

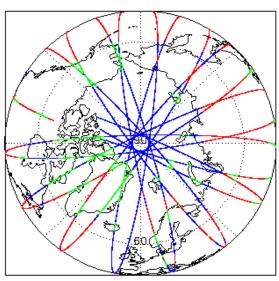
# 1. Overview

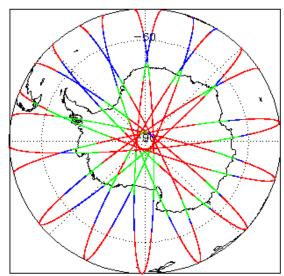
| Report Production: | 15-Jan-2021  |  |
|--------------------|--|--|
| Processor Used:    | CryoSat Ocean Processor  |  |
| Data Used:         | Geophysical Ocean Products (GOP)<br>L1B, L2 & P2P Science Data |  |

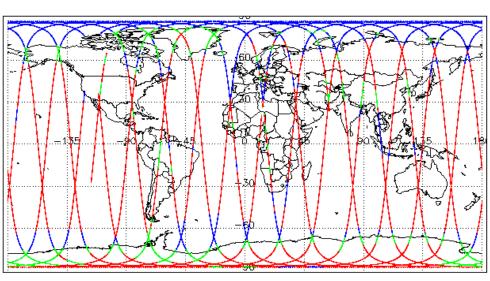
| Check                                      | L1 & L2                      | P2P                     |
|--|------------------------------|-------------------------|
| Server check: science-pds.cryosat.esa.int  | Nominal                      | Nominal                 |
| Server check: calval-pds.cryosat.esa.int   | 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, 7.2 and 7.3 | See Section 7.1 and 7.2 |

| N | lission / Instru | ment News       |
|---|------------------|-----------------|
|   | 17-Dec-2020      | None            |
|   | 18-Dec-2020      | None            |
|   | 19-Dec-2020      | 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:

# 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:

Ω

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:

#### 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: 20

| Product   | Test Failed  | Description  |
|---|--------------|--|
| CS_OFFL_SIR_GOPM1B_20201218T013520_20201218T014353_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPM1B_20201218T015117_20201218T015208_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20201218T051118_20201218T051430_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20201218T065232_20201218T065329_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20201218T082623_20201218T082924_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20201218T083030_20201218T083245_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20201218T110644_20201218T110839_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20201218T183149_20201218T183612_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20201218T201047_20201218T201159_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20201218T201329_20201218T201553_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20201218T205238_20201218T205626_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20201218T232505_20201218T232535_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20201218T070317_20201218T070632_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20201218T074857_20201218T075415_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20201218T082257_20201218T082344_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20201218T152410_20201218T152731_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20201218T160458_20201218T160814_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20201218T172919_20201218T173551_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20201218T190935_20201218T191532_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20201218T214358_20201218T215008_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:

### 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 which are expected due to surface type. All common flags are summarised in the list below, followed by a table highlighting any additional issues which may arise from this test.

> ECMWF Meteo Corrections: Currently the following corrections are not computed over CONTINENTAL ICE: Dry Tropospheric Corection, 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.

| Product   | Test Failed   | Description   |
|---|---|---|
| CS_OFFL_SIR_GOPM_2_20201218T152308_20201218T152410_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_20201218T234414_20201219T000955_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_20201218T010333_20201218T010453_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_20201218T010512_20201218T010730_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) and the Mean Dynamic Topography height (solution 1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES) and the Non-Equilibrium Long Period Ocean Tide for one or more records |
| CS_OFFL_SIR_GOPN_2_20201218T024325_20201218T024638_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_GOPN_2_20201218T025157_20201218T025314_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_20201218T042208_20201218T042528_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_GOPN_2_20201218T043054_20201218T043219_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_20201218T051118_20201218T051430_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) and the Mean Dynamic Topography height (solution 1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES) and the Non-Equilibrium Long Period Ocean Tide for one or more records |
| CS_OFFL_SIR_GOPN_2_20201218T060859_20201218T061039_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_GOPN_2_20201218T064736_20201218T064904_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_20201218T065232_20201218T065329_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_GOPN_2_20201218T073752_20201218T073933_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_20201218T074644_20201218T074857_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_GOPN_2_20201218T083030_20201218T083245_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_GOPN_2_20201218T091705_20201218T091851_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_20201218T092536_20201218T093029_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_GOPN_2_20201218T100713_20201218T101109_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_GOPN_2_20201218T110644_20201218T110839_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_20201218T150246_20201218T150415_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_20201218T155517_20201218T155642_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_GOPN_2_20201218T160152_20201218T160458_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) and the Mean Dynamic Topography height (solution 1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES) and the Non-Equilibrium Long Period Ocean Tide for one or more records |
| CS_OFFL_SIR_GOPN_2_20201218T173551_20201218T173845_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_GOPN_2_20201218T174056_20201218T174618_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_GOPN_2_20201218T183149_20201218T183612_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) and the Mean Dynamic Topography height (solution 1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES) and the Non-Equilibrium Long Period Ocean Tide for one or more records |
| CS_OFFL_SIR_GOPN_2_20201218T191532_20201218T191807_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_GOPN_2_20201218T201047_20201218T201159_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) and 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_GOPN_2_20201218T205238_20201218T205626_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_GOPN_2_20201218T215009_20201218T215232_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_20201218T215248_20201218T215433_C001 | Mean Dynamic Topography (1), Total<br>Geocentric Ocean Tide (GOT)                          | There is an error with the Mean Dynamic Topography (solution 1) and the Total Geocentric Ocean Tide (solution 1: GOT) for one or more records   |
| CS_OFFL_SIR_GOPN_2_20201218T223253_20201218T223444_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_20201218T224305_20201218T224517_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_20201218T232505_20201218T232535_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_20201218T232959_20201218T233052_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_20201218T001555_20201218T002110_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_20201218T014354_20201218T014559_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_20201218T014924_20201218T015117_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_20201218T015459_20201218T020259_C001 | 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 tidal corrections for one or more records   |
| CS_OFFL_SIR_GOPR_2_20201218T033326_20201218T034225_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_20201218T051431_20201218T052208_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_20201218T065330_20201218T065912_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_20201218T065928_20201218T070051_C001 | Total Geocentric Ocean Tide (FES), Non<br>Equilibrium Long Period Ocean Tide               | There is an error with 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_GOPR_2_20201218T083245_20201218T083506_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_20201218T083506_20201218T083933_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_20201218T101110_20201218T101631_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_20201218T114931_20201218T115935_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) and 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_20201218T132656_20201218T133434_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_20201218T134458_20201218T134554_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_20201218T150542_20201218T151243_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_20201218T151243_20201218T151409_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_20201218T164429_20201218T165142_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_20201218T165142_20201218T165558_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_20201218T182616_20201218T183037_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_20201218T183037_20201218T183149_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_20201218T200414_20201218T200902_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_20201218T200902_20201218T201047_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_20201218T212131_20201218T212946_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_20201218T214358_20201218T215008_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_20201218T232108_20201218T232347_C001 | Mean Dynamic Topography (1), Total<br>Geocentric Ocean Tide (GOT)                          | There is an error with the Mean Dynamic Topography (solution 1) and the Total Geocentric Ocean Tide (solution 1: GOT) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20201218T232535_20201218T232959_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

