 0 02 103 | Radome |  |
|  | 0 02 104 | Antenna polarization |  |
|  | 0 02 105 | Maximum antenna gain |  |
|  | 0 02 106 | 3-dB beamwidth |  |
|  | 0 02 107 | Sidelobe suppression |  |
|  | 0 02 108 | Crosspol discrimination (on axis) |  |
|  | 0 02 109 | Antenna speed (azimuth) |  |
|  | 0 02 110 | Antenna speed (elevation) |  |
|  | 0 02 132 | Azimuth pointing accuracy |  |
|  | 0 02 133 | Elevation pointing accuracy |  |
|  |  |  |  |
|  |  | (General characteristics) |  |
| 3 21 011 | 0 30 031 | Picture type |  |
|  | 0 30 032 | Combination with other data |  |
|  | 0 29 002 | Coordinate grid type |  |
|  |  |  |  |
|  |  | (Antenna elevations) |  |
| 3 21 012 | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 02 135 | Antenna elevation |  |
|  |  |  |  |
|  |  | (Basic information (system/site header) on wind profiler/RASS) |  |
| 3 21 021 | 0 02 003 | Type of measuring equipment used |  |
|  | 0 02 101 | Type of antenna |  |
|  | 2 01 130 | Change data width | 8 bits long |
|  | 0 02 106 | 3-dB beamwidth |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 01 132 | Change data width | 11 bits long |
|  | 2 02 130 | Change scale | Scale: –6 |
|  | 0 02 121 | Mean frequency |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 01 133 | Change data width | 11 bits long |
|  | 2 02 129 | Change scale | Scale: 0 |
|  | 0 25 001 | Range-gate length |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |

*(continued)*

*(Category 21 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Wind profiler: processed-data winds) |  |
| 3 21 022 | 0 07 007 | Height |  |
|  | 2 04 001 | Add associated field | 1 bit long |
|  | 0 31 021 | Associated field significance |  |
|  | 0 11 001 | Wind direction |  |
|  | 2 04 000 | Add associated field | Cancel |
|  | 0 11 002 | Wind speed |  |
|  | 2 04 001 | Add associated field | 1 bit long |
|  | 0 31 021 | Associated field significance |  |
|  | 0 11 006 | w-component |  |
|  | 2 04 000 | Add associated field | Cancel |
|  | 0 21 030 | Signal to noise ratio |  |
|  |  |  |  |
|  |  | (Wind profiler: raw-data winds) |  |
| 3 21 023 | 0 07 007 | Height |  |
|  | 0 21 091 | Radar signal Doppler spectrum 0th moment |  |
|  | 0 21 030 | Signal to noise ratio |  |
|  | 2 02 129 | Change scale | Scale: 2 |
|  | 0 21 014 | Doppler mean velocity (radial) |  |
|  | 2 01 129 | Change data width | 9 bits long |
|  | 0 21 017 | Doppler velocity spectral width |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  |  |  |  |
|  |  | (RASS-mode: processed-data RASS) |  |
| 3 21 024 | 0 07 007 | Height |  |
|  | 2 04 001 | Add associated field | 1 bit long |
|  | 0 31 021 | Associated field significance |  |
|  | 0 12 007 | Virtual temperature |  |
|  | 0 11 006 | w-component |  |
|  | 2 04 000 | Add associated field | Cancel |
|  | 0 21 030 | Signal to noise ratio |  |
|  |  |  |  |
|  |  | (RASS-mode: raw-data RASS) |  |
| 3 21 025 | 0 07 007 | Height |  |
|  | 0 21 091 | Radar signal Doppler spectrum 0th moment |  |
|  | 0 21 030 | Signal to noise ratio |  |
|  | 2 02 129 | Change scale | Scale: 2 |
|  | 0 21 014 | Doppler mean velocity (radial) |  |
|  | 2 01 129 | Change data width | 9 bits long |
|  | 0 21 017 | Doppler velocity spectral width |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 21 092 | RASS signal Doppler spectrum 0th moment, referring to RASS signal |  |
|  | 0 21 030 | Signal to noise ratio | Referring to RASS signal |
|  | 0 25 092 | Acoustic propagation velocity |  |
|  | 2 01 129 | Change data width | 9 bits long |
|  | 2 02 129 | Change scale | Scale: 2 |
|  | 0 21 017 | Doppler velocity spectral width | Referring to RASS signal |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |

*(continued)*

*(Category 21 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (RASS data – fluxes) |  |
| 3 21 026 | 0 07 007 | Height |  |
|  | 2 04 001 | Add associated field | 1 bit long |
|  | 0 31 021 | Associated field significance |  |
|  | 0 12 007 | Virtual temperature |  |
|  | 0 25 091 | Structure constant of the refraction index (Cn2) |  |
|  | 0 11 071 | Turbulent vertical momentum flux |  |
|  | 0 11 072 | Turbulent vertical buoyancy flux |  |
|  | 0 11 073 | Turbulent kinetic energy |  |
|  | 0 11 074 | Dissipation energy |  |
|  | 2 04 000 | Add associated field | Cancel |
|  |  |  |  |
|  |  | (Radar specification, normalized radar cross-section, Kp variance coefficient) |  |
| 3 21 027 | 0 21 118 | Attenuation correction on sigma-0 |  |
|  | 2 02 129 | Change scale |  |
|  | 2 01 132 | Change data width |  |
|  | 0 02 112 | Radar look angle |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 01 131 | Change data width |  |
|  | 0 02 111 | Radar incidence angle |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 02 000 | Change scale | Cancel |
|  | 0 02 104 | Antenna polarization |  |
|  | 0 21 105 | Normalized radar cross-section |  |
|  | 0 21 106 | Kp variance coefficient (alpha) |  |
|  | 0 21 107 | Kp variance coefficient (beta) |  |
|  | 0 21 114 | Kp variance coefficient (gamma) |  |
|  | 0 21 115 | SEAWINDS sigma-0 quality |  |
|  | 0 21 116 | SEAWINDS sigma-0 mode |  |
|  | 0 08 018 | SEAWINDS land/ice surface type |  |
|  | 0 21 117 | Sigma-0 variance quality control |  |
|  |  |  |  |
|  |  | (Radar specification, SEAWINDS normalized radar cross-section, Kp variance coefficient) |  |
| 3 21 028 | 0 21 118 | Attenuation correction on sigma-0 |  |
|  | 2 02 129 | Change scale |  |
|  | 2 01 132 | Change data width |  |
|  | 0 02 112 | Radar look angle |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 01 131 | Change data width |  |
|  | 0 02 111 | Radar incidence angle |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 02 000 | Change scale | Cancel |
|  | 0 02 104 | Antenna polarization |  |
|  | 0 21 123 | SEAWINDS normalized radar cross-section |  |
|  | 0 21 106 | Kp variance coefficient (alpha) |  |
|  | 0 21 107 | Kp variance coefficient (beta) |  |
|  | 0 21 114 | Kp variance coefficient (gamma) |  |
|  | 0 21 115 | SEAWINDS sigma-0 quality |  |
|  | 0 21 116 | SEAWINDS sigma-0 mode |  |
|  | 0 08 018 | SEAWINDS land/ice surface type |  |
|  | 0 21 117 | Sigma-0 variance quality control |  |

