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| WORLD METEOROLOGICAL ORGANIZATION  COMMISSION FOR BASIC SYSTEMS  -----------------------------  SECOND MEETING OF  INTER-PROGRAMME EXPERT TEAM ON DATA REPRESENTATION MAINTENANCE AND MONITORING  COLLEGE PARK, USA, 28 APRIL - 2 MAY 2014 |  | IPET-DRMM-II / Doc. 3.2 (5)  (10. 4. 2014)  -------------------------  ITEM 3.2  ENGLISH ONLY |

BUFR and CREX

**New BUFR template for SARAL Altika data**

*Submitted by Enrico Fucile (ECMWF), Simon Elliott (EUMETSAT)*

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**Summary and Purpose of Document**

A BUFR template is proposed for SARAL satellite and ALTIKA instrument.

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**ACTION PROPOSED**

The team is requested to accept the proposed BUFR template for validation

**DISCUSSIONS**

ECMWF is interested in processing data from the **SA**tellite with **AR**GOS and **AL**TIKA (SARAL) which is a joint Indo-French satellite mission for oceanographic studies. SARAL is performing altimetric measurements designed to study ocean circulation and sea surface elevation. The use of these satellite data is extremely important for the numerical models of the ocean circulation and waves. With the aim of assimilating ALTIKA data into its system ECMWF in collaboration with EUMETSAT have developed a new BUFR template fro SARAL ALTIKA data.

**PROPOSAL**

The following new BUFR template is proposed:

|  |  |  |
| --- | --- | --- |
| 340011 | SARAL ALTIKA | |
|  | 001007 | SATELLITE IDENTIFIER |
| 002019 | SATELLITE INSTRUMENTS |
| 001096 | STATION ACQUISITION |
| 025061 | SOFTWARE IDENTIFICATION AND VERSION NUMBER |
| 005044 | SATELLITE CYCLE NUMBER |
| 005040 | ORBIT NUMBER |
| 001030 | NUMERICAL MODEL IDENTIFIER |
| 004001 | YEAR |
| 004002 | MONTH |
| 004003 | DAY |
| 004004 | HOUR |
| 004005 | MINUTE |
| 004007 | SECONDS WITHIN A MINUTE (MICROSECOND ACCURACY) |
| 005001 | LATITUDE (HIGH ACCURACY) |
| 006001 | LONGITUDE (HIGH ACCURACY) |
| 008029 | SURFACE TYPE |
| 008077 | RADIOMETER SENSED SURFACE TYPE |
| 040011 | INTERPOLATION FLAG |
| 025097 | THREE-DIMENSIONAL ERROR ESTIMATE OF THE NAVIGATOR ORBIT |
| 025112 | BAND SPECIFIC ALTIMETER DATA QUALITY FLAG |
| 025113 | BAND SPECIFIC ALTIMETER CORRECTION QUALITY FLAG |
| 021148 | TRAILING EDGE VARIATION FLAG |
| 021169 | ICE PRESENCE INDICATOR |
| 040024 | METEOROLOGICAL MAP AVAILABILITY |
| 040025 | INTERPOLATION FLAG FOR MEAN DIURNAL TIDE |
| 002153 | SATELLITE CHANNEL CENTRE FREQUENCY |
| 022188 | SPECIFIC BAND OCEAN RANGE |
| 022190 | RMS OF SPECIFIC BAND OCEAN RANGE |
| 022191 | NUMBER OF VALID POINTS FOR SPECIFIC BAND |
| 025167 | SPECIFIC BAND NET INSTRUMENTAL CORRECTION |
| 025166 | SEA STATE BIAS CORRECTION ON SPECIFIC BAND |
| 022189 | SPECIFIC BAND SIGNIFICANT WAVE HEIGHT |
| 022192 | RMS SPECIFIC BAND SIGNIFICANT WAVE HEIGHT |
| 022193 | NUMBER OF VALID POINTS FOR SPECIFIC BAND SIGN. WAVE HEIGHT |
| 022194 | SPECIFIC BAND NET INSTR. CORRECTION FOR SIGNIFICANT WAVE HEIGHT |
| 021183 | SPECIFIC BAND CORRECTED OCEAN BACKSCATTER COEFFICIENT |
| 021184 | STD SPECIFIC BAND CORRECTED OCEAN BACKSCATTER COEFFICIENT |
| 022195 | NUMBER OF VALID POINTS FOR SPECIFIC BAND BACKSCATTER |
| 021185 | SPECIFIC BAND NET INSTRUMENTAL CORRECTION FOR AGC |
| 021118 | ATTENUATION CORRECTION ON SIGMA-0 |
| 021186 | SPECIFIC BAND AUTOMATIC GAIN CONTROL |
| 021187 | RMS SPECIFIC BAND AUTOMATIC GAIN CONTROL |
| 021188 | NUMBER OF VALID POINTS FOR SPECIFIC BAND AUTOMATIC GAIN CONTROL |
| 002153 | SATELLITE CHANNEL CENTRE FREQUENCY |
| 012063 | BRIGHTNESS TEMPERATURE |
| 002153 | SATELLITE CHANNEL CENTRE FREQUENCY |
| 012063 | BRIGHTNESS TEMPERATURE |
| 013090 | RADIOMETER WATER VAPOUR CONTENT |
| 013160 | RADIOMETER LIQUID CONTENT |
| 007002 | HEIGHT OR ALTITUDE |
| 011097 | WIND SPEED FROM ALTIMETER |
| 007002 | HEIGHT OR ALTITUDE |
| 011095 | U-COMPONENT OF THE MODEL WIND VECTOR |
| 011096 | V-COMPONENT OF THE MODEL WIND VECTOR |
| 010096 | MEAN DYNAMIC TOPOGRAPHY |
| 010081 | ALTITUDE OF COG ABOVE REFERENCE ELLIPSOID |
| 010082 | INSTANTANEOUS ALTITUDE RATE |
| 010083 | SQUARED OFF NADIR ANGLE OF THE SATELLITE FROM PLATFORM DATA |
| 010101 | SQUARED OFF NADIR ANGLE OF THE SATELLITE FROM WAVEFORM DATA |
| 002153 | SATELLITE CHANNEL CENTRE FREQUENCY |
| 025165 | IONOSPHERIC CORRECTION FROM MODEL ON SPECIFIC BAND |
| 025126 | MODEL DRY TROPOSPHERIC CORRECTION |
| 025128 | MODEL WET TROPOSPHERIC CORRECTION |
| 025164 | RADIOMETER WET TROPOSPHERIC CORRECTION |
| 010085 | MEAN SEA SURFACE HEIGHT |
| 010086 | GEOID'S HEIGHT |
| 010087 | OCEAN DEPTH/LAND ELEVATION |
| 010092 | SOLID EARTH TIDE HEIGHT |
| 010088 | TOTAL GEOCENTRIC OCEAN TIDE HEIGHT (SOLUTION 1) |
| 010089 | TOTAL GEOCENTRIC OCEAN TIDE HEIGHT (SOLUTION 2) |
| 010098 | LOADING TIDE HEIGHT GEOCENTRIC OCEAN TIDE SOLUTION 1 |
| 010099 | LOADING TIDE HEIGHT GEOCENTRIC OCEAN TIDE SOLUTION 2 |
| 010090 | LONG PERIOD TIDE HEIGHT |
| 010100 | NON-EQUILIBRIUM LONG PERIOD TIDE HEIGHT |
| 010093 | GEOCENTRIC POLE TIDE HEIGHT |
| 025127 | INVERTED BAROMETER CORRECTION |
| 040014 | HIGH-FREQUENCY FLUCTUATIONS OF THE SEA SURFACE TOPOGRAPHY CORREC |
| 010102 | SEA SURFACE HEIGHT ANOMALY |