# 5.6 L2 Measurement Quality Flag Check

# L2 Quality Flags (20Hz)

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.

Number of products with errors:

83

| Product   | Test Failed  | Description  |
|---|--|--|
| CS_OFFL_SIR_GOPM_2_20201218T003435_20201218T005955_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 set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20201218T010730_20201218T011325_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_20201218T011551_20201218T013517_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_20201218T015213_20201218T015323_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_20201218T020605_20201218T023944_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_20201218T024638_20201218T025157_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_20201218T032934_20201218T033208_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_20201218T033247_20201218T033325_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_20201218T034538_20201218T035440_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_20201218T035726_20201218T041914_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_20201218T042528_20201218T042641_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_20201218T042649_20201218T043054_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_20201218T043544_20201218T044559_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_20201218T044746_20201218T045355_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_20201218T045539_20201218T050020_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_20201218T052448_20201218T055807_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_20201218T060033_20201218T060540_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_20201218T060546_20201218T060553_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_20201218T060600_20201218T060859_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_20201218T061640_20201218T064722_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_20201218T065113_20201218T065232_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_20201218T070632_20201218T072138_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_20201218T072202_20201218T073728_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_20201218T073934_20201218T074439_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_20201218T075415_20201218T080416_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_20201218T081035_20201218T082257_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_20201218T084647_20201218T090025_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_20201218T090205_20201218T091617_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_20201218T091851_20201218T092351_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_20201218T092358_20201218T092410_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_20201218T093126_20201218T095413_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_20201218T095535_20201218T100346_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_20201218T103203_20201218T103207_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_20201218T103314_20201218T105535_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_20201218T105933_20201218T110309_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_20201218T110331_20201218T110643_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_20201218T110953_20201218T113548_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_20201218T120102_20201218T120758_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_20201218T120915_20201218T123447_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_20201218T123716_20201218T124224_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_20201218T125015_20201218T132313_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_20201218T134554_20201218T135333_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_20201218T135809_20201218T140409_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_20201218T140907_20201218T141325_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_20201218T141716_20201218T142257_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_20201218T142932_20201218T150216_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_20201218T152308_20201218T152410_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_20201218T153529_20201218T155154_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. |

