

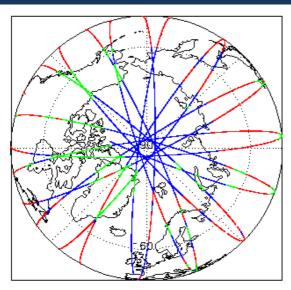
# 1. Overview

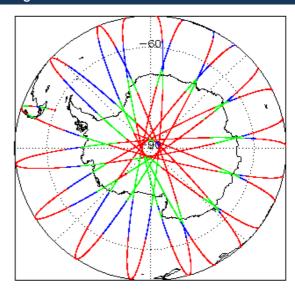
| Report Production: | 07-Jan-2022  |  |
|--------------------|--|--|
| Processor Used:    | CryoSat Ocean Processor  |  |
| Data Used:         | Geophysical Ocean Products (GOP)<br>L1B, L2 & P2P Science Data |  |

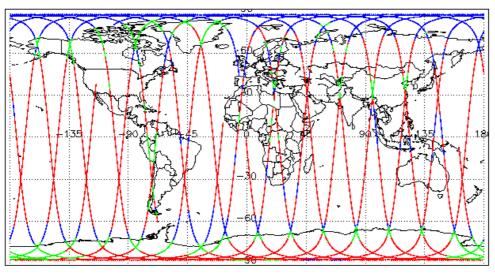
| Check                                      | L1 & L2                 | P2P                     |
|--|-------------------------|-------------------------|
| Server check: science-pds.cryosat.esa.int  | Nominal                 | Nominal                 |
| Server check: calval-pds.cryosat.esa.int   | Nominal                 | Nominal                 |
| Product Software Check                     | Nominal                 | Nominal                 |
| Product Format Check                       | Nominal                 | Nominal                 |
| Product Header Analysis                    | Nominal                 | Nominal                 |
| Auxiliary Data File Usage Check            | Nominal                 | Nominal                 |
| Auxiliary Correction Error Check           | See Section 5.4         | See Section 6.4         |
| Measurement Confidence Data Check          | See Section 4.5, 4.6    | Nominal                 |
| Range, SWH & Backscatter Measurement Check | See Section 5.6         | See Section 6.6         |
| Ocean Retracking Quality Check             | See Section 5.7         | See Section 6.7         |
| QCC Error/ Warning Check                   | See Section 7.1 and 7.2 | See Section 7.1 and 7.2 |

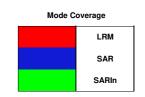
| Mission / Instru | ment News       |
|------------------|-----------------|
| 06-Dec-2021      | None            |
| 07-Dec-2021      | None            |
| 08-Dec-2021      | Nothing planned |

# 2. Global Coverage









# 3. Instrument Configuration

The SIRAL instrument configuration for the day of acquisition is provided below.

SIRAL instrument(s) in use: SIRAL - A

# 4. GOP Level 1B Data Quality Check

#### 4.1 L1B Product Format Check

Each product, retrieved and unpacked from the science server, is checked to ensure it consists of both an XML header file (.HDR) and a binary product file (.DBL).

#### 4.2 L1B Product Header Analysis

For all products, a series of pre-defined checks are performed on the MPH and SPH in order to identify any inconsistencies and/or errors raised by the ground-segment processing chain.

L1B Processing Quality HR: The I1b\_proc\_flag\_hr flag is currently set all L1B GOPR and GOPN products because the I1b\_processing\_quality\_hr field is not correctly configured in the OSAR and OSARIn chains. A modification is required in the next release.

Number of products with errors:

#### 4.3 L1B Auxilary Data File Usage Check

Each product is checked for missing Data Set Descriptors with respect to a pre-determined baseline and also to check the validity of Auxiliary Data Files is correct.

Number of products with errors:

0

#### 4.4 L1B Auxiliary Correction Error Check

CryoSat L1B data includes a correction error flag for each measurement record. The bit value of this flag indicates any problems when set.

Number of products with errors:

0

#### 4.5 L1B Measurement Confidence Data Check

CryoSat L1B data includes a measurement confidence flag for each measurement record. The bit value of this flag indicates any problems when set.

Attitude Correction Missing: This flag is currently set in error for GOPR products due to a configuration issue. This is being investigated and will be updated in the next SW update.

Number of products with errors:

0

#### 4.6 L1B Waveform Group Data Check

CryoSat L1B data includes a waveform data flag for each measurement record. The bit value of this flag indicates any problems when set.

Loss of Echo Flag: This flag is currently set for some products over land, but this is to be expected.

Number of products with errors:

17

| Product   | Test Failed  | Description  |
|---|--------------|--|
| CS_OFFL_SIR_GOPM1B_20211207T023157_20211207T023813_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPM1B_20211207T074801_20211207T075005_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPM1B_20211207T140712_20211207T142042_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPM1B_20211207T153621_20211207T154115_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20211207T025803_20211207T025911_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20211207T030012_20211207T030122_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20211207T043720_20211207T044313_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20211207T075934_20211207T080335_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20211207T092633_20211207T092737_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20211207T134334_20211207T134530_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20211207T015731_20211207T020223_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20211207T033933_20211207T034101_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20211207T061239_20211207T061735_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20211207T091717_20211207T091829_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20211207T110300_20211207T110918_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20211207T160808_20211207T161505_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20211207T202254_20211207T202619_C001 | Loss of Echo | The tracking echo is missing for one or more records |

# 5. GOP Level 2 Data Quality Check

#### 5.1 L2 Product Format Check

Each product, retrieved and unpacked from the science server, is checked to ensure it consists of both an XML header file (.HDR) and a binary product file (.DBL)

Number of products with errors:

0

#### 5.2 L2 Product Header Analysis

For all products, a series of pre-defined checks are performed on the MPH and SPH in order to identify any inconsistencies and/or errors raised by the ground-segment processing chain.

Number of products with errors:

### 5.3 L2 Auxiliary Data File Usage Check

Each product is checked for missing Data Set Descriptors with respect to a pre-determined baseline and also to check the validity of Auxiliary Data Files is correct.

Number of products with errors:

0

### 5.4 L2 Auxiliary Correction Error Check

For all products, the auxiliary corrections within the Geophysical Group are checked for the default error value (32767).

Currently, there are some common auxiliary correction errors raised in the Level 2 products that are expected, due to surface type. All common flags are summarised in the list below, followed by a table highlighting any additional issues that may arise from this test.

- > ECMWF Meteo Corrections: Currently the following corrections are not computed over CONTINENTAL ICE: Dry Tropospheric Correction, Wet Tropospheric Correction, Inverse Barometric Correction and the U-Wind and V-Wind components of the ECMWF model wind vector. This is a known anomaly (CRYO-COP-3) and will be resolved in a future IPF update. The affected products are not reported in the table below.
- > Sea State Bias & Sea State Bias PLRM: The error value is currently set for products over sea ice, but this is to be expected.
- > Altimetric Wind Speed Error: The error value is currently set for products over land and sea ice, but this is to be expected.