*(continued)*

*(Category 21 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (ASCAT sigma-0 information) |  |
| 3 21 030 | 0 08 085 | Beam identifier |  |
|  | 2 02 129 | Change scale | Increase scale by 101 |
|  | 2 01 131 | Change data width | Increase width by 3 bits |
|  | 0 02 111 | Radar incidence angle |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 02 000 | Change scale | Cancel |
|  | 0 02 134 | Antenna beam azimuth |  |
|  | 0 21 062 | Backscatter |  |
|  | 0 21 063 | Radiometric resolution (noise value) |  |
|  | 0 21 158 | ASCAT Kp estimate quality |  |
|  | 0 21 159 | ASCAT sigma-0 usability |  |
|  | 0 21 160 | ASCAT use of synthetic data |  |
|  | 0 21 161 | ASCAT synthetic data quantity |  |
|  | 0 21 162 | ASCAT satellite orbit and attitude quality |  |
|  | 0 21 163 | ASCAT solar array reflection contamination |  |
|  | 0 21 164 | ASCAT telemetry presence and quality |  |
|  | 0 21 165 | ASCAT extrapolated reference function presence |  |
|  | 0 21 166 | Land fraction |  |

**Category** **22** **–** **Chemical and aerosol sequences**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (METOP GOME-2) |  |
| 3 22 028 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 04 006 | Second |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 27 001 | Latitude (high accuracy) |  |
|  | 0 28 001 | Longitude (high accuracy) |  |
|  | 0 27 001 | Latitude (high accuracy) |  |
|  | 0 28 001 | Longitude (high accuracy) |  |
|  | 0 27 001 | Latitude (high accuracy) |  |
|  | 0 28 001 | Longitude (high accuracy) |  |
|  | 0 27 001 | Latitude (high accuracy) |  |
|  | 0 28 001 | Longitude (high accuracy) |  |
|  | 0 10 001 | Height of land surface |  |
|  | 0 14 019 | Surface albedo |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 10 080 | Viewing zenith angle |  |
|  | 0 05 023 | Sun to satellite azimuth difference |  |
|  | 0 20 010 | Cloud cover (total) |  |
|  | 0 08 003 | Vertical significance (satellite observations) |  |
|  | 0 07 004 | Pressure |  |
|  | 0 14 026 | Albedo at the top of clouds |  |
|  | 0 20 014 | Height of top of cloud |  |
|  | 0 13 093 | Cloud optical thickness |  |
|  | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 004 | Pressure |  |
|  | 0 07 004 | Pressure |  |
|  | 0 08 043 | Atmospheric chemical or physical constituent type |  |
|  | 0 08 044 | CAS registry number |  |
|  | 0 15 021 | Integrated mass density |  |

**Category** **40** **–** **Additional satellite report sequences**

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (IASI Level 1c data) |  |
| 3 40 001 | 0 01 007 | Satellite identifier |  |
|  | 0 01 031 | Identification of originating/generating centre |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 02 020 | Satellite classification |  |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 2 02 131 | Change scale | Add 3 to scale |
|  | 2 01 138 | Change data width | Add 10 to width |
|  | 0 04 006 | Second |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 02 000 | Change scale | Cancel |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  | 0 05 043 | Field of view number |  |
|  | 0 05 040 | Orbit number |  |
|  | 2 01 133 | Change data width | Add 5 to width |
|  | 0 05 041 | Scan line number |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 01 132 | Change data width | Add 4 to width |
|  | 0 25 070 | Major frame count |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 02 126 | Change scale | Subtract 2 from scale |
|  | 0 07 001 | Height of station |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 0 33 060 | GqisFlagQual – individual IASI-System quality flag |  |
|  | 0 33 061 | GqisQualIndex – indicator for instrument noise performance (contributions from spectral and radiometric calibration) |  |
|  | 0 33 062 | GqisQualIndexLoc – indicator for geometric quality index |  |
|  | 0 33 063 | GqisQualIndexRad – indicator for instrument noise performance (contributions from radiometric calibration) |  |
|  | 0 33 064 | GqisQualIndexSpect – indicator for instrument noise performance (contributions from spectral calibration) |  |
|  | 0 33 065 | GqisSysTecSondQual – output of system TEC (Technical Expertise Centre) quality function |  |
|  | 1 01 010 | Replicate 1 descriptor 10 times |  |
|  | 3 40 002 | Band description |  |
|  | 1 01 087 | Replicate 1 descriptor 87 times |  |
|  | 3 40 003 | IASI Level 1c 100 channels |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 25 051 | AVHRR channel combination |  |
|  | 1 01 007 | Replicate 1 descriptor 7 times |  |
|  | 3 40 004 | IASI Level 1c AVHRR single scene |  |

*(continued)*

*(Category 40 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (Band description) |  |
| 3 40 002 | 0 25 140 | Start channel |  |
|  | 0 25 141 | End channel |  |
|  | 0 25 142 | Channel scale factor |  |
|  |  |  |  |
|  |  | (IASI Level 1c 100 channels) |  |
| 3 40 003 | 1 04 100 | Replicate 4 descriptors 100 times |  |
|  | 2 01 136 | Change data width | Add 8 to width |
|  | 0 05 042 | Channel number |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 14 046 | Scaled radiance |  |
|  |  |  |  |
|  |  | (IASI Level 1c AVHRR single scene) |  |
| 3 40 004 | 0 05 060 | Y angular position from centre of gravity |  |
|  | 0 05 061 | Z angular position from centre of gravity |  |
|  | 0 25 085 | Fraction of clear pixels in HIRS FOV |  |
|  | 1 05 006 | Replicate 5 descriptors 6 times |  |
|  | 0 05 042 | Channel number |  |
|  | 0 25 142 | Channel scale factor |  |
|  | 0 14 047 | Scaled mean AVHRR radiance |  |
|  | 0 25 142 | Channel scale factor |  |
|  | 0 14 048 | Scaled standard deviation AVHRR radiance |  |
|  |  |  |  |
|  |  | (JASON2 OGDR data) |  |
| 3 40 005 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 01 096 | Station acquisition |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 05 044 | Satellite cycle number |  |
|  | 0 05 040 | Orbit number |  |
|  | 0 01 030 | Numerical model identifier |  |
|  |  | *Datation* |  |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 04 007 | Seconds within a minute (microsecond accuracy) |  |
|  |  | *Location and surface type* |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 08 029 | Surface type |  |
|  | 0 08 074 | Altimeter echo type |  |
|  | 0 08 077 | Radiometer sensed surface type |  |
|  |  | *Flags* |  |
|  | 0 40 011 | Interpolation flag |  |
|  | 0 25 097 | Three-dimensional error estimate of the navigator orbit |  |