| Concentration Caulity   Conc   | CS_OFFL_SIR_GOPM_2_20201218T155642_20201218T160152_C001 | OCOG Altimeter Range Quality, OCOG | The OCOG Altimeter Range and Backscatter Quality Flags have been set |
|--|---|------------------------------------|--|
| 20 GPF, SR GPP4 2 200718171041 200718171040 20071817104   | CO_OTTOTT_OOT M_2_202012101100042_202012101100102_0001  | Backscatter Quality                | for one or more records.   |
| SQUITTLESRC_QCML_20201218171945   28201218171950   2820   | CS_OFFL_SIR_GOPM_2_20201218T160815_20201218T164216_C001 | and Backscatter Quality, OCOG      | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| Basication Coates   Security      | CS_OFFL_SIR_GOPM_2_20201218T171144_20201218T172919_C001 | and Backscatter Quality, OCOG      | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| Second Continued   Second Cont   | CS_OFFL_SIR_GOPM_2_20201218T173845_20201218T174056_C001 |                                    |  |
| Comparison   | CS_OFFL_SIR_GOPM_2_20201218T174803_20201218T182030_C001 | and Backscatter Quality, OCOG      | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| Section   Sect   | CS_OFFL_SIR_GOPM_2_20201218T182211_20201218T182240_C001 |                                    |  |
| Se_OFFL_SIR_OCPM_2_20201218T169867_20201218T169805_CD01  So OFFL_SIR_OCPM_2_20201218T1691807_20201218T169205_CD01  So OFFL_SIR_OCPM_2_20201218T1691807_20201218T169205_CD01  So OFFL_SIR_OCPM_2_20201218T169205_CD011  So OFFL_SIR_OCPM_2_20201218T109205_CD011  So OFFL_SIR_OCPM_2_20201218T20159_CD011  So OFFL_SIR_OCPM_2_20201218T20159_CD011  So OFFL_SIR_OCPM_2_20201218T20159_CD011  So OFFL_SIR_OCPM_2_20201218T20159_CD011  So OFFL_SIR_OCPM_2_20201218T20159_CD011  So OFFL_SIR_OCPM_2_20201218T20159_CD011  So OFFL_SIR_OCPM_2_20201218T20159_CD01118T204005_CD011  So OFFL_SIR_OCPM_2_20201218T20159_CD01118T204005_CD011  So OFFL_SIR_OCPM_2_20201218T20159_CD01118T204005_CD011  So OFFL_SIR_OCPM_2_20201218T20159_CD01118T204005_CD011  So OFFL_SIR_OCPM_2_20201218T20159_CD01118T204005_CD011  So OFFL_SIR_OCPM_2_20201218T20159_CD01118T204005_CD011  So OFFL_SIR_OCPM_2_20201218T20059_CD01118T204005_CD011  So OFFL_SIR_OCPM_2_20201218T20059_CD01118T204 | CS_OFFL_SIR_GOPM_2_20201218T183650_20201218T185521_C001 | and Backscatter Quality, OCOG      | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| Sedescater Quality  CS_CFFL_SR_GOPM_2_2001718T192182_2001218T19200_0001  CS_CFFL_SR_GOPM_2_2001718T192782_2001218T19250_0001  CS_CFFL_SR_GOPM_2_2001718T192782_2001218T19250_0001  CS_CFFL_SR_GOPM_2_2001718T192782_2001218T19250_0001  CS_CFFL_SR_GOPM_2_2001718T192682_2001218T19250_0001  CS_CFFL_SR_GOPM_2_2001718T192682_2001218T19250_0001  CS_CFFL_SR_GOPM_2_2001718T192682_2001128T192682_0001  CS_CFFL_SR_GOPM_2_2001718T192682_2001118T192682_0001  CS_CFFL_SR_GOPM_2_2001718T192682_2001118T192682_0001  CS_CFFL_SR_GOPM_2_2001718T192682_2001118T192682_0001  CS_CFFL_SR_GOPM_2_2001718T192682_2001118T192682_0001  CS_CFFL_SR_GOPM_2_2001718T192682_2001118T192682_0001  CS_CFFL_SR_GOPM_2_2001718T192682_2001118T192682_0001  CS_CFFL_SR_GOPM_2_2001718T192682_2001118T192682_0001  CS_CFFL_SR_GOPM_2_2001718T192682_2001118T192682_0001  CS_CFFL_SR_GOPM_2_2001718T192682_0001  CS_CFFL_SR_GOPM_2_2001718T192682_0001  CS_CFFL_SR_GOPM_2_2001718T192682_0001  CS_CFFL_SR_GOPM_2_2001718T100182_0001218T201532_0001  CS_CFFL_SR_GOPM_2_2001718T100182_0001218T201532_0001  CS_CFFL_SR_GOPM_2_2001718T100182_0001218T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_0001218T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_0001218T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_0001128T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_0001128T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_0001128T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_0001128T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_0001128T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_0001128T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_000128T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_000128T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_000128T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_000128T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_000128T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_000128T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_000128T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_000128T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_000128T201532_0001  CS_CFFL_SR_GOPM_2_2001718T201532_0 | CS_OFFL_SIR_GOPM_2_20201218T185611_20201218T190935_C001 | and Backscatter Quality, OCOG      | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| Backscater Cuality  CS_OFFL_SIR_GOPM_2_20201218T194226_2001  Some Allimeter Range and Backscater Cuality Flags have been all for the company of the company  | CS_OFFL_SIR_GOPM_2_20201218T191807_20201218T192005_C001 |                                    |  |
| and Backscatter Quality, COCG Altimeter Range and Backscatter Quality Plags have been alter Cock Planting and Backscatter Quality Plags have been set for one or more records.  CS_OFFL_SIR_GOPM_2_20201218T19442R_20201218T195380_CO01  SQ_OFFL_SIR_GOPM_2_20201218T19542R_20201218T195380_CO01  SQ_OFFL_SIR_GOPM_2_20201218T19542R_20201218T195380_CO01  SQ_OFFL_SIR_GOPM_2_20201218T201199_20201218T201329_CO01  SQ_OFFL_SIR_GOPM_2_20201218T201199_20201218T201329_CO01  SQ_OFFL_SIR_GOPM_2_20201218T201199_20201218T201329_CO01  SQ_OFFL_SIR_GOPM_2_20201218T201490_20201218T201349_CO01  SQ_OFFL_SIR_GOPM_2_20201218T201490_20201218T201349_CO01  SQ_OFFL_SIR_GOPM_2_20201218T201490_20201218T201490_CO01  SQ_OFFL_SIR_GOPM_2_20201218T201490_20201218T201490_CO01  SQ_OFFL_SIR_GOPM_2_20201218T201490_20201218T201490_CO01  SQ_OFFL_SIR_GOPM_2_20201218T201490_20201218T204820_CO01  SQ_OFFL_SIR_GOPM_2_20201218T201490_20201218T204820_CO01  SQ_OFFL_SIR_GOPM_2_20201218T201490_20201218T204820_CO01  SQ_OFFL_SIR_GOPM_2_20201218T204820_20201218T204820_CO01  SQ_OFFL_SIR_GOPM_2_20201218T204820_20201218T204820_CO01  SQ_OFFL_SIR_GOPM_2_20201218T204820_20201218T204820_CO01  SQ_OFFL_SIR_GOPM_2_20201218T204820_20201218T204820_CO01  SQ_OFFL_SIR_GOPM_2_20201218T204820_20201218T204820_CO01  SQ_OFFL_SIR_GOPM_2_20201218T204820_20201218T204820_CO01  SQ_OFFL_SIR_GOPM_2_20201218T204820_20201218T204920_CO01  SQ_OFFL_SIR_GOPM_2_20201218T204820_20201218T20490_CO01  SQ_OFFL_SIR_GOPM_2_20201218T204820_20201218T20490_CO01  SQ_OFFL_SIR_GOPM_2_20201218T204820_20201218T20490_CO01  SQ_OFFL_SIR_GOPM_2_20201218T204820_20201218T20490_CO01  SQ_OFFL_SIR_GOPM_2_20201218T204820_20201218T20490_CO01  SQ_OFFL_SIR_GOPM_2_20201218T204920_20201218T20490_CO01  SQ_OFFL_SIR_GOPM_2_20201218T204920_C0201218T20490_CO01  SQ_OFFL_SIR_GOPM_2_20201218T20490_C0201218T20490_CO01  SQ_OFFL_SIR_GOPM_2_20201218T20490_C0201218T20490_CO01  SQ_OFFL_SIR_GOPM_2_20201218T20490_C0201218T20490_CO01  SQ_OFFL_SIR_GOPM_2_20201218T20490_C0201218T20490_CO01  SQ_OFFL_SIR_GOPM_2_20201218T20490_C0201218T20490_C0001  SQ_OF | CS_OFFL_SIR_GOPM_2_20201218T192128_20201218T192507_C001 |                                    |  |