Number of products with errors:

| Product   | Test Failed                      | Description  |
|---|----------------------------------|--|
| CS_OFFL_SIR_GOPM_2_20211207T002607_20211207T002803_C001 | IGPD Wet Tropospheric Correction | There is an error with the GPD Wet Tropospheric correction for one or more records |

| CS_OFFL_SIR_GOPM_2_20211207T003516_20211207T004851_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
|---|---|--|
| CS_OFFL_SIR_GOPM_2_20211207T005012_20211207T005225_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T005706_20211207T010427_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T010429_20211207T010555_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T010902_20211207T010934_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T010939_20211207T010940_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T010943_20211207T011037_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T011040_20211207T011116_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T011120_20211207T011140_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T030802_20211207T032023_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T143647_20211207T143718_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T143720_20211207T143724_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T143727_20211207T143742_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T143746_20211207T144010_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T144013_20211207T144034_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T144036_20211207T144127_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T144130_20211207T144138_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T144140_20211207T144325_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T144637_20211207T145701_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T145841_20211207T151248_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T151528_20211207T152031_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T152037_20211207T152049_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPN_2_20211207T002332_20211207T002607_C001 | Mean Sea Surface (1), Mean Dynamic Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPN_2_20211207T002803_20211207T003340_C001 | GPD Wet Tropospheric Correction,<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1)                      | There is an error with the GPD Wet Tropospheric correction, the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records                            |
| CS_OFFL_SIR_GOPN_2_20211207T011304_20211207T011317_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPN_2_20211207T011855_20211207T012359_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T020223_20211207T020511_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T025803_20211207T025911_C001 | Mean Sea Surface (1), Mean Dynamic Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPN_2_20211207T033348_20211207T033531_C001 | Mean Dynamic Topography (1), Total<br>Geocentric Ocean Tide (FES), Non-<br>Equilibrium Long Period Ocean Tide | There is an error with the Mean Dynamic Topography height (solution 1), Total Geocentric Ocean Tide (solution 2: FES) and the Non-Equilibrium Long Period Ocean Tide for one or more records   |
| CS_OFFL_SIR_GOPN_2_20211207T034101_20211207T034314_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T043720_20211207T044313_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)                    | There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography height (solution 1) and the Total Geocentric Ocean Tide<br>height (solution 1: GOT) for one or more records |
| CS_OFFL_SIR_GOPN_2_20211207T053003_20211207T053230_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T065938_20211207T070117_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T075934_20211207T080335_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records  |