*(continued)*

*(Category 40 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 005 | 0 25 095 | Altimeter state flag |  |
| *(continued)* | 0 25 098 | Altimeter data quality flag |  |
|  | 0 25 099 | Altimeter correction quality flag |  |
|  | 0 21 144 | Altimeter rain flag |  |
|  | 0 25 096 | Radiometer state flag |  |
|  | 0 40 012 | Radiometer data quality flag |  |
|  | 0 40 013 | Radiometer brightness temperature interpretation flag |  |
|  | 0 21 169 | Ice presence indicator |  |
|  |  | *Altimeter: Ku band* |  |
|  | 0 22 151 | Ku band ocean range |  |
|  | 0 22 162 | RMS of 20 Hz Ku band ocean range |  |
|  | 0 22 163 | Number of 20 Hz valid points for Ku band |  |
|  | 0 25 160 | Ku band net instrumental correction |  |
|  | 0 25 133 | Sea state bias correction on Ku band |  |
|  | 0 22 156 | Ku band significant wave height |  |
|  | 0 22 164 | RMS 20 Hz Ku band significant wave height |  |
|  | 0 22 165 | Number of 20 Hz valid points for Ku band significant wave height |  |
|  | 0 22 166 | Ku band net instrumental correction for significant wave height |  |
|  | 0 21 137 | Ku band corrected ocean backscatter coefficient |  |
|  | 0 21 138 | STD Ku band corrected ocean backscatter coefficient |  |
|  | 0 22 167 | Number of valid points for Ku band backscatter |  |
|  | 0 21 139 | Ku band net instrumental correction for AGC |  |
|  | 0 21 118 | Attenuation correction on sigma-0 |  |
|  | 0 21 145 | Ku band automatic gain control |  |
|  | 0 21 146 | RMS Ku band automatic gain control |  |
|  | 0 21 147 | Number of valid points for Ku band automatic gain control |  |
|  |  | *Altimeter: C band* |  |
|  | 0 22 168 | C band ocean range |  |
|  | 0 22 169 | RMS of C band ocean range |  |
|  | 0 22 170 | Number of 20 Hz valid points for C band |  |
|  | 0 25 161 | C band net instrumental correction |  |
|  | 0 25 162 | Sea state bias correction on C band |  |
|  | 0 22 171 | C band significant wave height |  |
|  | 0 22 172 | RMS 20 Hz C band significant wave height |  |
|  | 0 22 173 | Number of 20 Hz valid points for C band significant wave height |  |
|  | 0 22 174 | C band net instrumental correction for significant wave height |  |
|  | 0 21 170 | C band corrected ocean backscatter coefficient |  |
|  | 0 21 171 | RMS C band corrected ocean backscatter coefficient |  |
|  | 0 22 175 | Number of valid points for C band backscatter |  |
|  | 0 21 172 | C band net instrumental correction for AGC |  |
|  | 0 21 118 | Attenuation correction on sigma-0 |  |
|  | 0 21 173 | C band automatic gain control |  |
|  | 0 21 174 | RMS C band automatic gain control |  |
|  | 0 21 175 | Number of valid points for C band automatic gain control |  |

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*(Category 40 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 005 |  | *Radiometer* |  |
| *(continued)* | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 13 090 | Radiometer water vapour content |  |
|  | 0 13 091 | Radiometer liquid content |  |
|  |  | *Wind* |  |
|  | 0 07 002 | Height or altitude |  |
|  | 0 11 097 | Wind speed from altimeter |  |
|  | 0 11 098 | Wind speed from radiometer |  |
|  | 0 07 002 | Height or altitude |  |
|  | 0 11 095 | u-component of the model wind vector |  |
|  | 0 11 096 | v-component of the model wind vector |  |
|  |  | *Dynamic topography* |  |
|  | 0 10 096 | Mean dynamic topography |  |
|  | 0 10 081 | Altitude of COG above reference ellipsoid |  |
|  | 0 10 082 | Instantaneous altitude rate |  |
|  | 0 10 083 | Squared off nadir angle of the satellite from platform data |  |
|  | 0 10 101 | Squared off nadir angle of the satellite from waveform data |  |
|  | 0 25 132 | Ionospheric correction from model on Ku band |  |
|  | 0 25 163 | Altimeter ionospheric correction on Ku band |  |
|  | 0 25 126 | Model dry tropospheric correction |  |
|  | 0 25 128 | Model wet tropospheric correction |  |
|  | 0 25 164 | Radiometer wet tropospheric correction |  |
|  | 0 10 085 | Mean sea-surface height |  |
|  | 0 10 097 | Mean sea-surface height from altimeter only |  |
|  | 0 10 086 | Geoid’s height |  |
|  | 0 10 087 | Ocean depth/land elevation |  |
|  | 0 10 092 | Solid Earth tide height |  |
|  | 0 10 088 | Total geocentric ocean tide height (solution 1) |  |
|  | 0 10 089 | Total geocentric ocean tide height (solution 2) |  |
|  | 0 10 098 | Loading tide height geocentric ocean tide solution 1 |  |
|  | 0 10 099 | Loading tide height geocentric ocean tide solution 2 |  |
|  | 0 10 090 | Long period tide height |  |
|  | 0 10 100 | Non-equilibrium long period tide height |  |
|  | 0 10 093 | Geocentric pole tide height |  |
|  | 0 25 127 | Inverted barometer correction | Sea-surface height correction due to pressure loading |
|  | 0 40 014 | High-frequency fluctuations of the sea-surface topography correction |  |

*(continued)*

*(Category 40 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (IASI Level 1c data (all channels)) |  |
| 3 40 007 | 0 01 007 | Satellite identifier |  |
|  | 0 01 031 | Identification of originating/generating centre |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 02 020 | Satellite classification |  |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 2 02 131 | Change scale | Add 3 to scale |
|  | 2 01 138 | Change data width | Add 10 to width |
|  | 0 04 006 | Second |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 02 000 | Change scale | Cancel |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  | 0 05 043 | Field of view number |  |
|  | 0 05 040 | Orbit number |  |
|  | 2 01 133 | Change data width | Add 5 to width |
|  | 0 05 041 | Scan line number |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 01 132 | Change data width | Add 4 to width |
|  | 0 25 070 | Major frame count |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 02 126 | Change scale | Subtract 2 from scale |
|  | 0 07 001 | Height of station |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 1 03 003 | Replicate 3 descriptors 3 times |  |
|  | 0 25 140 | Start channel |  |
|  | 0 25 141 | End channel |  |
|  | 0 33 060 | GqisFlagQual – individual IASI-System quality flag |  |
|  | 0 33 061 | GqisQualIndex – indicator for instrument noise performance (contributions from spectral and radiometric calibration) |  |
|  | 0 33 062 | GqisQualIndexLoc – indicator for geometric quality index |  |
|  | 0 33 063 | GqisQualIndexRad – indicator for instrument noise performance (contributions from radiometric calibration) |  |
|  | 0 33 064 | GqisQualIndexSpect – indicator for instrument noise performance (contributions from spectral calibration) |  |
|  | 0 33 065 | GqisSysTecSondQual – output of system TEC (Technical Expertise Centre) quality function |  |
|  | 0 40 020 | GqisFlagQualDetailed – quality flag for the system |  |
|  | 1 01 010 | Replicate 1 descriptor 10 times |  |