The following new BUFR elements are proposed:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **F Y Z** | **Element Name** | **Units** | **Scale** | **Reference** | **Width** |
| 0 13 160 | RADIOMETER LIQUID CONTENT | KGM-2 | 2 | -350 | 10 |
| 0 21 148 | TRAILING EDGE VARIATION FLAG | FLAGTABLE | 0 | 0 | 2 |
| 0 21 183 | SPECIFIC BAND CORRECTED OCEAN BACKSCATTER COEFFICIENT | DB | 2 | -32768 | 16 |
| 0 21 184 | STD SPECIFIC BAND CORRECTED OCEAN BACKSCATTER COEFFICIENT | DB | 2 | -32768 | 16 |
| 0 21 185 | SPECIFIC BAND NET INSTRUMENTAL CORRECTION FOR AGC | DB | 2 | -2048 | 12 |
| 0 21 186 | SPECIFIC BAND AUTOMATIC GAIN CONTROL | DB | 2 | 0 | 13 |
| 0 21 187 | RMS SPECIFIC BAND AUTOMATIC GAIN CONTROL | DB | 2 | 0 | 8 |
| 0 21 188 | NUMBER OF VALID POINTS FOR SPECIFIC BAND AUTOMATIC GAIN CONTROL | NUMERIC | 0 | 0 | 7 |
| 0 22 188 | SPECIFIC BAND OCEAN RANGE | M | 3 | 0 | 31 |
| 0 22 189 | SPECIFIC BAND SIGNIFICANT WAVE HEIGHT | M | 3 | 0 | 16 |
| 0 22 190 | RMS OF SPECIFIC BAND OCEAN RANGE | M | 4 | 0 | 16 |
| 0 22 191 | NUMBER OF VALID POINTS FOR SPECIFIC BAND | NUMERIC | 0 | 0 | 10 |
| 0 22 192 | RMS SPECIFIC BAND SIGNIFICANT WAVE HEIGHT | M | 3 | 0 | 16 |
| 0 22 193 | NUMBER OF VALID POINTS FOR SPECIFIC BAND SIGN WAVE HEIGHT | NUMERIC | 0 | 0 | 10 |
| 0 22 194 | SPECIFIC BAND NET INSTRUMENT CORRECTION FRO SIGNIFICANT WAVE HEIGHT | M | 3 | -1000 | 11 |
| 0 22 195 | NUMBER OF VALID POINTS FOR SPECIFIC BAND BACKSCATTER | NUMERIC | 0 | 0 | 10 |
| 0 25 112 | BAND SPECIFIC ALTIMETER DATA QUALITY FLAG | FLAGTABLE | 0 | 0 | 9 |
| 0 25 113 | BAND SPECIFIC ALTIMETER CORRECTION QUALITY FLAG | FLAGTABLE | 0 | 0 | 9 |
| 0 25 165 | IONOSPHERIC CORRECTION FROM MODEL ON SPECIFIC BAND | M | 4 | -32768 | 16 |
| 0 25 166 | SEA STATE BIAS CORRECTION ON SPECIFIC BAND | M | 4 | -32768 | 16 |
| 0 25 167 | SPECIFIC BAND NET INSTRUMENTAL CORRECTION | M | 4 | -120000 | 18 |