| CS_OFFL_SIR_COPN_2_2021207T19196_2221207T11919 COID  CS_OFFL_SIR_COPN_2_2021207T19196_2221207T11919 COID  CS_OFFL_SIR_COPN_2_2021207T120822_2221207T120825_COID  CS_OFFL_SIR_COPN_2_2021207T120822_2221207T120825_COID  CS_OFFL_SIR_COPN_2_2021207T120822_2221207T120825_COID  CS_OFFL_SIR_COPN_2_2021207T120822_2221207T130825_COID  CS_OFFL_SIR_COPN_2_2021207T120822_2221207T130825_COID  CS_OFFL_SIR_COPN_2_2021207T120822_2221207T130825_COID  CS_OFFL_SIR_COPN_2_2021207T130824_20211207T130825_COID  CS_OFFL_SIR_COPN_2_2021207T140825_20211207T130825_COID  CS_OFFL_SIR_COPN_2_2021207T130825_COID  CS_OFFL_SIR_COPN_2_2021207T140825_COID  CS_OFFL_SIR_COPN_2_2021207T190825_COID  CS_OFFL_SIR_COPN_2_2021207T190825_COID  CS_OFFL_SIR_COPN_2_2021207T190825_COID  CS_OFFL_SIR_COPN_2_2021207T190825_COID  CS_OFFL_SIR_COPN_2_2021207T120825_COID  CS_OFFL_SIR_COPN_2_2021207T120825_COID  CS_OFFL_SIR_COPN_2_2021207T120825_COID  CS_OFFL_SIR_COPN_2_2021207T120825_COID  CS_OFFL_SIR_COPN_2 |
|--|
| CS_OFF_SR_COPN_2_2021207110082_2021207110082_20211077110082_001  Also See Surface (1), Mean Dynamic Topography (1)  Topography (1)  The case are enve with the CSP shapilit doublen 1) and the Mean Dynamic Topography (1)  Topography (2)  Topography (2)  Topography (2)  Topography (2)  Topography (2)  Topography (3)  Topography (2)  Topography (3)  To |
| CS_OFFL_SIR_OOPN_2_202112071120362_202112071120362_0010  Mean Sas Surface (1), Mean Dynamic Topography (solution 1) for one or createds  There is an error with the MSS happit (solution 1) and the Mean Dynamic Topography (solution 1) for one or createds  CS_OFFL_SIR_OOPN_2_202112071120362_202112071120360_0010  Mean Sas Surface (1), Mean Dynamic Topography (solution 1) for one or created solution (solution 1) and the Mean Dynamic Topography (solution 1) and the Mean Dynamic Topography (solution 2) and the Mean Dynamic Topography (solution 3) and the Mean Dynamic Topography (solution 1) for one or created and the GPD Well Topographetic correction for one or more records  CS_OFFL_SIR_GOPN_2_200110071180362 202112071180365 C001  Mean Dynamic Topography (1) Topography (solution 1) for one or created and the GPD Well Topographic correction for one or created and the GPD Well Topographic correction for one or created and the Mean Dynamic Topography (solution 1) for one or created and the Mean Dynamic Topography (solution 1) for one or created and the Mean Dynamic Topography (solution 1) for one or created and the Mean Dynamic Topography (solution 1) for one or created and the Mean Dynamic Topography (solution 1) for one or created and the Mean Dynamic Topography (solution 1) for one or created and the Mean Dynami |
| Topography (1) Topography (2) Topography (2) Topography (2) Topography (3) Topography (3) Topography (4) Topogr |
| Topography (1) Topography (2) Topography (2) Topography (3) Topography (3) Topography (4) Topography (4) Topography (5) Topography (5) Topography (6) Topography (6) Topography (6) Topography (7) There is an error with the MSS height (potation 1) and the Mean Dynamic Topography (7) Topography (7) Topography (7) There is an error with the MSS height (potation 1) and the Mean Dynamic Topography (7) Topography (7) Topography (7) Total Control of the Contro |
| Topography (1) Topography (2) Topography (3) Topography (4) Topography (4) Topography (5) Topography (4) Topography (5) Topography (6) Topogr |
| OPD Wet Tropospheric Correction There is an error with the GPD Wet Tropospheric correction for one or more records  GP OFFL_SIR_GOPN_2_20211207T152049_20211207T162055_C001  GPD Wet Tropospheric Correction There is an error with the GPD Wet Tropospheric correction for one or more records  Mean Dynamic Topography (1). Total Geocentric Cocean Tide (GOT)  GP OFFL_SIR_GOPN_2_20211207T162059_20211207T165046_C001  Mean Dynamic Topography (1). Total Geocentric Cocean Tide (GOT)  Mean Dynamic Topography (1). Total Geocentric Cocean Tide (GOT)  GP OFFL_SIR_GOPN_2_20211207T16206_C001100000000000000000000000000000000   |
| CS. OFFL. SIR GOPN 2 20211207T162049 20211207T162055 C001  GPD Well Tropospheric Correction more records  Mean Dynamic Topography (1). Total concentric Cores in the (GOT) To one or more records  CS. OFFL. SIR GOPN 2 20211207T162055 20211207T165060 C001  Mean Dynamic Topography (1). Total Concentric Cores in the (GOT) To one or more records  CS. OFFL. SIR GOPN 2 20211207T170220 20211207T170503 C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  CS. OFFL. SIR GOPN 2 20211207T170220 20211207T174532 C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  CS. OFFL. SIR GOPN 2 20211207T174258 20211207T174532 C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  CS. OFFL SIR GOPN 2 20211207T191306 20211207T1933141 C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  CS. OFFL SIR GOPN 2 20211207T215319 20211207T215316 C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  CS. OFFL SIR GOPN 2 20211207723338 202112077233446 C001  Mean Sea Surface (1), Mean Dynamic Topography leig |
| CS_OFFL_SIR_GOPN_2_20211207T160255_20211207T160080_C001  CS_OFFL_SIR_GOPN_2_20211207T160255_20211207T160080_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  CS_OFFL_SIR_GOPN_2_20211207T191868_20211207T193285_C001  Total Geocentric Ocean Tide (GOT)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  CS_OFFL_SIR_GOPN_2_20211207T193166_20211207T193141_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  CS_OFFL_SIR_GOPN_2_20211207T205869_20211207T210023_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  CS_OFFL_SIR_GOPN_2_20211207T215802_20211207T22018_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  Mean Dynamic Topography (1)  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Top |
| Geocentric Ocean Tide (GOT)  Geocentric Ocean Tide (GOT)  Total Geocentric Ocean Tide (GOT)  There is an error with the Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the Mean Dy |
| CS_OFFL_SIR_GOPN_2_20211207T17020_20211207T170503_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  CS_OFFL_SIR_GOPN_2_20211207T171836_20211207T193341_C001  Mean Dynamic Topography (1)  Total Geocentric Ocean Tide (GOT)  GOT) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  CS_OFFL_SIR_GOPN_2_20211207T191836_20211207T193141_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  CS_OFFL_SIR_GOPN_2_20211207T193166_20211207T193141_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  CS_OFFL_SIR_GOPN_2_20211207T205859_20211207T210023_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  CS_OFFL_SIR_GOPN_2_20211207T215832_20211207T215316_C001  Mean Sas Surface (1), Mean Dynamic Topography (solution 1) for one or more records  CS_OFFL_SIR_GOPN_2_20211207T215832_20211207T223136_C001  Mean Sas Surface (1), Mean Dynamic Topography (1) There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  CS_OFFL_SIR_GOPN_2_20211207T233138_20211207T234116_C001  Mean Sas Surface (1), Mean Dynamic Topography (solution 1) for one or more records  Mean Sas Surface (1), Mean Dynamic Topography (solution 1) and the Mean Dynamic Topography (solution 1) for one or more records  CS_OFFL_SIR_GOPR_2_20211207T03333_20211207T234116_C001  GPD Wet Tropospheric Correction  GPD Wet Tropospheric Correction There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There i |
| or more records  GS_OFFL_SIR_GOPN_2_20211207T191836_20211207T192325_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  GS_OFFL_SIR_GOPN_2_20211207T215316_C001  Mean Dynamic Topography (1)  Mean Sea Surface (1), Mean Dynamic Topography (solution 1) for one or more records  GS_OFFL_SIR_GOPN_2_20211207T233318_20211207T220136_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (solution 1) for one or more records  GS_OFFL_SIR_GOPN_2_20211207T233338_20211207T233446_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) for one or more records  GS_OFFL_SIR_GOPN_2_20211207T233338_20211207T234416_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) for one or more records  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) for one or more records  GS_OFFL_SIR_GOPN_2_20211207T003340_20211207T003516_C001  GS_OFFL_SIR_GOPN_2_20211207T0034852_20211207T005012_C001  GS_OFFL_SIR_GOPR_2_20211207T004852_20211207T005012_C001  GS_OFFL_SIR_GOPR_2_20211207T004852_20211207T005012_C001  GS_OFFL_SIR_GOPR_2_20211207T010555_20211207T010607_C001  GS_OFFL_SIR_GOPR_2_20211207T010555_20211207T010607_C001  GS_OFFL_SIR_GOPR_2_20211207T010555_20211207T010607_C001  GS_OFFL_ |
| or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  OS_OFFL_SIR_GOPN_2_20211207T193106_20211207T193141_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  OS_OFFL_SIR_GOPN_2_20211207T205859_20211207T210023_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  OS_OFFL_SIR_GOPN_2_20211207T215150_20211207T215316_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  OS_OFFL_SIR_GOPN_2_20211207T21532_20211207T215316_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  OS_OFFL_SIR_GOPN_2_20211207T21533138_20211207T2203136_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (1)  OS_OFFL_SIR_GOPN_2_20211207T233138_20211207T233446_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (1)  OS_OFFL_SIR_GOPN_2_20211207T233733_20211207T233416_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  OS_OFFL_SIR_GOPR_2_20211207T003340_20211207T003516_C001  OS_OFFL_SIR_GOPR_2_20211207T003340_20211207T003516_C001  OS_OFFL_SIR_GOPR_2_20211207T003340_20211207T005012_C001  OS_OFFL_SIR_GOPR_2_20211207T005225_20211207T005012_C001  OS_OFFL_SIR_GOPR_2_20211207T005225_20211207T00506_C001  OS_OFFL_SIR_GOPR_2_20211207T0050525_20211207T00506_C001  OS_OFFL_SIR_GOPR_2_20211207T005055_20211207T00506_C001  OS_OFFL_SIR_GOPR_2_20211207T0050525_20211207T00506_C001  OS_OFFL_SIR_GOPR_2_20211207T0050525_20211207T00506_C001  OS_OFFL_SIR_GOPR_2_20211207T0050525_20211207T00506_C001  OS_OFFL_SIR_GOPR_2_20211207T0050525_20211207T00506_C001  OS_O |
| CS_OFFL_SIR_GOPN_2_20211207T193140_20211207T193141_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  S_OFFL_SIR_GOPN_2_20211207T215316_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  S_OFFL_SIR_GOPN_2_20211207T215832_20211207T220136_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (1)  S_OFFL_SIR_GOPN_2_20211207T233138_20211207T233446_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) for one or more records  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) for one or more records  CS_OFFL_SIR_GOPN_2_20211207T233733_20211207T233416_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) for one or more records  CS_OFFL_SIR_GOPN_2_20211207T003340_20211207T003516_C001  GPD Wet Tropospheric Correction  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  Th |
| CS_OFFL_SIR_GOPN_2_20211207T215859_20211207T210023_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  Topography (1)  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction |
| CS_OFFL_SIR_GOPN_2_20211207T215150_20211207T215316_C001  Mean Dynamic Topography (1)  Mean Sea Surface (1), Mean Dynamic Topography (solution 1) for one or more records  There is an error with the MsS height (solution 1) and the Mean Dynamic Topography (1)  Mean Sea Surface (1), Mean Dynamic Topography (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more recor |
| CS_OFFL_SIR_GOPN_2_20211207T215832_20211207T220136_C001  Mean Sea Surface (1), Mean Dynamic Topography (1)  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  CS_OFFL_SIR_GOPN_2_20211207T233138_20211207T233446_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  CS_OFFL_SIR_GOPR_2_20211207T003340_20211207T003516_C001  GPD Wet Tropospheric Correction  GPD Wet Tropospheric Correction  GPD Wet Tropospheric Correction  GPD Wet Tropospheric Correction  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records                                 |
| Topography (1)  Topography height (solution 1) for one or more records  Topography height (solution 1) for one or more records  Topography height (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records   |
| Topography (1)  Topography (2202112071233136_202112071233446_C001  Topography (1)  Topography height (solution 1) for one or more records  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the GPD Wet Tropospheric Correction Topography height (solution 1) for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  |
| Topography (1)  Topography height (solution 1) for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPR_2_20211207T004852_20211207T005012_C001  GPD Wet Tropospheric Correction  GPD Wet Tropospheric Correction  There is an error with the GPD Wet Tropospheric correction for one or more records  CS_OFFL_SIR_GOPR_2_20211207T005225_20211207T005706_C001  GPD Wet Tropospheric Correction  GPD Wet Tropospheric Correction  There is an error with the GPD Wet Tropospheric correction for one or more records  CS_OFFL_SIR_GOPR_2_20211207T010555_20211207T010607_C001  GPD Wet Tropospheric Correction  There is an error with the GPD Wet Tropospheric correction for one or more records  CS_OFFL_SIR_GOPR_2_20211207T010611_20211207T010612_C001  GPD Wet Tropospheric Correction  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPR_2_20211207T0105225_20211207T0105706_C001  GPD Wet Tropospheric Correction  GPD Wet Tropospheric Correction  There is an error with the GPD Wet Tropospheric correction for one or more records  CS_OFFL_SIR_GOPR_2_20211207T010555_20211207T010607_C001  GPD Wet Tropospheric Correction  GPD Wet Tropospheric Correction  There is an error with the GPD Wet Tropospheric correction for one or more records  CS_OFFL_SIR_GOPR_2_20211207T010611_20211207T010612_C001  GPD Wet Tropospheric Correction  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records  There is an error with the GPD Wet Tropospheric correction for one or more records   |
| CS_OFFL_SIR_GOPR_2_20211207T010555_20211207T010607_C001  GPD Wet Tropospheric Correction  GPD Wet Tropospheric Correction  There is an error with the GPD Wet Tropospheric correction for one or more records  CS_OFFL_SIR_GOPR_2_20211207T010611_20211207T010612_C001  GPD Wet Tropospheric Correction  There is an error with the GPD Wet Tropospheric correction for one or more records  CS_OFFL_SIR_GOPR_2_20211207T010618_20211207T010622_C001  GPD Wet Tropospheric Correction  There is an error with the GPD Wet Tropospheric correction for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T010618_20211207T010612_C001  GPD Wet Tropospheric Correction  more records  There is an error with the GPD Wet Tropospheric correction more records  CS_OFFL_SIR_GOPR_2_20211207T010618_20211207T010622_C001  GPD Wet Tropospheric Correction  There is an error with the GPD Wet Tropospheric correction or one or more records   |
| CS_OFFL_SIR_GOPR_2_202112071010611_202112071010612_C001  GPD Wet Tropospheric Correction  more records  There is an error with the GPD Wet Tropospheric correction or one or   |
|  |
| more records   |
| CS_OFFL_SIR_GOPR_2_20211207T010627_20211207T010840_C001  GPD Wet Tropospheric Correction  There is an error with the GPD Wet Tropospheric correction more records  |
| CS_OFFL_SIR_GOPR_2_20211207T010843_20211207T010902_C001  GPD Wet Tropospheric Correction  There is an error with the GPD Wet Tropospheric correction more records  |
| CS_OFFL_SIR_GOPR_2_20211207T011140_20211207T011304_C001  GPD Wet Tropospheric Correction  There is an error with the GPD Wet Tropospheric correction more records  |
| GPD Wet Tropospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)  GPD Wet Tropospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)  There is an error with the GPD Wet Tropospheric correction, the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T011745_20211207T011855_C001  Mean Sea Surface (1), Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20211207T015731_20211207T020223_C001 Mean Sea Surface (1) There is an error with the MSS height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T025128_20211207T025231_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography (solution 1) for one or more records  |