*(continued)*

*(Category 40 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 007 | 3 40 002 | Band description |  |
| *(continued)* | 1 01 087 | Replicate 1 descriptor 87 times |  |
|  | 3 40 003 | IASI Level 1c 100 channels |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 25 051 | AVHRR channel combination |  |
|  | 1 01 007 | Replicate 1 descriptor 7 times |  |
|  | 3 40 004 | IASI Level 1c AVHRR single scene |  |
|  | 0 20 081 | Cloud amount in segment |  |
|  | 0 08 029 | Surface type |  |
|  | 0 20 083 | Amount of segment covered by scene |  |
|  | 0 08 029 | Surface type |  |
|  | 0 40 018 | GIacAvgImagIIS – average of imager measurements |  |
|  | 0 40 019 | GIacVarImagIIS – variance of imager measurements |  |
|  | 0 40 021 | Fraction of weighted AVHRR pixel in IASI FOV covered with snow/ice |  |
|  | 0 40 022 | Number of missing, bad or failed AVHRR pixels |  |
|  |  |  |  |
|  |  | (IASI sequence combining PC scores, channel selection and enhanced data) |  |
|  |  | *Satellite processing information* |  |
| 3 40 008 | 0 01 007 | Satellite identifier |  |
|  | 0 01 031 | Identification of originating/generating centre |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 02 020 | Satellite classification |  |
|  |  | *Date and time* |  |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 2 02 131 | Change scale | Add 3 to scale |
|  | 2 01 138 | Change data width | Add 10 to width |
|  | 0 04 006 | Second |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 02 000 | Change scale | Cancel |
|  |  | *Location information* |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 025 | Solar zenith angle |  |
|  | 0 05 022 | Solar azimuth |  |
|  | 0 05 043 | Field of view number |  |
|  | 0 05 040 | Orbit number |  |
|  | 2 01 133 | Change data width | Add 5 to width |
|  | 0 05 041 | Scan line number |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 2 01 132 | Change data width | Add 4 to width |
|  | 0 25 070 | Major frame count |  |

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*(Category 40 – continued)*

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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 008 | 2 01 000 | Change data width | Cancel |
| *(continued)* | 2 02 126 | Change scale | Subtract 2 from scale |
|  | 0 07 001 | Height of station |  |
|  | 2 02 000 | Change scale | Cancel |
|  |  | *Quality information* |  |
|  | 1 03 003 | Replicate 3 descriptors 3 times |  |
|  | 0 25 140 | Start channel |  |
|  | 0 25 141 | End channel |  |
|  | 0 33 060 | GqisFlagQual – individual IASI-System quality flag |  |
|  | 0 33 061 | GqisQualIndex – indicator for instrument noise performance (contributions from spectral and radiometric calibration) |  |
|  | 0 33 062 | GqisQualIndexLoc – indicator for geometric quality index |  |
|  | 0 33 063 | GqisQualIndexRad – indicator for instrument noise performance (contributions from radiometric calibration) |  |
|  | 0 33 064 | GqisQualIndexSpect – indicator for instrument noise performance (contributions from spectral calibration) |  |
|  | 0 33 065 | GqisSysTecSondQual – output of system TEC (Technical Expertise Centre) quality function |  |
|  | 0 40 020 | GqisFlagQualDetailed – quality flag for the system |  |
|  |  | *IASI subset of channels* |  |
|  | 1 01 010 | Replicate 1 descriptor 10 times |  |
|  | 3 40 002 | Band description |  |
|  | 1 04 000 | Delayed replication of 4 descriptors |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 2 01 136 | Change data width | Add 8 to width |
|  | 0 05 042 | Channel number |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 14 046 | Scaled radiance |  |
|  |  | *Instrument band definition* |  |
|  | 1 08 003 | Replicate 8 descriptors 3 times |  |
|  | 0 25 140 | Start channel |  |
|  | 0 25 141 | End channel |  |
|  | 0 40 026 | Score quantization factor |  |
|  | 0 40 016 | Residual RMS in band |  |
|  | 0 25 062 | Database identification |  |
|  |  | *Principal component scores for band* |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 0 40 017 | Non-normalized principal component score |  |
|  |  | *AVHRR scene analysis* |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 25 051 | AVHRR channel combination |  |
|  | 1 01 007 | Replicate 1 descriptor 7 times |  |
|  | 3 40 004 | IASI Level 1c AVHRR single scene |  |
|  | 0 20 081 | Cloud amount in segment |  |
|  | 0 08 029 | Surface type |  |

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*(Category 40 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 008 | 0 20 083 | Amount of segment covered by scene |  |
| *(continued)* | 0 08 029 | Surface type |  |
|  | 0 40 018 | GIacAvgImagIIS – average of imager measurements |  |
|  | 0 40 019 | GIacVarImagIIS – variance of imager measurements |  |
|  | 0 40 021 | Fraction of weighted AVHRR pixel in IASI FOV covered with snow/ice |  |
|  | 0 40 022 | Number of missing, bad or failed AVHRR pixels |  |
|  |  |  |  |
|  |  | (Normalized differential vegetation index (NDVI)) |  |
| 3 40 009 | 0 01 007 | Satellite identifier |  |
|  | 0 01 031 | Identification of originating/generating centre |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 02 020 | Satellite classification |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 0 05 040 | Orbit number |  |
|  | 2 01 136 | Change data width | Add 8 to width |
|  | 0 05 041 | Scan line number |  |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 25 071 | Frame count |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 1 07 064 | Replicate 7 descriptors 64 times |  |
|  | 1 06 032 | Replicate 6 descriptors 32 times |  |
|  | 0 08 012 | Land/sea qualifier |  |
|  | 0 08 013 | Day/night qualifier |  |
|  | 0 08 065 | Sun-glint indicator |  |
|  | 0 08 072 | Pixel(s) type |  |
|  | 0 13 039 | Terrain type (ice/snow) |  |
|  | 0 40 015 | Normalized differential vegetation index (NDVI) |  |
|  |  |  |  |
|  |  | (JASON-2 OGDR data) |  |
|  |  | *Satellite* |  |
| 3 40 010 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 01 096 | Station acquisition |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 05 044 | Satellite cycle number |  |
|  | 0 05 040 | Orbit number |  |
|  | 0 01 030 | Numerical model identifier |  |
|  |  | *Datation* |  |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 04 007 | Seconds within a minute (microsecond accuracy) |  |