| and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags have been set for now row records.  CS_OFFL_SIR_GOPM_2_20201218T195822_20201218T195848_C001  CS_OFFL_SIR_GOPM_2_20201218T201159_20201218T201329_C001  Backscatter Quality, OCOG  | CS_OFFL_SIR_GOPM_2_20201218T192708_20201218T194226_C001 | and Backscatter Quality, OCOG      | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| Backscatter Quality of one or more records.  CS_OFFL_SIR_GOPM_2_20201218T201159_20201218T201329_C001  CS_OFFL_SIR_GOPM_2_20201218T201553_20201218T201845_C001  CS_OFFL_SIR_GOPM_2_20201218T201553_20201218T201845_C001  CS_OFFL_SIR_GOPM_2_20201218T201940_20201218T203312_C001  CS_OFFL_SIR_GOPM_2_20201218T201940_20201218T204820_C001  CS_OFFL_SIR_GOPM_2_20201218T204556_20201218T204820_C001  CS_OFFL_SIR_GOPM_2_20201218T204556_20201218T204820_C001  CS_OFFL_SIR_GOPM_2_20201218T204556_20201218T204820_C001  CS_OFFL_SIR_GOPM_2_20201218T204556_20201218T204820_C001  CS_OFFL_SIR_GOPM_2_20201218T204556_20201218T204820_C001  CS_OFFL_SIR_GOPM_2_20201218T204556_20201218T204820_C001  CS_OFFL_SIR_GOPM_2_20201218T204556_20201218T204820_C001  CS_OFFL_SIR_GOPM_2_20201218T204556_20201218T204503_C001  CS_OFFL_SIR_GOPM_2_20201218T205058_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T22310_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T22310_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T22310_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T22310_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T22310_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T22310_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T22310_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T22310_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223059_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223059_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_2020121 | CS_OFFL_SIR_GOPM_2_20201218T194428_20201218T195350_C001 | and Backscatter Quality, OCOG      | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| Backscatter Quality  CS_OFFL_SIR_GOPM_2_20201218T201553_20201218T201845_CO01  CS_OFFL_SIR_GOPM_2_20201218T201553_20201218T203312_CO01  CS_OFFL_SIR_GOPM_2_20201218T201940_20201218T203312_CO01  CS_OFFL_SIR_GOPM_2_20201218T201940_20201218T203312_CO01  CS_OFFL_SIR_GOPM_2_20201218T204566_20201218T203312_CO01  CS_OFFL_SIR_GOPM_2_20201218T204566_20201218T204520_CO01  CS_OFFL_SIR_GOPM_2_20201218T204566_20201218T205035_CO01  CS_OFFL_SIR_GOPM_2_20201218T204523_20201218T205035_CO01  CS_OFFL_SIR_GOPM_2_20201218T205026_20201218T205035_CO01  CS_OFFL_SIR_GOPM_2_20201218T205026_20201218T205035_CO01  CS_OFFL_SIR_GOPM_2_20201218T205026_20201218T205035_CO01  CS_OFFL_SIR_GOPM_2_20201218T205026_20201218T205035_CO01  CS_OFFL_SIR_GOPM_2_20201218T205026_20201218T205035_CO01  CS_OFFL_SIR_GOPM_2_20201218T205026_20201218T205035_CO01  CS_OFFL_SIR_GOPM_2_20201218T205026_20201218T210410_CO01  CS_OFFL_SIR_GOPM_2_20201218T205026_20201218T210410_CO01  CS_OFFL_SIR_GOPM_2_20201218T205026_20201218T210410_CO01  CS_OFFL_SIR_GOPM_2_20201218T205026_20201218T2110_CO01  CS_OFFL_SIR_GOPM_2_20201218T205026_20201218T223140_CO01  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223140_CO01  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223365_CO01  CS_OFFL_SIR_GOPM_2_20201218T223344_20201218T223340_CO01  CS_OFFL_SIR_GOPM_2_20201218T223344_20201218T223355_CO01  CS_OFFL_SIR_GOPM_2_20201218T223344_20201218T233128_CO01  CS_OFFL_SIR_GOPM_2_20201218T223344_20201218T233128_CO01  CS_OFFL_SIR_GOPM_2_20201218T2334 | CS_OFFL_SIR_GOPM_2_20201218T195822_20201218T195848_C001 |                                    |  |
| and Backscatter Quality, COCG Altimeter Range and Backscatter Quality Flags have been Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been SEC_OFFL_SIR_GOPM_2_20201218T204556_20201218T204820_CO01  CS_OFFL_SIR_GOPM_2_20201218T204556_20201218T204820_CO01  CS_OFFL_SIR_GOPM_2_20201218T204523_20201218T205035_CO01  CS_OFFL_SIR_GOPM_2_20201218T204523_20201218T205035_CO01  CS_OFFL_SIR_GOPM_2_20201218T205035_CO01  CS_OFFL_SIR_GOPM_2_20201218T20503_C001218T20105_CO01  CS_OFFL_SIR_GOPM_2_20201218T20503_C001218T20105_CO01  CS_OFFL_SIR_GOPM_2_20201218T20503_C001218T20105_CO01  CS_OFFL_SIR_GOPM_2_20201218T20505_CO01  CS_OFFL_SIR_GOPM_2_20201218T20505_C001  CS_OFFL_SIR_GOPM_2_20201218T20505_C001218T20505_C001  CS_OFFL_SIR_GOPM_2_20201218T20505_C00121 | CS_OFFL_SIR_GOPM_2_20201218T201159_20201218T201329_C001 |                                    |  |
| and Backscatter Quality, COCG Altimeter Range and Backscatter Quality Flags have been Altimeter Range and Backscatter Quality Flags have been set for one or more records.  CS_OFFL_SIR_GOPM_2_20201218T204556_20201218T204820_CO01  CS_OFFL_SIR_GOPM_2_20201218T204923_20201218T205035_CO01  CS_OFFL_SIR_GOPM_2_20201218T204923_20201218T205035_CO01  CS_OFFL_SIR_GOPM_2_20201218T205626_20201218T210401_CO01  CS_OFFL_SIR_GOPM_2_20201218T205626_20201218T210410_CO01  CS_OFFL_SIR_GOPM_2_20201218T205626_20201218T210410_CO01  CS_OFFL_SIR_GOPM_2_20201218T210649_20201218T21111_CO01  CS_OFFL_SIR_GOPM_2_20201218T210649_20201218T21111_CO01  CS_OFFL_SIR_GOPM_2_20201218T210649_20201218T212111_CO01  CS_OFFL_SIR_GOPM_2_20201218T215930_20201218T212110_CO01  CS_OFFL_SIR_GOPM_2_20201218T215930_20201218T223140_CO01  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223559_CO01  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223559_CO01  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T223405_CO01  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T2231128_CO01  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T2231128_CO01  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T2231128_CO01  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T2231128_CO01  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T2231128_CO01  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T2231128_CO01  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T2231128_CO01  CCGA Altimeter Range Quality, CCOGA Altimeter Range and Backscatter Quality Flags have been set for one or more records.  CCGA Altimeter Range and Backscatter Quality Flags have been set for one or more records.  CCGA Altimeter Range and Backscatter Quality Flags have been set for one or more records.  CCGA Altimeter Range and Backscatter Quality Flags have been set for one or more records.  CCGA Altimeter Range and Backscatter Quality Flags have been set for one or more records.  CCGA Altimeter Range and Backscatter Quality Flags have been set for one or more records.  CCGA Altimeter Range and Backscatter Quality Flags have been set for one or more records.  CCGA | CS_OFFL_SIR_GOPM_2_20201218T201553_20201218T201845_C001 | and Backscatter Quality, OCOG      | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| Backscatter Quality  CS_OFFL_SIR_GOPM_2_20201218T204923_20201218T205035_C001  CS_OFFL_SIR_GOPM_2_20201218T205626_20201218T210410_C001  CS_OFFL_SIR_GOPM_2_20201218T205626_20201218T210410_C001  CS_OFFL_SIR_GOPM_2_20201218T210649_20201218T21131_C001  CS_OFFL_SIR_GOPM_2_20201218T210649_20201218T21314_C001  CS_OFFL_SIR_GOPM_2_20201218T210649_20201218T223140_C001  CS_OFFL_SIR_GOPM_2_20201218T215930_20201218T223140_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223140_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223659_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223659_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T223150_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T2344 | CS_OFFL_SIR_GOPM_2_20201218T201940_20201218T203312_C001 | and Backscatter Quality, OCOG      | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| and Backscatter Quality COG Altimeter Range and Backscatter Quality Flags have been altimeter Range and Backscatter Quality Flags have been set for one or more records.  