|   | Mean Sea Surface (1), Mean Dynamic  | There is an error with the MSS height (solution 1) and the Mean Dynamic   |
|---|---|---|
| CS_OFFL_SIR_GOPR_2_20211207T025252_20211207T025803_C001 | Topography (1)  | Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T030455_20211207T030648_C001 | Total Geocentric Ocean Tide (GOT)   | There is an error with the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20211207T043037_20211207T043719_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T061239_20211207T061735_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T074642_20211207T074801_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20211207T075005_20211207T075934_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T093025_20211207T093827_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T110301_20211207T110918_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20211207T111110_20211207T111827_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T111916_20211207T111946_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide | There is an error with the MSS height (solution 1), the Mean Dynamic Topography height (solution 1), the Total Geocentric Ocean Tide (solution 1: GOT and solution 2: FES) and the Non-Equilibrium Long Period Ocean Tide for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T125015_20211207T125735_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T140458_20211207T140712_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)  | There is an error with the MSS height (solution 1), the Mean Dynamic Topography height (solution 1) and the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T142930_20211207T143624_C001 | GPD Wet Tropospheric Correction,<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the GPD Wet Tropospheric correction, the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20211207T143628_20211207T143647_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T145702_20211207T145841_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T151249_20211207T151340_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T152031_20211207T152037_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T160808_20211207T161505_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T174632_20211207T174738_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T174738_20211207T175540_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)  | There is an error with the MSS height (solution 1), the Mean Dynamic Topography height (solution 1) and the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T192325_20211207T193106_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T210254_20211207T210926_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T210926_20211207T211217_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T223911_20211207T224049_C001 | Total Geocentric Ocean Tide (GOT),<br>Total Geocentric Ocean Tide (FES), Non-<br>Equilibrium Long Period Ocean Tide   | There is an error with the Total Geocentric Ocean Tide height (solution 1: GOT and solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records   |
| CS_OFFL_SIR_GOPR_2_20211207T224052_20211207T224827_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T224827_20211207T225026_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |

### 5.5 L2 Measurement Confidence Data Check

CryoSat L2 data includes a measurement confidence flag for each 20-Hz measurement record. The bit value of this flag indicates any problems when set.