*(continued)*

*(Category 40 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 010 |  | *Location and surface type* |  |
| *(continued)* | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 08 029 | Surface type |  |
|  | 0 08 074 | Altimeter echo type |  |
|  | 0 08 077 | Radiometer sensed surface type |  |
|  |  | *Flags* |  |
|  | 0 40 011 | Interpolation flag |  |
|  | 0 25 097 | Three-dimensional error estimate of the navigator orbit |  |
|  | 0 25 095 | Altimeter state flag |  |
|  | 0 25 098 | Altimeter data quality flag |  |
|  | 0 25 099 | Altimeter correction quality flag |  |
|  | 0 21 144 | Altimeter rain flag |  |
|  | 0 25 096 | Radiometer state flag |  |
|  | 0 40 012 | Radiometer data quality flag |  |
|  | 0 40 013 | Radiometer brightness temperature interpretation flag |  |
|  | 0 21 169 | Ice presence indicator |  |
|  | 0 40 023 | Auxiliary altimeter state flags |  |
|  | 0 40 024 | Meteorological map availability |  |
|  | 0 40 025 | Interpolation flag for mean diurnal tide |  |
|  |  | *Altimeter: Ku band* |  |
|  | 0 22 151 | Ku band ocean range |  |
|  | 0 22 162 | RMS of 20 Hz Ku band ocean range |  |
|  | 0 22 163 | Number of 20 Hz valid points for Ku band |  |
|  | 0 25 160 | Ku band net instrumental correction |  |
|  | 0 25 133 | Sea state bias correction on Ku band |  |
|  | 0 22 156 | Ku band significant wave height |  |
|  | 0 22 164 | RMS 20 Hz Ku band significant wave height |  |
|  | 0 22 165 | Number of 20 Hz valid points for Ku band significant wave height |  |
|  | 0 22 166 | Ku band net instrumental correction for significant wave height |  |
|  | 0 21 137 | Ku band corrected ocean backscatter coefficient |  |
|  | 0 21 138 | STD Ku band corrected ocean backscatter coefficient |  |
|  | 0 22 167 | Number of valid points for Ku band backscatter |  |
|  | 0 21 139 | Ku band net instrumental correction for AGC |  |
|  | 0 21 118 | Attenuation correction on sigma-0 |  |
|  | 0 21 145 | Ku band automatic gain control |  |
|  | 0 21 146 | RMS Ku band automatic gain control |  |
|  | 0 21 147 | Number of valid points for Ku band automatic gain control |  |
|  |  | *Altimeter: C band* |  |
|  | 0 22 168 | C band ocean range |  |
|  | 0 22 169 | RMS of C band ocean range |  |
|  | 0 22 170 | Number of 20 Hz valid points for C band |  |
|  | 0 25 161 | C band net instrumental correction |  |
|  | 0 25 162 | Sea state bias correction on C band |  |
|  | 0 22 171 | C band significant wave height |  |
|  | 0 22 172 | RMS 20 Hz C band significant wave height |  |

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*(Category 40 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 010 *(continued)* | 0 22 173 | Number of 20 Hz valid points for C band significant wave height |  |
|  | 0 22 174 | C band net instrumental correction for significant wave height |  |
|  | 0 21 170 | C band corrected ocean backscatter coefficient |  |
|  | 0 21 171 | RMS C band corrected ocean backscatter coefficient |  |
|  | 0 22 175 | Number of valid points for C band backscatter |  |
|  | 0 21 172 | C band net instrumental correction for AGC |  |
|  | 0 21 118 | Attenuation correction on sigma-0 |  |
|  | 0 21 173 | C band automatic gain control |  |
|  | 0 21 174 | RMS C band automatic gain control |  |
|  | 0 21 175 | Number of valid points for C band automatic gain control |  |
|  |  | *Radiometer* |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 13 090 | Radiometer water vapour content |  |
|  | 0 13 091 | Radiometer liquid content |  |
|  |  | *Wind* |  |
|  | 0 07 002 | Height or altitude |  |
|  | 0 11 097 | Wind speed from altimeter |  |
|  | 0 11 098 | Wind speed from radiometer |  |
|  | 0 07 002 | Height or altitude |  |
|  | 0 11 095 | u-component of the model wind vector |  |
|  | 0 11 096 | v-component of the model wind vector |  |
|  |  | *Dynamic topography* |  |
|  | 0 10 096 | Mean dynamic topography |  |
|  | 0 10 081 | Altitude of COG above reference ellipsoid |  |
|  | 0 10 082 | Instantaneous altitude rate |  |
|  | 0 10 083 | Squared off nadir angle of the satellite from platform data |  |
|  | 0 10 101 | Squared off nadir angle of the satellite from waveform data |  |
|  | 0 25 132 | Ionospheric correction from model on Ku band |  |
|  | 0 25 163 | Altimeter ionospheric correction on Ku band |  |
|  | 0 25 126 | Model dry tropospheric correction |  |
|  | 0 25 128 | Model wet tropospheric correction |  |
|  | 0 25 164 | Radiometer wet tropospheric correction |  |
|  | 0 10 085 | Mean sea-surface height |  |
|  | 0 10 097 | Mean sea-surface height from altimeter only |  |
|  | 0 10 086 | Geoid’s height |  |
|  | 0 10 087 | Ocean depth/land elevation |  |
|  | 0 10 092 | Solid Earth tide height |  |
|  | 0 10 088 | Total geocentric ocean tide height (solution 1) |  |
|  | 0 10 089 | Total geocentric ocean tide height (solution 2) |  |

*(continued)*

*(Category 40 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 010 | 0 10 098 | Loading tide height geocentric ocean tide solution 1 |  |
| *(continued)* | 0 10 099 | Loading tide height geocentric ocean tide solution 2 |  |
|  | 0 10 090 | Long period tide height |  |
|  | 0 10 100 | Non-equilibrium long period tide height |  |
|  | 0 10 093 | Geocentric pole tide height |  |
|  | 0 25 127 | Inverted barometer correction | Sea-surface height correction due to pressure loading |
|  | 0 40 014 | High-frequency fluctuations of the sea-surface topography correction |  |
|  | 0 10 102 | Sea-surface height anomaly |  |
|  |  |  |  |
|  |  | (SARAL Altika) |  |
| 3 40 011 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 01 096 | Station acquisition |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 05 044 | Satellite cycle number |  |
|  | 0 05 040 | Orbit number |  |
|  | 0 01 030 | Numerical model identifier |  |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 04 007 | Seconds within a minute (microsecond accuracy) |  |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 08 029 | Surface type |  |
|  | 0 08 077 | Radiometer sensed surface type |  |
|  | 0 40 011 | Interpolation flag |  |
|  | 0 25 097 | Three-dimensional error estimate of the navigator orbit |  |
|  | 0 25 112 | Band specific altimeter data quality flag |  |
|  | 0 25 113 | Band specific altimeter correction quality flag |  |
|  | 0 21 148 | Trailing edge variation flag |  |
|  | 0 21 169 | Ice presence indicator |  |
|  | 0 40 024 | Meteorological map availability |  |
|  | 0 40 025 | Interpolation flag for mean diurnal tide |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 22 189 | Specific band ocean range |  |
|  | 0 22 191 | RMS of specific band ocean range |  |
|  | 0 22 130 | Number of valid points for specific band |  |
|  | 0 25 167 | Specific band net instrumental correction |  |
|  | 0 25 166 | Sea state bias correction on specific band |  |
|  | 0 22 190 | Specific band significant wave height |  |
|  | 0 22 131 | RMS specific band significant wave height |  |
|  | 0 22 132 | Number of valid points for specific band significant wave height |  |