CS_OFFL_SIR_GOPM_2_20201218T205626_20201218T210410_C001  CS_OFFL_SIR_GOPM_2_20201218T210649_20201218T212131_C001  CS_OFFL_SIR_GOPM_2_20201218T210649_20201218T212131_C001  CS_OFFL_SIR_GOPM_2_20201218T215930_20201218T221310_C001  CS_OFFL_SIR_GOPM_2_20201218T215930_20201218T223140_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223340_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T2234559_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T223405_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T2231128_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T2234414_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T2234414_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T2234414_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T2041414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T2041414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T001400_C001  CS_OFFL_SIR_GOPM_2_20201218T001400_C001  CS_OFFL_SIR_GOPM_2_20201218T001400_C001  CS_OFFL_SIR_GOPM_2_20201218T001400_C001  CS_OFFL_SIR_GOPM_2_20201218T001400_C001  CS_OFFL_SIR_GOPM_2_20201218T001400_C001  CS_OFFL_SIR_GOPM_2_20201218T001400_C001  CS_OFFL_SIR_GOPM_2_20201218T001400_C001  CS_OFFL_SIR_GOPM_2_20201218T001400_C001  CS_OFFL_SIR_GOPM_2 | CS_OFFL_SIR_GOPM_2_20201218T204556_20201218T204820_C001 |                                    |  |
| Backscatter Quality  CS_OFFL_SIR_GOPM_2_20201218T210649_20201218T212131_C001  CS_OFFL_SIR_GOPM_2_20201218T210649_20201218T22131_C001  CS_OFFL_SIR_GOPM_2_20201218T215930_20201218T223140_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223140_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223659_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223659_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T224305_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T224305_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T2231128_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T224625_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T224625_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T234144_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T23 | CS_OFFL_SIR_GOPM_2_20201218T204923_20201218T205035_C001 | and Backscatter Quality, OCOG      | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223140_C001  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223659_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T223659_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T223128_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T223128_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T223128_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T224625_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T001253_20201218T001400_C001  CS_OFFL_SIR_GOPM_2_20201218T001253_20201218T00140 | CS_OFFL_SIR_GOPM_2_20201218T205626_20201218T210410_C001 |                                    |  |
| and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223659_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T223659_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T224305_C001  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T224305_C001  CS_OFFL_SIR_GOPM_2_20201218T224625_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T224625_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T224625_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T001253_20201218T001400_C001  Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.  The OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  The Ocean Altimeter Range 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_20201218T001253_20201218T001400_C001  The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  The Ocean Altimeter Range and Backscatter Quality Flags have been set for one or more records.  The Ocean Altimeter Range and Backscatter Quality Flags have been set for one or more records.  The Ocean Altimeter Range and Backscatter Quality Flags have been set for one or more records.   | CS_OFFL_SIR_GOPM_2_20201218T210649_20201218T212131_C001 | and Backscatter Quality, OCOG      | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| Backscatter Quality  CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T224305_C001  DCGG Altimeter Range Quality, OCOG Backscatter Quality  CS_OFFL_SIR_GOPM_2_20201218T224625_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T224625_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  DCGEN 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.  DCGEN 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.  DCGEN Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.  DCGEN 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.  DCGEN 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.  DCGEN Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range Al | CS_OFFL_SIR_GOPM_2_20201218T215930_20201218T223140_C001 | and Backscatter Quality, OCOG      | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| Backscatter Quality  CS_OFFL_SIR_GOPM_2_20201218T224625_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T224625_20201218T231128_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001  CS_OFFL_SIR_GOPM_2_20201218T001253_20201218T001400_C001  Backscatter Quality  Coean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG 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.  Coean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.  Coean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.  Coean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been and Backscatter Quality Flags have been set for one or more records.  | CS_OFFL_SIR_GOPM_2_20201218T223444_20201218T223659_C001 |                                    |  |
| CS_OFFL_SIR_GOPM_2_20201218T224625_20201218T231128_C001  and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and Backscatter Quality Flags and Backscatter Quality Flags and Backscatter Quality Flags and the OCOG Altimeter Range an | CS_OFFL_SIR_GOPM_2_20201218T223706_20201218T224305_C001 |                                    |  |
| CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001 and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags a | CS_OFFL_SIR_GOPM_2_20201218T224625_20201218T231128_C001 | and Backscatter Quality, OCOG      | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
| CS_OFFL_SIR_GOPN_2_20201218T001253_20201218T001400_C001 and Backscatter Quality, OCOG and the OCOG Altimeter Range and Backscatter Quality Flags have been   | CS_OFFL_SIR_GOPM_2_20201218T234414_20201219T000955_C001 | and Backscatter Quality, OCOG      | and the OCOG Altimeter Range and Backscatter Quality Flags have been |
|  | CS_OFFL_SIR_GOPN_2_20201218T001253_20201218T001400_C001 | and Backscatter Quality, OCOG      | and the OCOG Altimeter Range and Backscatter Quality Flags have been |