Number of products with errors:

# 5.6 L2 Measurement Quality Flag Check

## L2 Quality Flags (20 Hz)

CryoSat L2 data includes Quality Flags for each 20 Hz, 20 Hz PLRM and 1 Hz measurement record. The bit value of this flag indicates any problems when set.

Currently, there are several common flags raised in the Level 2 products, which are summarised below. The table provides the full list of products flagged.

- > Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags: These flags are currently set for some records over ocean.
- > OCOG Altimeter Range and Backscatter Quality Flags: These flags are currently set for some records over continental ice.

| Product   | Test Failed  | Description   |
|---|--|---|
| CS_OFFL_SIR_GOPM_2_20211206T235855_20211207T001634_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T003516_20211207T004851_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T005012_20211207T005225_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T005706_20211207T010427_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T012411_20211207T014142_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T014322_20211207T015731_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T020511_20211207T020715_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T020815_20211207T021216_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T021411_20211207T022852_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T023157_20211207T023813_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T024641_20211207T024658_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T025911_20211207T030011_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T030802_20211207T032023_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T032606_20211207T033348_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T033531_20211207T033933_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T034314_20211207T035120_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T035358_20211207T040857_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T042439_20211207T042440_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T044554_20211207T051850_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T052435_20211207T053003_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T053311_20211207T055752_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T060148_20211207T060714_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T063135_20211207T065646_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T070405_20211207T070854_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T071224_20211207T073929_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T074801_20211207T075005_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |

| CS OFFL SIR GOPM 2 20211207T080335 20211207T083604 C001   | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG   | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been                             |
|---|--|---|
| 00_011E_0111_001 w_2_202112071000003_202112071000004_0001 | Altimeter Range and Backscatter Quality  | set for one or more records   |
| CS_OFFL_SIR_GOPM_2_20211207T084315_20211207T084845_C001   | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T085201_20211207T085634_C001   | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T092737_20211207T093025_C001   | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T094242_20211207T101602_C001   | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T102218_20211207T102732_C001   | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T103214_20211207T104753_C001   | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T112059_20211207T115433_C001   | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T115757_20211207T120219_C001   | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T120238_20211207T120632_C001   | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T121119_20211207T124458_C001   | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T124619_20211207T124908_C001   | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T130120_20211207T131200_C001   | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T131641_20211207T131803_C001   | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T131805_20211207T132002_C001   | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T132117_20211207T133406_C001   | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T133601_20211207T134119_C001   | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T134125_20211207T134132_C001   | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T134138_20211207T134334_C001   | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T135148_20211207T140458_C001   | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T140712_20211207T142042_C001   | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T142140_20211207T142341_C001   | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T143746_20211207T144010_C001   | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T144637_20211207T145701_C001   | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T145841_20211207T151248_C001   | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T151528_20211207T152031_C001   | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
|   | *  |   |

| CS_OFFL_SIR_GOPM_2_20211207T153621_20211207T154115_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
|---|--|---|
| CS_OFFL_SIR_GOPM_2_20211207T154654_20211207T154712_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T154745_20211207T155052_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T155215_20211207T155913_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T163104_20211207T165137_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T165548_20211207T165948_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T170624_20211207T173258_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T180644_20211207T183125_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T183338_20211207T183903_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T183909_20211207T184235_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T184625_20211207T191836_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T194326_20211207T200252_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T200530_20211207T201017_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T201340_20211207T202142_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T202619_20211207T205859_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T214128_20211207T214154_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T214158_20211207T214836_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T215316_20211207T215831_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T220505_20211207T222645_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T222931_20211207T223911_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T225026_20211207T225123_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T225208_20211207T225508_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T230940_20211207T231539_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T231726_20211207T232753_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPM_2_20211207T233446_20211207T233733_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPM_2_20211207T234427_20211208T001052_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |

| CS_OFFL_SIR_GOPN_2_20211207T020715_20211207T020815_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
|---|--|---|
| CS_OFFL_SIR_GOPN_2_20211207T024058_20211207T024335_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T052009_20211207T052156_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T053003_20211207T053230_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPN_2_20211207T071005_20211207T071128_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPN_2_20211207T144325_20211207T144637_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPN_2_20211207T212910_20211207T213043_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T035308_20211207T035358_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T183125_20211207T183221_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |

## L2 Quality Flags (20 Hz PLRM)

Currently, there are several common flags raised in the Level 2 products, which are summarised below. The table provides the full list of products flagged.

- > Ocean Altimeter Range, SSHA, SWH and Backscatter PLRM Quality Flags: These flags are currently set for occasional records over sea ice.
- > OCOG Altimeter Range and Backscatter PLRM Quality Flags: These flags are currently set for occasional records over continental ice.

Number of products with errors:

| Product   | Test Failed   | Description   |
|---|---|---|
| CS_OFFL_SIR_GOPN_2_20211207T002332_20211207T002607_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPN_2_20211207T002803_20211207T003340_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPN_2_20211207T024058_20211207T024335_C001 | OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality   | The OCOG Range and Backscatter Quality Flags have been set for one of more records  |
| CS_OFFL_SIR_GOPN_2_20211207T032023_20211207T032606_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T033348_20211207T033531_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPN_2_20211207T043720_20211207T044313_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPN_2_20211207T053003_20211207T053230_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPN_2_20211207T055752_20211207T055850_C001 | OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality   | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T071005_20211207T071128_C001 | OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality   | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T083946_20211207T084315_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T084845_20211207T085002_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T090817_20211207T090920_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T092104_20211207T092153_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T093827_20211207T094030_C001 | OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality   | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |

| CS_OFFL_SIR_GOPN_2_20211207T110918_20211207T111109_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
|---|---|---|
| CS_OFFL_SIR_GOPN_2_20211207T120632_20211207T120742_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM          | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPN_2_20211207T134334_20211207T134530_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T142714_20211207T142730_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPN_2_20211207T144325_20211207T144637_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T153004_20211207T153110_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T154115_20211207T154608_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T155052_20211207T155215_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T160255_20211207T160808_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPN_2_20211207T170220_20211207T170503_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T174048_20211207T174210_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T174258_20211207T174632_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T180234_20211207T180427_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T180545_20211207T180644_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T183221_20211207T183338_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM          | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPN_2_20211207T191836_20211207T192325_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T193307_20211207T193411_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T205859_20211207T210023_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T210120_20211207T210254_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T211501_20211207T211624_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T212141_20211207T212319_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T213248_20211207T213356_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T215150_20211207T215316_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPN_2_20211207T215832_20211207T220136_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPN_2_20211207T230729_20211207T230940_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T001634_20211207T002332_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |

| CS_OFFL_SIR_GOPR_2_20211207T005225_20211207T005706_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
|---|---|---|
| CS_OFFL_SIR_GOPR_2_20211207T010627_20211207T010840_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T010843_20211207T010902_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T011140_20211207T011304_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T011317_20211207T011745_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T011745_20211207T011855_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T033933_20211207T034101_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T040857_20211207T041658_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T043037_20211207T043719_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T044313_20211207T044554_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T061113_20211207T061212_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T065646_20211207T065938_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T075005_20211207T075934_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T083604_20211207T083946_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T093025_20211207T093827_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T094030_20211207T094143_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T101602_20211207T101857_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T102856_20211207T103214_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T110001_20211207T110300_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T111110_20211207T111827_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T111830_20211207T111836_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T111839_20211207T111912_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T111951_20211207T112059_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T115433_20211207T115606_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T125015_20211207T125735_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T125925_20211207T130120_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |

| CS_OFFL_SIR_GOPR_2_20211207T134132_20211207T134138_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
|---|---|---|
| CS_OFFL_SIR_GOPR_2_20211207T134531_20211207T135148_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM          | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T140458_20211207T140712_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T142930_20211207T143624_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T153110_20211207T153149_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T162940_20211207T163104_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T174738_20211207T175540_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T192325_20211207T193106_C001 | Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM          | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T193142_20211207T193307_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T194103_20211207T194146_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T202254_20211207T202619_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T210023_20211207T210120_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T210254_20211207T210926_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T210926_20211207T211217_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T211432_20211207T211501_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T211625_20211207T211739_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T214836_20211207T215150_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T224052_20211207T224827_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T224827_20211207T225026_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
| CS_OFFL_SIR_GOPR_2_20211207T225509_20211207T225853_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records  |
| CS_OFFL_SIR_GOPR_2_20211207T234224_20211207T234427_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records |
|   |   |   |

# L2 Quality Flags (1 Hz & 1 Hz PLRM)

 $\label{lem:currently} \textbf{Currently, there are several common flags raised in the Level 2 products, which are summarised below.}$ 

> 1 Hz and 1 Hz Ocean SSHA Quality Flags: These flags are currently set for products over sea ice, which is to be expected.

Number of products with errors:

### 5.8 L2 Ocean Retracking Quality Check

### L2 Retracking Flags (20 Hz)

CryoSat L2 data includes an ocean retracking quality flag for each 20 Hz measurement record. The bit value of this flag indicates any problems when set.

Ocean Retracking Quality Flag: This flag is currently set for products over land and sea ice, but this is to be expected. The number of products with this error flag set is given below.

#### L2 Retracking Flags (20 Hz PLRM)

CryoSat L2 data includes an ocean retracking quality flag for each 20 Hz PLRM measurement record. The bit value of this flag indicates any problems when set.

Ocean Retracking Quality Flag (PLRM): This flag is currently set for products GOPR and GOPN products over sea ice, but this is to be expected.

Number of products with errors:

#### 6.1 P2P Product Format Check

Each product, retrieved and unpacked from the science server, is checked to ensure it consists of both an XML header file (.HDR) and a NetCDF product file (.nc).

Number of products with errors:

0

## 6.2 P2P Product Header Analysis

For all products, a series of pre-defined checks are performed on the MPH and SPH in order to identify any inconsistencies and/or errors raised by the ground-segment processing chain.

Number of products with errors:

0

## 6.3 P2P Auxiliary Data File Usage Check

Each product is checked for missing Data Set Descriptors with respect to a pre-determined baseline and also to check the validity of Auxiliary Data Files is correct.

Number of products with errors:

0

### 6.4 P2P Auxiliary Correction Error Check

For all products, the auxiliary corrections within the Geophysical Group are checked for the default error value (32767).

Currently, there are some common auxiliary correction errors raised in the Level 2 products that are expected, due to surface type. All common flags are summarised in the list below, followed by a table highlighting any additional issues that may arise from this test.

- > ECMWF Meteo Corrections: Currently the following corrections are not computed over CONTINENTAL ICE: Dry Tropospheric Correction, Wet Tropospheric Correction, Inverse Barometric Correction and the U-Wind and V-Wind components of the ECMWF model wind vector. This is a known anomaly (CRYO-COP-3) and will be resolved in a future IPF update. The affected products are not reported in the table below.
- > Sea State Bias & Sea State Bias PLRM: The error value is currently set for products over sea ice, but this is to be expected.
- > Altimetric Wind Speed Error: The error value is currently set for products over land and sea ice, but this is to be expected.

Number of products with errors:

| Product  | Test Failed   | Description   |
|--|---|---|
| CS_OFFL_SIR_GOP_2_20211206T233804_20211207T002739_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T011718_20211207T020653_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T020653_20211207T025633_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_220211207T025633_20211207T034608_C001  | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide | There is an error with the MSS height (solution 1), the Mean Dynamic Topography height (solution 1), the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |
| CS_OFFL_SIR_GOP_2_20211207T034608_20211207T043548_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T043548_20211207T052523_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)  | There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography height (solution 1) and the Total Geocentric Ocean Tide<br>height (solution 1: GOT) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T052523_20211207T061502_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T061502_20211207T070438_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T070438_20211207T075417_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T075417_20211207T084352_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T084352_20211207T093332_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T093332_20211207T102307_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T102307_20211207T111246_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)  | There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography height (solution 1) and the Total Geocentric Ocean Tide<br>height (solution 1: GOT) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T111246_20211207T120222_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide | There is an error with the MSS height (solution 1), the Mean Dynamic Topography height (solution 1), the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |
| CS_OFFL_SIR_GOP_2_20211207T120222_20211207T125201_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T125201_20211207T134136_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T134136_20211207T143116_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)  | There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography height (solution 1) and the Total Geocentric Ocean Tide<br>height (solution 1: GOT) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T152051_20211207T161030_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)  | There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography height (solution 1) and the Total Geocentric Ocean Tide<br>height (solution 1: GOT) for one or more records  |

| CS_OFFL_SIR_GOP_2_20211207T161030_20211207T170006_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
|--|---|---|
| CS_OFFL_SIR_GOP_2_20211207T170006_20211207T174945_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_220211207T174945_20211207T183920_C001  | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)  | There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography height (solution 1) and the Total Geocentric Ocean Tide<br>height (solution 1: GOT) for one or more records  |
| CS_OFFL_SIR_GOP_220211207T183920_20211207T192900_C001  | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)  | There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography height (solution 1) and the Total Geocentric Ocean Tide<br>height (solution 1: GOT) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T192900_20211207T201835_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T201835_20211207T210815_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T210815_20211207T215750_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_220211207T215750_20211207T224729_C001  | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide | There is an error with the MSS height (solution 1), the Mean Dynamic Topography height (solution 1), the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records |
| CS_OFFL_SIR_GOP_2_20211207T224729_20211207T233704_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |
| CS_OFFL_SIR_GOP_2_20211207T233704_20211208T002644_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records  |

#### 6.5 P2P Measurement Confidence Data Check

CryoSat P2P data includes a measurement confidence flag for each 20 Hz measurement record. The bit value of this flag indicates any problems when set.