*(continued)*

*(Category 40 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 011 *(continued)* | 0 22 133 | Specific band net instrument correction for significant wave height |  |
|  | 0 21 183 | Specific band corrected ocean backscatter coefficient |  |
|  | 0 21 184 | STD specific band corrected ocean backscatter coefficient |  |
|  | 0 22 134 | Number of valid points for specific band backscatter |  |
|  | 0 21 185 | Specific band net instrumental correction for AGC |  |
|  | 0 21 118 | Attenuation correction on sigma-0 |  |
|  | 0 21 186 | Specific band automatic gain control |  |
|  | 0 21 187 | RMS specific band automatic gain control |  |
|  | 0 21 188 | Number of valid points for specific band automatic gain control |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 13 090 | Radiometer water vapour content |  |
|  | 0 13 160 | Radiometer liquid content |  |
|  | 0 07 002 | Height or altitude |  |
|  | 0 11 097 | Wind speed from altimeter |  |
|  | 0 07 002 | Height or altitude |  |
|  | 0 11 095 | u-component of the model wind vector |  |
|  | 0 11 096 | v-component of the model wind vector |  |
|  | 0 10 096 | Mean dynamic topography |  |
|  | 0 10 081 | Altitude of COG above reference ellipsoid |  |
|  | 0 10 082 | Instantaneous altitude rate |  |
|  | 0 10 083 | Squared off-nadir angle of the satellite from platform data |  |
|  | 0 10 101 | Squared off-nadir angle of the satellite from waveform data |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 25 165 | Ionospheric correction from model on specific band |  |
|  | 0 25 126 | Model dry tropospheric correction |  |
|  | 0 25 128 | Model wet tropospheric correction |  |
|  | 0 25 164 | Radiometer wet tropospheric correction |  |
|  | 0 10 085 | Mean sea-surface height |  |
|  | 0 10 086 | Geoid's height |  |
|  | 0 10 087 | Ocean depth/land elevation |  |
|  | 0 10 092 | Solid Earth tide height |  |
|  | 0 10 088 | Total geocentric ocean tide height (solution 1) |  |
|  | 0 10 089 | Total geocentric ocean tide height (solution 2) |  |
|  | 0 10 098 | Loading tide height geocentric ocean tide solution 1 |  |
|  | 0 10 099 | Loading tide height geocentric ocean tide solution 2 |  |
|  | 0 10 090 | Long period tide height |  |
|  | 0 10 100 | Non-equilibrium long period tide height |  |
|  | 0 10 093 | Geocentric pole tide height |  |
|  | 0 25 127 | Inverted barometer correction |  |
|  | 0 40 014 | High-frequency fluctuations of the sea-surface topography correction |  |
|  | 0 10 102 | Sea-surface height anomaly |  |

*(continued)*

*(Category 40 – continued)*

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| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  | (GPM Microwave Imager (GMI)) |  |
| 3 40 012 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 08 091 | Coordinates significance | = 0 Satellite coordinates |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 07 002 | Height or altitude |  |
|  | 0 05 063 | Spacecraft roll |  |
|  | 0 05 064 | Spacecraft pitch |  |
|  | 0 05 066 | Spacecraft yaw |  |
|  | 0 05 041 | Scan line number |  |
|  | 0 05 067 | Number of scan lines |  |
|  | 3 01 011 | Year, moth, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 0 04 007 | Seconds within a minute (microsecond accuracy) |  |
|  | 0 08 091 | Coordinates significance | = 1 Observation coordinates |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 1 07 000 | Delayed replication of 7 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 05 042 | Channel number |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 02 104 | Antenna polarization |  |
|  | 0 40 028 | GMI quality flag |  |
|  | 0 07 024 | Satellite zenith angle |  |
|  | 0 40 027 | Sun glint angle |  |
|  | 0 12 063 | Brightness temperature |  |
|  |  |  |  |
|  |  | (Atmospheric Laser Doppler Instrument (ALADIN) L2b data) |  |
| 3 40 013 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 0 01 033 | Identification of originating/generating centre |  |
|  | 0 01 034 | Identification of originating/generating sub-centre |  |
|  | 0 04 001 | Year |  |
|  | 0 04 002 | Month |  |
|  | 0 04 003 | Day |  |
|  | 0 04 004 | Hour |  |
|  | 0 04 005 | Minute |  |
|  | 0 04 007 | Seconds within a minute (microsecond accuracy) |  |
|  | 0 05 068 | Profile number |  |
|  | 0 05 070 | Observation identifier |  |
|  | 0 05 069 | Receiver channel |  |
|  | 0 40 036 | Lidar L2b classification type |  |
|  | 0 08 091 | Coordinates significance | = 2 Start of observation |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |

*(continued)*

*(Category 40 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 013 | 0 04 016 | Time increment |  |
| *(continued)* | 0 08 091 | Coordinates significance | = 3 End of observation |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 04 016 | Time increment |  |
|  | 0 08 091 | Coordinates significance | = 4 Horizontal centre of gravity of observation |
|  | 0 05 001 | Latitude (high accuracy) |  |
|  | 0 06 001 | Longitude (high accuracy) |  |
|  | 0 04 016 | Time increment |  |
|  | 0 08 091 | Coordinates significance | = 6 Top of observation |
|  | 0 07 071 | Height (high resolution) |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 021 | Elevation |  |
|  | 0 40 035 | Satellite range |  |
|  | 0 08 091 | Coordinates significance | = 7 Bottom of observation |
|  | 0 07 071 | Height (high resolution) |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 021 | Elevation |  |
|  | 0 40 035 | Satellite range |  |
|  | 0 08 091 | Coordinates significance | = 5 Vertical centre of gravity of observation |
|  | 0 07 071 | Height (high resolution) |  |
|  | 0 05 021 | Bearing or azimuth |  |
|  | 0 07 021 | Elevation |  |
|  | 0 40 035 | Satellite range |  |
|  | 0 40 029 | Horizontal observation integration length |  |
|  | 0 40 030 | Horizontal line of sight wind |  |
|  | 0 40 031 | Error estimate of horizontal line of sight wind |  |
|  | 0 25 187 | Confidence flag |  |
|  | 0 10 004 | Pressure |  |
|  | 0 12 001 | Temperature/air temperature |  |
|  | 0 40 037 | Backscatter ratio |  |
|  | 0 40 032 | Derivative wind to pressure |  |
|  | 0 40 033 | Derivative wind to temperature |  |
|  | 0 40 034 | Derivative wind to backscatter ratio |  |
|  |  |  |  |
|  |  | (Global Precipitation Measurement (GPM) precipitation data) |  |
| 3 40 015 | 0 01 007 | Satellite identifier |  |
|  | 0 02 019 | Satellite instruments |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 012 | Hour, minute |  |
|  | 0 04 007 | Seconds within a minute (microsecond accuracy) |  |
|  | 2 01 133 | Change data width | Increase bit width |
|  | 0 05 041 | Scan line number |  |

*(continued)*

*(Category 40 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 015 *(continued)* | 2 01 000 | Change data width | Cancel increase bit width |
|  | 2 01 130 | Change data width | Increase bit width |
|  | 0 05 043 | Field of view number |  |
|  | 2 01 000 | Change data width | Cancel increase bit width |
|  | 2 07 001 | Increase scale, reference value and data width |  |
|  | 0 05 002 | Latitude (coarse accuracy) |  |
|  | 0 06 002 | Longitude (coarse accuracy) |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 40 027 | Sun glint angle |  |
|  | 0 13 040 | Surface flag |  |
|  | 0 21 120 | Probability of rain |  |
|  | 2 07 003 | Increase scale, reference value and data width |  |
|  | 1 02 003 | Replicate 2 descriptors 3 times |  |
|  | 0 02 186 | Capability to detect precipitation phenomena  Set bit 1 = unknown/unspecified (total precipitation) in the first replication, Set bit 6 = solid precipitation in the second replication, Set bit 24 = convective precipitation in the third replication | /see left column |
|  | 0 13 155 | Intensity of precipitation (high accuracy) |  |
|  | 2 07 000 | Increase scale, reference value and data width | Cancel |
|  | 0 33 003 | Quality information |  |
|  |  |  |  |
|  |  | (Principal component scores, channel selection and enhanced data collected on board a geostationary platform) |  |
| 3 40 016 | 3 01 129 | Observing satellite and instruments |  |
|  | 3 01 130 | High precision timestamp |  |
|  | 3 01 131 | Pixel geolocation |  |
|  | 2 02 134 | Change scale | Add 6 to scale |
|  | 0 07 001 | Height of station |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 1 01 000 | Delayed replicator of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 40 002 | Band description |  |
|  | 1 01 000 | Delayed replication of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 04 039 | Radiance in channel |  |
|  | 1 01 000 | Delayed replicator of 1 descriptor |  |
|  | 0 31 002 | Extended delayed descriptor replication factor |  |
|  | 3 04 040 | Principal component score in band |  |
|  |  |  |  |
|  |  | (Sentinel-3 (S3) Level 2 Water Product) |  |
| 3 40 017 | 0 01 007 | Satellite identifier | = 61 Sentinel 3A or = 65 Sentinel 3B |
|  | 0 02 019 | Satellite instruments | 178 (SRAL) |
|  | 0 05 044 | Satellite cycle number |  |
|  | 0 01 096 | Station acquisition |  |

*(continued)*

*(Category 40 – continued)*

|  |  |  |  |
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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 017 | 0 05 040 | Orbit number |  |
| *(continued)* | 0 01 040 | Processing centre ID code |  |
|  | 0 25 061 | Software identification and version number |  |
|  | 0 25 182 | L1 processing flag |  |
|  | 0 25 183 | L1 processing quality |  |
|  | 0 25 181 | L2 processing flag |  |
|  | 0 25 184 | L2 product status |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 0 04 007 | Seconds within a minute (microsecond accuracy) |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 05 063 | Spacecraft roll |  |
|  | 0 05 064 | Spacecraft pitch |  |
|  | 0 05 066 | Spacecraft yaw |  |
|  | 0 10 081 | Altitude of COG above reference ellipsoid |  |
|  | 0 10 082 | Instantaneous altitude rate |  |
|  | 0 08 075 | Ascending/descending orbit qualifier |  |
|  | 0 25 090 | Orbit state flag |  |
|  | 0 08 029 | Surface type |  |
|  | 2 01 137 | Change data width | Increase data width by 9 bits |
|  | 2 02 129 | Change scale | Add 1 to scale |
|  | 0 06 021 | Distance |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 10 087 | Ocean depth/land elevation |  |
|  | 0 25 096 | Radiometer state flag |  |
|  | 0 40 012 | Radiometer data quality flag |  |
|  | 0 08 077 | Radiometer sensed surface type |  |
|  | 1 04 002 | Replicate 4 descriptors 2 times |  |
|  | 0 02 153 | Satellite channel centre frequency |  |
|  | 0 12 063 | Brightness temperature |  |
|  | 0 12 065 | Standard deviation brightness temperature |  |
|  | 0 40 013 | Radiometer brightness temperature interpretation flag |  |
|  | 0 07 002 | Height or altitude |  |
|  | 0 11 098 | Wind speed from radiometer |  |
|  | 0 13 090 | Radiometer water vapour content |  |
|  | 0 13 091 | Radiometer liquid content |  |
|  | 0 25 164 | Radiometer wet tropospheric correction |  |
|  | 0 25 095 | Altimeter state flag |  |
|  | 0 40 023 | Auxiliary altimeter state flags |  |
|  | 0 25 113 | Band specific altimeter correction quality flag |  |
|  | 0 08 074 | Altimeter echo type |  |
|  | 0 25 190 | Altimeter echo processing mode |  |
|  | 0 21 144 | Altimeter rain flag |  |
|  | 0 25 191 | Altimeter tracking mode |  |
|  | 0 21 143 | Ku band rain attenuation |  |

*(continued)*

*(Category 40 – continued)*

|  |  |  |  |
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| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 017 | 0 13 055 | Intensity of precipitation |  |
| *(continued)* | 0 21 169 | Ice presence indicator |  |
|  | 0 10 101 | Squared off-nadir angle of the satellite from waveform data |  |
|  | 0 15 012 | Total electron count per square metre |  |
|  | 0 07 002 | Height or altitude |  |
|  | 0 11 097 | Wind speed from altimeter |  |
|  | 0 40 024 | Meteorological map availability |  |
|  | 0 07 002 | Height or altitude |  |
|  | 0 25 126 | Model dry tropospheric correction |  |
|  | 0 25 128 | Model wet tropospheric correction |  |
|  | 0 40 011 | Interpolation flag |  |
|  | 0 07 002 | Height or altitude |  |
|  | 0 11 095 | u-component of the model wind vector |  |
|  | 0 11 096 | v-component of the model wind vector |  |
|  | 0 10 088 | Total geocentric ocean tide height (solution 1) |  |
|  | 0 10 089 | Total geocentric ocean tide height (solution 2) |  |
|  | 0 10 090 | Long period tide height |  |
|  | 0 10 092 | Solid Earth tide height |  |
|  | 0 10 093 | Geocentric pole tide height |  |
|  | 0 10 098 | Loading tide height geocentric ocean tide solution 1 |  |
|  | 0 10 099 | Loading tide height geocentric ocean tide solution 2 |  |
|  | 0 10 100 | Non-equilibrium long period tide height |  |
|  | 0 25 127 | Inverted barometer correction |  |
|  | 0 40 014 | High-frequency fluctuations of the sea-surface topography correction |  |
|  | 0 10 085 | Mean sea-surface height |  |
|  | 0 10 086 | Geoid's height |  |
|  | 0 10 096 | Mean dynamic topography |  |
|  | 0 10 103 | Mean dynamic topography accuracy |  |
|  | 0 10 102 | Sea-surface height anomaly |  |
|  | 0 22 080 | Waveband central frequency |  |
|  | 0 08 076 | Type of band |  |
|  | 0 22 189 | Specific band ocean range |  |
|  | 0 22 191 | RMS of specific band ocean range |  |
|  | 0 22 130 | Number of valid points for specific band |  |
|  | 0 25 165 | Ionospheric correction from model on specific band |  |
|  | 0 25 166 | Sea state bias correction on specific band |  |
|  | 0 25 167 | Specific band net instrumental correction |  |
|  | 0 21 183 | Specific band corrected ocean backscatter coefficient |  |
|  | 0 21 184 | STD specific band corrected ocean backscatter coefficient |  |
|  | 0 22 134 | Number of valid points for specific band backscatter |  |
|  | 0 21 122 | Attenuation correction on sigma-0 (from tB) |  |
|  | 0 22 190 | Specific band significant wave height |  |
|  | 0 22 131 | RMS specific band significant wave height |  |