| CS_OFFL_SIR_GOPN_2_20201218T034501_20201218T034515_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_20201218T100713_20201218T101109_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_20201218T153509_20201218T153528_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_20201218T195350_20201218T195708_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_20201218T201329_20201218T201553_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_20201218T205238_20201218T205626_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_20201218T215009_20201218T215232_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_20201218T032638_20201218T032806_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_20201218T041914_20201218T042208_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 (20Hz 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_20201218T000520_20201218T000626_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_20201218T001253_20201218T001400_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_20201218T010333_20201218T010453_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_20201218T011325_20201218T011453_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_20201218T024325_20201218T024638_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_20201218T030632_20201218T030738_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_20201218T031413_20201218T031557_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_20201218T032627_20201218T032638_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_20201218T032806_20201218T032934_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_20201218T034225_20201218T034301_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_20201218T042208_20201218T042528_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_20201218T045356_20201218T045458_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_20201218T045513_20201218T045539_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_20201218T050850_20201218T050935_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_20201218T051118_20201218T051430_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_20201218T074644_20201218T074857_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_20201218T080416_20201218T080522_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_20201218T083030_20201218T083245_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_20201218T092536_20201218T093029_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_20201218T100713_20201218T101109_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_20201218T102608_20201218T102703_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_20201218T102741_20201218T103124_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_20201218T105700_20201218T105933_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_20201218T110644_20201218T110839_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_20201218T120759_20201218T120915_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_20201218T123542_20201218T123716_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_20201218T124558_20201218T124728_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_20201218T133434_20201218T133458_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_20201218T150246_20201218T150415_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_20201218T151648_20201218T151747_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_20201218T153509_20201218T153528_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_20201218T174056_20201218T174618_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_20201218T183149_20201218T183612_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_20201218T191532_20201218T191807_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_20201218T192006_20201218T192128_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_20201218T195350_20201218T195708_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_20201218T201329_20201218T201553_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_20201218T203312_20201218T203840_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_20201218T204820_20201218T204922_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_20201218T205238_20201218T205626_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_20201218T215248_20201218T215433_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_20201218T215806_20201218T215930_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_20201218T224305_20201218T224517_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_20201218T231128_20201218T231452_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_20201218T231927_20201218T232039_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_20201218T232505_20201218T232535_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_20201218T232959_20201218T233052_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_20201218T233513_20201218T233635_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_20201218T234017_20201218T234234_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_20201218T001400_20201218T001530_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_20201218T001555_20201218T002110_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_20201218T014924_20201218T015117_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_20201218T015459_20201218T020259_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_20201218T020416_20201218T020425_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_20201218T023944_20201218T024325_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_20201218T025314_20201218T025617_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_20201218T032051_20201218T032429_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_20201218T032638_20201218T032806_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_20201218T033326_20201218T034225_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_20201218T034355_20201218T034501_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_20201218T051431_20201218T052208_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_20201218T061039_20201218T061639_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_20201218T065330_20201218T065912_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_20201218T065928_20201218T070051_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_20201218T070317_20201218T070632_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_20201218T072139_20201218T072202_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_20201218T080822_20201218T081034_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_20201218T082410_20201218T082623_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_GOPR_2_20201218T082924_20201218T083030_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_20201218T083506_20201218T083933_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_20201218T101110_20201218T101631_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_20201218T101706_20201218T101806_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_20201218T103124_20201218T103203_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_20201218T114931_20201218T115935_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_20201218T124728_20201218T125014_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_20201218T132515_20201218T132519_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_20201218T132656_20201218T133434_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_20201218T140409_20201218T140906_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_GOPR_2_20201218T142614_20201218T142932_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_20201218T150542_20201218T151243_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_20201218T151243_20201218T151409_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_20201218T151757_20201218T152146_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_GOPR_2_20201218T155154_20201218T155517_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_20201218T160458_20201218T160814_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_20201218T172919_20201218T173551_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_20201218T174618_20201218T174803_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_20201218T182206_20201218T182211_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_20201218T182616_20201218T183037_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_20201218T183037_20201218T183149_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_20201218T190935_20201218T191532_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_20201218T200414_20201218T200902_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_20201218T212131_20201218T212946_C001 | OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality   | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |

|   | 9 , | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
|---|-----|--|
| CS_OFFL_SIR_GOPR_2_20201218T215549_20201218T215806_C001 |     | 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_20201218T232535_20201218T232959_C001 |     | 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 & 1Hz PLRM)

Currently, there are several common flags raised in the Level 2 products, which are summarised below.

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

Number of products with errors: 20

### 5.8 L2 Ocean Retracking Quality Check

#### L2 Retracking Flags (20Hz)

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.

Number of products with errors:

#### L2 Retracking Flags (20Hz, 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. GOP L2 Pole-to-Pole Data Quality Check

#### 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:

### 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:

### 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 which are expected due to surface type. All common flags are summarised in the list below, followed by a table highlighting any additional issues which 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: 30

| Product  | Test Failed   | Description  |
|--|---|--|
| CS_OFFL_SIR_GOP_2_20201217T232838_20201218T001814_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_220201218T001814_20201218T010753_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 | /solution 2: EES) and the Non equilibrium Long Period Ocean Tide height  |
| CS_OFFL_SIR_GOP_2_20201218T010753_20201218T015729_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_20201218T015729_20201218T024708_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_20201218T024708_20201218T033644_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_220201218T033644_20201218T042622_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_220201218T042622_20201218T051558_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) and 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_220201218T051558_20201218T060537_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_20201218T060537_20201218T065513_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_20201218T065513_20201218T074451_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period<br>Ocean Tide                                       | There is an error with the MSS height (solution 1) and 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_20201218T074451_20201218T083428_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_20201218T083428_20201218T092406_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_20201218T092406_20201218T101342_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_20201218T101342_20201218T110321_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_20201218T110321_20201218T115257_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_20201218T115257_20201218T124236_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) and 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_GOP_2_20201218T124236_20201218T133212_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_20201218T133212_20201218T142150_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_20201218T142150_20201218T151126_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_20201218T151126_20201218T160105_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_20201218T160105_20201218T165041_C001 | Mean Sea Surrace (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period               | Inere is an error with the MSS neight (solution 1) and 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_20201218T165041_20201218T174020_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_20201218T174020_20201218T182956_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_20201218T182956_20201218T191934_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) and 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_20201218T191934_20201218T200910_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_20201218T200910_20201218T205849_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) and 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_GOP_2_20201218T205849_20201218T214825_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_20201218T214825_20201218T223804_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) and 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_GOP_2_20201218T223804_20201218T232740_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) and 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_GOP_2_20201218T232740_20201219T001718_C002 | GPD Wet Tropospheric Correction,<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the GPD Wet Troposheric Correction, the MSS height (solution 1) and the Mean Dynamic Topography (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 (20Hz)

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: 29

# P2P Quality Flags (20Hz 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 & 1Hz 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:

# 6.8 P2P Ocean Retracking Quality Check

### P2P Retracking Flags (20Hz)

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.

30

## 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:

# 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   | 201          | 201             | 3         | 198          | 0          |
| SIR_GOPR1B   | 122          | 122             | 0         | 122          | 0          |
| SIR_GOPN1B   | 112          | 112             | 1         | 111          | 0          |
| SIR_GOPM_2   | 201          | 201             | 154       | 47           | 0          |
| SIR_GOPR_2   | 122          | 122             | 33        | 86           | 3          |
| SIR_GOPN_2   | 112          | 112             | 42        | 70           | 0          |
| SIR GOP P2P  | 29           | 29              | 0         | 27           | 2          |

### 7.1 QCC Errors

### Number of QCC reports with errors:

5

Total number of occurrences of each error

| Product Type | RLOBOPNCDF | RL | RL         | RLOBOPNCDF | RL | RL | - | - | - | - | - |
|--------------|------------|----|------------|------------|----|----|---|---|---|---|---|
| SIR_GOPR_2   | 3          | 1  | 3          | 3          | 1  | 3  |   |   |   |   |   |
|              |            |    |            |            |    |    |   |   |   |   |   |
| Product Type | RLOBOPNCDF | RL | RLOBOPNCDF | RL         | -  | -  | - | - | - | - | - |
| SIR GOP 2    | 2          | 2  | 2          | 2          |    |    |   |   |   |   |   |

| 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

SIR\_GOP\_2

27

29

19

Number of QCC reports with warnings

2276

Total number of occurrences of each warning

| Product Type | BCSHNCDF | IOHHMOOR | MVIOEPFDNCDF | MVIOEPNCDF | MVIONCDF | RBSZOPOEPFDNCDF | RBSZOPOEPFDPLRMNCD |
|--------------|----------|----------|--------------|------------|----------|-----------------|--------------------|
| SIR_GOPM1B   | 198      | 0        | 0            | 0          | 0        | 0               | 0                  |
| SIR_GOPM_2   | 0        | 0        | 33           | 30         | 1        | 41              | 0                  |
| SIR_GOPN1B   | 109      | 0        | 0            | 0          | 0        | 0               | 0                  |
| SIR_GOPN_2   | 0        | 0        | 7            | 36         | 6        | 26              | 27                 |
| SIR_GOPR1B   | 116      | 0        | 0            | 0          | 0        | 0               | 0                  |
| SIR_GOPR_2   | 0        | 3        | 41           | 55         | 3        | 26              | 25                 |

| Product Type | RBSZOPOEPNCDF | RNELPOTONCDF | RPEPOPFDLRMNCDF | RPEPOPFDPLRMSARNCI | RPEPOPFDPLRMSINNCD | RPEPOPFDSARNCDF | RPEPOPFDSINNCDF |
|--------------|---------------|--------------|-----------------|--------------------|--------------------|-----------------|-----------------|
| SIR_GOPM1B   | 0             | 0            | 0               | 0                  | 0                  | 0               | 0               |
| SIR_GOPM_2   | 38            | 0            | 26              | 0                  | 0                  | 0               | 0               |
| SIR_GOPN1B   | 0             | 0            | 0               | 0                  | 0                  | 0               | 0               |
| SIR_GOPN_2   | 20            | 0            | 0               | 0                  | 28                 | 0               | 37              |
| SIR_GOPR1B   | 0             | 0            | 0               | 0                  | 0                  | 0               | 0               |
| SIR GOPR 2   | 8             | 1            | 0               | 56                 | 0                  | 61              | 0               |

|   | Product Type | RPEPOPLRMNCDF | RPEPOPSARNCDF | RPEPOPSINNCDF | RSSBCONCDF | RSSHAOFDNCDF | RSSHAOFDPLRMNCDF | RSSHAONCDF |
|---|--------------|---------------|---------------|---------------|------------|--------------|------------------|------------|
| Ī | SIR_GOPM1B   | 0             | 0             | 0             | 0          | 0            | 0                | 0          |
|   | SIR_GOPM_2   | 19            | 0             | 0             | 6          | 25           | 0                | 8          |
|   | SIR_GOPN1B   | 0             | 0             | 0             | 0          | 0            | 0                | 0          |
|   | SIR_GOPN_2   | 0             | 0             | 31            | 19         | 43           | 60               | 32         |
|   | SIR_GOPR1B   | 0             | 0             | 0             | 0          | 0            | 0                | 0          |
|   | SIR GOPR 2   | 0             | 53            | 0             | 4          | 64           | 40               | 12         |

| Product Type | RSWHOEPFDNCDF | RSWHOEPFDPLRMNCDF | RSWHOEPNCDF | SOOHHIFHD | SCSTODHRNCDF | SCSTODNCDF | - |
|--------------|---------------|-------------------|-------------|-----------|--------------|------------|---|
| SIR_GOPM1B   | 0             | 0                 | 0           | 0         | 0            | 0          |   |
| SIR_GOPM_2   | 33            | 0                 | 1           | 0         | 0            | 0          |   |
| SIR_GOPN1B   | 0             | 0                 | 0           | 0         | 46           | 0          |   |
| SIR_GOPN_2   | 29            | 32                | 11          | 0         | 0            | 0          |   |
| SIR_GOPR1B   | 0             | 0                 | 0           | 0         | 121          | 8          |   |
| SIR_GOPR_2   | 41            | 52                | 2           | 6         | 0            | 0          |   |

| Product Type | IOHHMOOR | MVIOEPFDNCDF | MVIOEPNCDF | MVIONCDF | RBSZOPOEPFDNCDF | RBSZOPOEPFDPLRMNCD | RBSZOPOEPNCDF |
|--------------|----------|--------------|------------|----------|-----------------|--------------------|---------------|
| SIR GOP 2    | 17       | 29           | 29         | 10       | 29              | 18                 | 29            |

|   | Product Type | RNELPOTONCDF | RPEPOPFDPLRMSINNCD | RPEPOPFDSINNCDF   | RPEPOPSINNCDF | RSSBCONCDF  | RSSHAOFDNCDF | RSSHAOFDPLRMNCDF |
|---|--------------|--------------|--------------------|-------------------|---------------|-------------|--------------|------------------|
|   | SIR_GOP_2_   | 1            | 18                 | 29                | 25            | 22          | 29           | 19               |
|   |              |              |                    |                   |               |             |              |                  |
| Ī | Product Type | RSSHAONCDF   | RSWHOEPFDNCDF      | RSWHOEPFDPLRMNCDF | RSWHOEPNCDF   | SPHLPQWNCDF | -            | -                |

12

29

| 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 decrees                   |  |  |  |
| 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         | 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         | 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 |  |  |  |
| 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:

Product name
CS\_OFFL\_SIR\_GOPR1B\_20201218T132656\_20201218T132656\_C001
CS\_OFFL\_SIR\_GOPR\_2\_20201218T132656\_20201218T133434\_C001

Product name
0
0