Number of products with errors:

#### 6.6 P2P Measurement Quality Flag Check

#### P2P Quality Flags (20 Hz)

CryoSat P2P data includes Quality Flags for each 20 Hz, 20 Hz PLRM and 1 Hz measurement record, copied from the corresponding L2 products.

Since the P2P Quality Flags are copied directly from the L2 Quality Flags, please see Section 5.6 for the full list of products affected.

Number of products with errors: 28

#### P2P Quality Flags (20 Hz PLRM)

Since the P2P Quality Flags are copied directly from the L2 Quality Flags, please see Section 5.6 for the full list of products affected.

Number of products with errors:

#### P2P Quality Flags (1 Hz & 1 Hz PLRM)

Since the P2P Quality Flags are copied directly from the L2 Quality Flags, please see Section 5.6 for the full list of products affected.

Number of products with errors: 28

## 6.8 P2P Ocean Retracking Quality Check

# P2P Retracking Flags (20 Hz)

Cryosat P2P data includes an ocean retracking quality flag (field 19) for each 20 Hz measurement record. The bit value of this flag indicates any problems when set.

Ocean Retracking Quality Flag (PLRM): This flag is currently set for products GOPR and GOPN products over sea ice, but this is to be expected.

Number of products with errors: 26

## P2P Retracking Flags PLRM

CryoSat L2 data includes an ocean retracking quality flag for each 20 Hz PLRM measurement record. The bit value of this flag indicates any problems when set.

Ocean Retracking Quality Flag (PLRM): This flag is currently set for products GOPR and GOPN products over sea ice, but this is to be expected.

Number of products with errors: 28

## 7. GOP QCC Report Analysis

The Quality Control for CryoSat (QCC) facility performs a primary survey of data products immediately after production by the PDS and LTA processing facilities. A list of the tests which raised errors or warnings is provided below.

| Product type | No. Products | No. QCC Reports | No. Valid | No. Warnings | No. Errors |
|--------------|--------------|-----------------|-----------|--------------|------------|
| SIR_GOPM1B   | 193          | 193             | 3         | 190          | 0          |
| SIR_GOPR1B   | 117          | 117             | 0         | 117          | 0          |
| SIR_GOPN1B   | 99           | 99              | 3         | 96           | 0          |
| SIR_GOPM_2   | 193          | 193             | 137       | 56           | 0          |
| SIR_GOPR_2   | 117          | 117             | 27        | 86           | 4          |
| SIR_GOPN_2   | 99           | 99              | 41        | 58           | 0          |
| SIR GOP P2P  | 27           | 27              | 0         | 26           | 1          |

### 7.1 QCC Errors

Number of QCC reports with errors:

| Total number of occurrences of each error |
|---|
|---|

| Floudet Type | ILOBOFIACDI | II.L | IIL.       | ILOBOFINODI | ILL | IIL | _ | _ | _ | _ | _ |
|--------------|-------------|------|------------|-------------|-----|-----|---|---|---|---|---|
| SIR_GOPR_2   | 4           | 1    | 4          | 4           | 1   | 4   |   |   |   |   |   |
|              |             |      |            |             |     |     |   |   |   |   |   |
|              |             |      |            |             |     |     |   |   |   |   |   |
| Product Type | RLOBOPNCDF  | RL   | RLOBOPNCDF | RL          | •   | -   | - | - | • | - | • |

| Test Description Key: |                                 |  |  |  |  |
|-----------------------|---------------------------------|--|--|--|--|
| Abbreviation          | Test name                       | Details                                      |  |  |  |
| RLOBOPNCDF            | RangeLatitudeOrBlankOP_7NetCDF  | Latitude should be between -90E7 and 90E7    |  |  |  |
| RL                    | RangeLatitude_6                 | Latitude should be between -90E6 and 90E6    |  |  |  |
| RL                    | RangeLatitude_7                 | Latitude should be between -90E7 and 90E7    |  |  |  |
| RLOBOPNCDF            | RangeLongitudeOrBlankOP_7NetCDF | Longitude should be between -180E7 and 180E7 |  |  |  |
| RL                    | RangeLongitude_6                | Longitude should be between -180E6 and 180E6 |  |  |  |
| RL                    | RangeLongitude_7                | Longitude should be between -180E7 and 180E7 |  |  |  |

# 7.2 QCC Warnings

Number of QCC reports with warnings

| Product Type | BCSHNCDF | IOHHMOOR | MVIOEPFDNCDF | MVIOEPNCDF | MVIONCDF | RBSZOPOEPFDNCDF | RBSZOPOEPFDPLRMNCD |
|--------------|----------|----------|--------------|------------|----------|-----------------|--------------------|
| SIR_GOPM1B   | 190      | 0        | 0            | 0          | 0        | 0               | 0                  |
| SIR_GOPM_2   | 0        | 0        | 42           | 42         | 6        | 46              | 0                  |
| SIR_GOPN1B   | 95       | 0        | 0            | 0          | 0        | 0               | 0                  |
| SIR_GOPN_2   | 0        | 0        | 12           | 31         | 9        | 26              | 28                 |
| SIR_GOPR1B   | 114      | 0        | 0            | 0          | 0        | 0               | 0                  |
| SIR_GOPR_2   | 0        | 4        | 43           | 51         | 14       | 32              | 22                 |

|   | Product Type | RBSZOPOEPNCDF | RNELPOTONCDF | RPEPOPFDLRMNCDF | RPEPOPFDPLRMSARNC | RPEPOPFDPLRMSINNCD | RPEPOPFDSARNCDF | RPEPOPFDSINNCDF |
|---|--------------|---------------|--------------|-----------------|-------------------|--------------------|-----------------|-----------------|
| Ī | SIR_GOPM1B   | 0             | 0            | 0               | 0                 | 0                  | 0               | 0               |
|   | SIR_GOPM_2   | 39            | 2            | 38              | 0                 | 0                  | 0               | 0               |
|   | SIR_GOPN1B   | 0             | 0            | 0               | 0                 | 0                  | 0               | 0               |
|   | SIR_GOPN_2   | 20            | 1            | 0               | 0                 | 24                 | 0               | 30              |
|   | SIR_GOPR1B   | 0             | 0            | 0               | 0                 | 0                  | 0               | 0               |
|   | SIR GOPR 2   | 10            | 0            | 0               | 49                | n                  | 62              | 0               |

| Product Type | RPEPOPLRMNCDF | RPEPOPSARNCDF | RPEPOPSINNCDF | RSSBCONCDF | RSSHAOFDNCDF | RSSHAOFDPLRMNCDF | RSSHAONCDF |
|--------------|---------------|---------------|---------------|------------|--------------|------------------|------------|
| SIR_GOPM1B   | 0             | 0             | 0             | 0          | 0            | 0                | 0          |
| SIR_GOPM_2   | 29            | 0             | 0             | 8          | 25           | 0                | 4          |
| SIR_GOPN1B   | 0             | 0             | 0             | 0          | 0            | 0                | 0          |
| SIR_GOPN_2   | 0             | 0             | 26            | 15         | 37           | 47               | 27         |
| SIR_GOPR1B   | 0             | 0             | 0             | 0          | 0            | 0                | 0          |
| SIR GOPR 2   | 0             | 53            | 0             | 3          | 71           | 40               | 9          |