*(continued)*

*(Category 40 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 017 *(continued)* | 0 22 132 | Number of valid points for specific band significant wave height |  |
|  | 0 22 133 | Specific band net instrument correction for significant wave height |  |
|  | 0 21 186 | Specific band automatic gain control |  |
|  | 0 21 187 | RMS specific band automatic gain control |  |
|  | 0 21 188 | Number of valid points for specific band automatic gain control |  |
|  | 0 21 185 | Specific band net instrumental correction for AGC |  |
|  | 0 25 112 | Band specific altimeter data quality flag |  |
|  | 0 25 113 | Band specific altimeter correction quality flag |  |
|  | 0 33 092 | Band specific ocean quality flag |  |
|  | 0 08 076 | Type of band |  |
|  | 0 22 189 | Specific band ocean range |  |
|  | 0 22 191 | RMS of specific band ocean range |  |
|  | 0 22 130 | Number of valid points for specific band |  |
|  | 0 25 165 | Ionospheric correction from model on specific band |  |
|  | 0 25 166 | Sea state bias correction on specific band |  |
|  | 0 25 167 | Specific band net instrumental correction |  |
|  | 0 21 183 | Specific band corrected ocean backscatter coefficient |  |
|  | 0 21 184 | STD specific band corrected ocean backscatter coefficient |  |
|  | 0 22 134 | Number of valid points for specific band backscatter |  |
|  | 0 21 122 | Attenuation correction on sigma-0 (from tB) |  |
|  | 0 22 190 | Specific band significant wave height |  |
|  | 0 22 131 | RMS specific band significant wave height |  |
|  | 0 22 132 | Number of valid points for specific band significant wave height |  |
|  | 0 22 133 | Specific band net instrument correction for significant wave height |  |
|  | 0 21 186 | Specific band automatic gain control |  |
|  | 0 21 187 | RMS specific band automatic gain control |  |
|  | 0 21 188 | Number of valid points for specific band automatic gain control |  |
|  | 0 21 185 | Specific band net instrumental correction for AGC |  |
|  | 0 25 112 | Band specific altimeter data quality flag |  |
|  | 0 25 113 | Band specific altimeter correction quality flag |  |
|  | 0 33 092 | Band specific ocean quality flag |  |
|  | 0 25 190 | Altimeter echo processing mode |  |
|  | 0 11 097 | Wind speed from altimeter |  |
|  | 0 13 090 | Radiometer water vapour content |  |
|  | 0 13 091 | Radiometer liquid content |  |
|  | 0 21 143 | Ku band rain attenuation |  |
|  | 0 21 184 | STD specific band corrected ocean backscatter coefficient |  |
|  | 0 25 128 | Model wet tropospheric correction |  |
|  | 0 25 163 | Altimeter ionospheric correction on Ku band |  |
|  | 0 25 164 | Radiometer wet tropospheric correction |  |
|  | 0 10 102 | Sea-surface height anomaly |  |

*(continued)*

*(Category 40 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 017 | 0 22 189 | Specific band ocean range |  |
| *(continued)* | 0 22 191 | RMS of specific band ocean range |  |
|  | 0 22 130 | Number of valid points for specific band |  |
|  | 0 25 166 | Sea state bias correction on specific band |  |
|  | 0 21 183 | Specific band corrected ocean backscatter coefficient |  |
|  | 0 21 184 | STD specific band corrected ocean backscatter coefficient |  |
|  | 0 22 134 | Number of valid points for specific band backscatter |  |
|  | 0 22 190 | Specific band significant wave height |  |
|  | 0 22 131 | RMS specific band significant wave height |  |
|  | 0 22 132 | Number of valid points for specific band significant wave height |  |
|  | 0 25 112 | Band specific altimeter data quality flag |  |
|  | 0 25 113 | Band specific altimeter correction quality flag |  |
|  | 0 33 092 | Band specific ocean quality flag |  |
|  | 0 08 049 | Number of observations |  |
|  | 0 22 080 | Waveband central frequency |  |
|  | 1 34 021 | Replicate 34 descriptors 21 times |  |
|  | 3 01 011 | Year, month, day |  |
|  | 3 01 013 | Hour, minute, second |  |
|  | 0 04 007 | Seconds within a minute (microsecond accuracy) |  |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 10 081 | Altitude of COG above reference ellipsoid |  |
|  | 0 10 082 | Instantaneous altitude rate |  |
|  | 0 08 029 | Surface type |  |
|  | 2 01 137 | Change data width | Add 9 bits to data width |
|  | 2 02 129 | Change scale | Add 1 to scale |
|  | 0 06 021 | Distance |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 2 01 000 | Change data width | Cancel |
|  | 0 25 191 | Altimeter tracking mode |  |
|  | 0 21 071 | Peakiness |  |
|  | 0 10 085 | Mean sea-surface height |  |
|  | 0 40 011 | Interpolation flag |  |
|  | 0 10 102 | Sea-surface height anomaly |  |
|  | 0 22 189 | Specific band ocean range |  |
|  | 0 22 146 | OCOG range |  |
|  | 0 25 165 | Ionospheric correction from model on specific band |  |
|  | 0 25 167 | Specific band net instrumental correction |  |
|  | 0 21 183 | Specific band corrected ocean backscatter coefficient |  |
|  | 0 22 190 | Specific band significant wave height |  |
|  | 0 22 133 | Specific band net instrument correction for significant wave height |  |
|  | 0 21 177 | Corrected OCOG backscatter coefficient |  |
|  | 0 21 185 | Specific band net instrumental correction for AGC |  |
|  | 0 13 164 | Sea-ice freeboard |  |

*(continued)*

*(Category 40 – continued)*

|  |  |  |  |
| --- | --- | --- | --- |
| TABLE  REFERENCE | TABLE  REFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
| 3 40 017 *(continued)* | 2 02 126 | Change scale | Subtract 2 bits from scale |
|  | 0 22 046 | Sea-ice fraction |  |
|  | 2 02 000 | Change scale | Cancel |
|  | 0 13 117 | Snow density (liquid water content) |  |
|  | 0 13 013 | Total snow depth |  |
|  | 0 25 112 | Band specific altimeter data quality flag |  |
|  | 0 33 092 | Band specific ocean quality flag |  |

Note: Descriptor 3 40 010 should be used in preference to 3 40 005.