| Product Type | RSWHOEPFDNCDF | RSWHOEPFDPLRMNCDF | RSWHOEPNCDF | SPHRTASCNSNCDF | SPHRTASCNSNCDF | SOOHHIFHD | SCSTODHRNCDF |
|--------------|---------------|-------------------|-------------|----------------|----------------|-----------|--------------|
| SIR_GOPM1B   | 0             | 0                 | 0           | 1              | 0              | 0         | 0            |
| SIR_GOPM_2   | 31            | 0                 | 3           | 1              | 0              | 0         | 0            |
| SIR_GOPN1B   | 0             | 0                 | 0           | 0              | 1              | 0         | 48           |
| SIR_GOPN_2   | 28            | 28                | 11          | 0              | 0              | 0         | 0            |
| SIR_GOPR1B   | 0             | 0                 | 0           | 0              | 0              | 0         | 117          |
| SIR_GOPR_2   | 48            | 56                | 1           | 0              | 0              | 8         | 0            |

| Product Type IOI | HHMOOR | MVIOEPFDNCDF | MVIOEPNCDF | MVIONCDF | RBSZOPOEPFDNCDF | RBSZOPOEPFDPLRMNCD | RBSZOPOEPNCDF |
|------------------|--------|--------------|------------|----------|-----------------|--------------------|---------------|
| SIR_GOP_2_ 14    | 1      | 25           | 27         | 9        | 27              | 15                 | 27            |

| Product Type | RNELPOTONCDF | RPEPOPFDPLRMSINNCDI | RPEPOPFDSINNCDF | RPEPOPSINNCDF | RSSBCONCDF | RSSHAOFDNCDF | RSSHAOFDPLRMNCDF |
|--------------|--------------|---------------------|-----------------|---------------|------------|--------------|------------------|
| SIR_GOP_2_   | 2            | 16                  | 27              | 22            | 15         | 27           | 17               |

| I | Product Type | RSSHAONCDF | RSWHOEPFDNCDF | RSWHOEPFDPLRMNCDF | RSWHOEPNCDF | SPHLPQWNCDF | - | • |
|---|--------------|------------|---------------|-------------------|-------------|-------------|---|---|
| ſ | SIR GOP 2    | 22         | 27            | 18                | 11          | 27          |   |   |

| Test Description Key:   |   |  |
|-------------------------|---|--|
| Abbreviation            | Test name   | Details  |
| BCSHNCDF                | BurstCounterStep20HzNetCDF                                  | The burst counter should be one higher with regard to the previous burst counter   |
| IOHHMOOR                | IndexOf1Hzin20HzMappingOutOfRange                           | The mapping of 20 Hz to 1 Hz measurements should be in the range 0 to (number of 1 Hz samples - 1)   |
| MVIOEPFDNCDF            | MissingValueIntOceanExcludingPolarFD2NetCDF                 | The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees                                   |
| MVIOEPNCDF              | MissingValueIntOceanExcludingPolarNetCDF                    | The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees                                   |
| MVIONCDF                | MissingValueIntOceanNetCDF                                  | The value should not be a 'missing value' for surface type 0 only  |
| RBSZOPOEPFDNCDF         | RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2NetCDF     | The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees     |
| RBSZOPOEPFDPLRM<br>NCDF | RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2PLRMNetCDF | The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees     |
| RBSZOPOEPNCDF           | RangeBackscatterSigmaZeroOPOceanExcludingPolarNetCDF        | The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees     |
| RNELPOTONCDF            | RangeNELPOceanTideOceanNetCDF                               | The Non-equilibrium long period ocean loading tide height should be between -40mm and 40mm (or missing) for surface type = ocean             |
| RPEPOPFDLRMNCDF         | RangePeakinessExcludingPolarOPFD2LRMNetCDF                  | The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                    |
| RPEPOPFDPLRMSAR<br>NCDF | RangePeakinessExcludingPolarOPFD2PLRMSARNetCDF              | The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                   |
| RPEPOPFDPLRMSINN<br>CDF | RangePeakinessExcludingPolarOPFD2PLRMSINNetCDF              | The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                   |
| RPEPOPFDSARNCDF         | RangePeakinessExcludingPolarOPFD2SARNetCDF                  | The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                   |
| RPEPOPFDSINNCDF         | RangePeakinessExcludingPolarOPFD2SINNetCDF                  | The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                   |
| RPEPOPLRMNCDF           | RangePeakinessExcludingPolarOPLRMNetCDF                     | The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                    |
| RPEPOPSARNCDF           | RangePeakinessExcludingPolarOPSARNetCDF                     | The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                   |
| RPEPOPSINNCDF           | RangePeakinessExcludingPolarOPSINNetCDF                     | The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                   |
| RSSBCONCDF              | RangeSeaStateBiasCorrectionOceanNetCDF                      | The sea state bias correction should be between -500mm and 0mm (or missing) for surface type = ocean   |
| RSSHAOFDNCDF            | RangeSeaSurfaceHeightAnomalyOceanFD3NetCDF                  | The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean                                    |
| RSSHAOFDPLRMNCD<br>F    | RangeSeaSurfaceHeightAnomalyOceanFD3PLRMNetCDF              | The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean                                    |
| RSSHAONCDF              | RangeSeaSurfaceHeightAnomalyOceanNetCDF                     | The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean                                    |
| RSWHOEPFDNCDF           | RangeSignificantWaveHeightOceanExcludingPolarFD2NetCDF      | The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees |
| RSWHOEPFDPLRMNC<br>DF   | RangeSignificantWaveHeightOceanExcludingPolarFD2PLRMNetCDF  | The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees |
| RSWHOEPNCDF             | RangeSignificantWaveHeightOceanExcludingPolarNetCDF         | The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees |

| SPHRTASCNSNCDF | SPH_Rel_Time_ASC_Node_Start_v2_NetCDF | Rel_Time_ASC_Node_Start mismatch (DBL ASC, rounded up to 0.1)   |
|----------------|---------------------------------------|---|
| SPHRTASCNSNCDF | SPH_Rel_Time_ASC_Node_Stop_v2_NetCDF  | Rel_Time_ASC_Node_Stop mismatch   |
| SOOHHIFHD      | SameOrOneHigher1HzIndexFor20HzData    | The 1 Hz index of a 20 Hz sample should be the same or 1 higher than its previous sample              |
| SCSTODHRNCDF   | SequenceCounterStepTODHRNetCDF        | The sequence counter should be modulo 4 higher with regard to the previous sequence counter           |
| SCSTODNCDF     | SequenceCounterStepTODNetCDF          | The sequence counter should be one higher (modulo 16384) with regard to the previous sequence counter |

# 7.3 Missing QCC Reports

Number of products with missing QCC reports: