

# **QA4EO Daily Report for GOP data:**

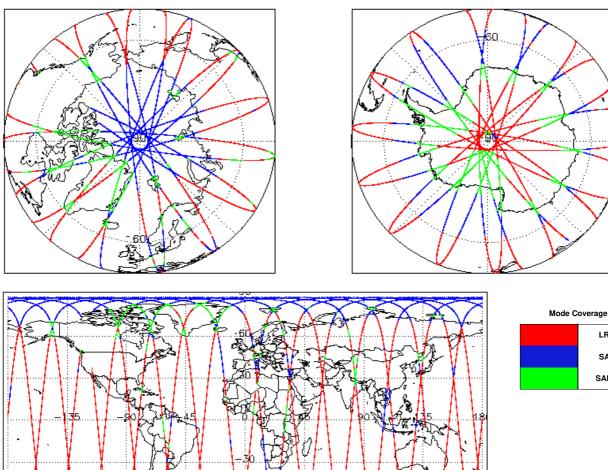
02/08/2020

|                    |  | Check                                      | L1 & L2                      | P2P                     |
|--------------------|--|--|------------------------------|-------------------------|
| Report Production: | 03-Sep-2020  | Server check: science-pds.cryosat.esa.int  | Nominal                      | Nominal                 |
|                    | One Onto One and Discourse                                     | Server check: calval-pds.cryosat.esa.int   | Nominal                      | Nominal                 |
| Processor Used:    | CryoSat Ocean Processor  | Product Software Check                     | Nominal                      | Nominal                 |
| Data Used:         | Geophysical Ocean Products (GOP)<br>L1B, L2 & P2P Science Data | Product Format Check                       | Nominal                      | Nominal                 |
| Data Used:         |  | 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 and 5.5 | See Section 6.5         |
|                    |  | Range, SWH & Backscatter Measurement Check | See Section 5.6              | See Section 6.6         |
|                    |  | Ocean Retracking Quality Check             | See Section 5.7              | See Section 6.7         |
|                    |  | QCC Error/ Warning Check                   | See Section 7.1 and 7.2      | See Section 7.1 and 7.2 |

2. Global Coverage

1. Overview

| Mission / Instru | iment News      |
|------------------|-----------------|
| 01-Aug-2020      | None            |
| 02-Aug-2020      | None            |
| 03-Aug-2020      | Nothing planned |





# 3. Instrument Configuration

SIRAL instrument(s) in use:

SIRAL - A

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

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). Number of products with errors: 0

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# 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 11b\_proc\_flag\_hr flag is currently set all L1B GOPR and GOPN products because the 11b\_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: 0

| 4.3 L1B Auxilary Data File Usage Check  |  |  |  |
|---|--|--|--|
| Each product is checked for missing Data Set Descriptors with respect to a pre-determined baseline and also to check the validity of Auxiliary Data Files is correct. |  |  |  |
| Number of products with errors: 0   |  |  |  |
| 4.4 L1B Auxiliary Correction Error Check  |  |  |  |
| CryoSat L1B data includes a correction error flag for each measurement record. The bit value of this flag indicates any problems when set.                            |  |  |  |

Number of products with errors:

### 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:

| Product   | Test Failed         | Description  |
|---|---------------------|--|
| CS_OFFL_SIR_GOPM1B_20200802T035838_20200802T040435_C001 | Power scaling error | There is an error in the scaling of the L1B waveform for one or more records |
| CS_OFFL_SIR_GOPM1B_20200802T055656_20200802T060529_C001 | Power scaling error | There is an error in the scaling of the L1B waveform for one or more records |

# 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.

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#### Number of products with errors:

| Product   | Test Failed  | Description  |
|---|--------------|--|
| CS_OFFL_SIR_GOPM1B_20200802T120501_20200802T120906_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPM1B_20200802T151935_20200802T153444_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPM1B_20200802T213905_20200802T221431_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20200802T041037_20200802T041246_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20200802T090054_20200802T090124_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20200802T090301_20200802T090334_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20200802T090340_20200802T090358_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20200802T121919_20200802T122328_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20200802T153552_20200802T153845_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20200802T153928_20200802T154126_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPN1B_20200802T222302_20200802T222354_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20200802T133808_20200802T133832_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20200802T153511_20200802T153551_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_GOPR1B_20200802T205247_20200802T205444_C001 | Loss of Echo | The tracking echo is missing for one or more records |

# 5. GOP Level 2 Data Quality Check

#### 5.1 L2 Product Format Check

Each product, retrieved and unpacked from the science server, is checked to ensure it consists of both an XML header file (.HDR) and a binary product file (.DBL). Number of products with errors: 0

# 5.2 L2 Product Header Analysis

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

#### Number of products with errors:

#### 5.3 L2 Auxiliary Data File Usage Check

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

Number of products with errors:

#### 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 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.

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Number of products with errors:

Description

| CS_OFFL_SIR_GOPM_2_20200802T054110_20200802T054209_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_GOPM_2_20200802T123124_20200802T123926_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPM_2_20200802T124046_20200802T130640_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPM_2_20200802T130906_20200802T131435_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPM_2_20200802T131441_20200802T131448_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPM_2_20200802T151935_20200802T153444_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records   |
| CS_OFFL_SIR_GOPM_2_20200802T222411_20200802T222607_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPM_2_20200802T222729_20200802T222746_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPM_2_20200802T223036_20200802T223039_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPM_2_20200802T223104_20200802T223145_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPM_2_20200802T223155_20200802T223206_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPM_2_20200802T223504_20200802T223757_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPM_2_20200802T223941_20200802T224214_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPM_2_20200802T224413_20200802T230029_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPM_2_20200802T230538_20200802T231047_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPN_2_20200802T000116_20200802T000456_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_20200802T013555_20200802T013829_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_20200802T023103_20200802T023222_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_20200802T031123_20200802T031711_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_20200802T041037_20200802T041246_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_20200802T045319_20200802T045455_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records   |
| CS_OFFL_SIR_GOPN_2_20200802T050347_20200802T050550_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records   |
| CS_OFFL_SIR_GOPN_2_20200802T054951_20200802T055437_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_20200802T064137_20200802T064404_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_20200802T073818_20200802T073847_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:<br>FES) and the Non-equilibrium Long Period Ocean Tide height for one or<br>more records  |
| CS_OFFL_SIR_GOPN_2_20200802T081234_20200802T081627_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<br>Topography height (solution 1), Total Geocentric Ocean Tide (GCT), Total<br>Geocentric Ocean Tide (FES) and the Non-Equilibrium Long Period Ocean<br>Tide for one or more records |
| CS_OFFL_SIR_GOPN_2_20200802T090301_20200802T090334_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records   |
| CS_OFFL_SIR_GOPN_2_20200802T090340_20200802T090358_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records   |
| CS_OFFL_SIR_GOPN_2_20200802T095220_20200802T095534_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_20200802T100049_20200802T100201_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records   |
| CS_OFFL_SIR_GOPN_2_20200802T112947_20200802T113408_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_20200802T113952_20200802T114113_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_20200802T121919_20200802T122328_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<br>Topography height (solution 1) and the Total Geocentric Ocean Tide<br>height (solution 1: GOT) for one or more records  |

| CS_OFFL_SIR_GOPN_2_20200802T130746_20200802T130906_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_20200802T131728_20200802T131916_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_20200802T140216_20200802T140232_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_20200802T140804_20200802T140853_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records   |
| CS_OFFL_SIR_GOPN_2_20200802T145534_20200802T145758_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the GPD Wet Tropospheric correction, the MSS<br>height (solution 1) and tidal corrections for one or more records   |
| CS_OFFL_SIR_GOPN_2_20200802T153928_20200802T154126_C001 | Mean Dynamic Topography (1), Total<br>Geocentric Ocean Tide (GOT)   | There is an error with the Mean Dynamic Topography (solution 1) and the<br>Total Geocentric Ocean Tide (solution 1: GOT) for one or more records   |
| CS_OFFL_SIR_GOPN_2_20200802T154135_20200802T154139_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_20200802T162540_20200802T162756_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records   |
| CS_OFFL_SIR_GOPN_2_20200802T163437_20200802T163902_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_20200802T171611_20200802T172003_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_20200802T180558_20200802T180831_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_20200802T181553_20200802T181736_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records   |
| CS_OFFL_SIR_GOPN_2_20200802T195453_20200802T195631_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records   |
| CS_OFFL_SIR_GOPN_2_20200802T212500_20200802T212618_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records   |
| CS_OFFL_SIR_GOPN_2_20200802T213150_20200802T213508_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_20200802T222302_20200802T222354_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_20200802T222607_20200802T222728_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPN_2_20200802T223039_20200802T223104_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_20200802T223145_20200802T223155_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_20200802T223207_20200802T223252_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_20200802T223804_20200802T223806_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPN_2_20200802T223932_20200802T223934_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPN_2_20200802T224214_20200802T224413_C001 | GPD Wet Tropospheric Correction   | There is an error with the GPD Wet Tropospheric correction for one or<br>more records  |
| CS_OFFL_SIR_GOPN_2_20200802T230422_20200802T230538_C001 | GPD Wet Tropospheric Correction,<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1)  | There is an error with the GPD Wet Tropospheric correction, the MSS<br>height (solution 1) and the Mean Dynamic Topography height (solution 1)<br>for one or more records  |
| CS_OFFL_SIR_GOPN_2_20200802T231047_20200802T231401_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<br>Topography height (solution 1), Total Geocentric Ocean Tide (GOT), Total<br>Geocentric Ocean Tide (FES) and the Non-Equilibrium Long Period Ocean<br>Tide for one or more records |
| CS_OFFL_SIR_GOPR_2_20200802T004623_20200802T005106_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_GOPR_2_20200802T005106_20200802T005225_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_GOPR_2_20200802T022412_20200802T022947_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_GOPR_2_20200802T022947_20200802T023103_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_GOPR_2_20200802T040624_20200802T040707_C001 | Mean Sea Surface (1)  | There is an error with the MSS height (solution 1) for one or more records   |
| CS_OFFL_SIR_GOPR_2_20200802T040707_20200802T041037_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_GOPR_2_20200802T054209_20200802T054231_C001 | Mean Dynamic Topography (1)   | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records   |
| CS_OFFL_SIR_GOPR_2_20200802T054231_20200802T054951_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_GOPR_2_20200802T072337_20200802T073023_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_20200802T085305_20200802T085442_C001 | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records  |
| CS_OFFL_SIR_GOPR_2_20200802T090358_20200802T091147_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_20200802T104213_20200802T105126_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_20200802T122329_20200802T123124_C001 | GPD Wet Tropospheric Correction,<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1) | There is an error with the GPD Wet Tropospheric correction, the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records       |
| CS_OFFL_SIR_GOPR_2_20200802T123926_20200802T124046_C001 | GPD Wet Tropospheric Correction  | There is an error with the GPD Wet Tropospheric correction for one or more records  |
| CS_OFFL_SIR_GOPR_2_20200802T130641_20200802T130746_C001 | GPD Wet Tropospheric Correction  | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPR_2_20200802T131435_20200802T131441_C001 | GPD Wet Tropospheric Correction  | There is an error with the GPD Wet Tropospheric correction for one or more records  |
| CS_OFFL_SIR_GOPR_2_20200802T140232_20200802T140804_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_20200802T154139_20200802T154839_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_20200802T172003_20200802T172515_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_20200802T185749_20200802T190537_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_20200802T203605_20200802T204335_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_20200802T205247_20200802T205444_C001 | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography (solution 1) for one<br>or more records  |
| CS_OFFL_SIR_GOPR_2_20200802T221431_20200802T222141_C001 | GPD Wet Tropospheric Correction,<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1) | There is an error with the GPD Wet Tropospheric correction, the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records       |
| CS_OFFL_SIR_GOPR_2_20200802T222141_20200802T222302_C001 | GPD Wet Tropospheric Correction,<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1) | There is an error with the GPD Wet Tropospheric correction, the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records       |
| CS_OFFL_SIR_GOPR_2_20200802T222354_20200802T222411_C001 | GPD Wet Tropospheric Correction  | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPR_2_20200802T222747_20200802T223036_C001 | GPD Wet Tropospheric Correction  | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPR_2_20200802T223252_20200802T223504_C001 | GPD Wet Tropospheric Correction  | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPR_2_20200802T230029_20200802T230422_C001 | GPD Wet Tropospheric Correction  | There is an error with the GPD Wet Tropospheric correction for one or<br>more records   |
| CS_OFFL_SIR_GOPR_2_20200802T235320_20200803T000040_C001 | GPD Wet Tropospheric Correction,<br>Mean Sea Surface (1), Mean Dynamic<br>Topography (1) | There is an error with the GPD Wet Tropospheric correction, the MSS<br>height (solution 1) and the Mean Dynamic Topography height (solution 1)<br>for one or more records |
|   |  |   |

# 5.5 L2 Measurement Confidence Data Check

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

 Number of products with errors:
 2

| Product   | Test Failed         | Description   |
|---|---------------------|---|
| CS_OFFL_SIR_GOPM_2_20200802T035838_20200802T040435_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |
| CS_OFFL_SIR_GOPM_2_20200802T055656_20200802T060529_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |

# 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.

87

#### Number of products with errors:

| Product   | Test Failed | Description  |
|---|-------------|--|
| CS_OFFL_SIR_GOPM_2_20200802T000834_20200802T003433_C001 |             | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T003613_20200802T004454_C001 |             | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T005733_20200802T010423_C001 |             | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |

| CS_OFFL_SIR_GOPM_2_20200802T010437_20200802T012853_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
|---|--|--|
| CS_OFFL_SIR_GOPM_2_20200802T013829_20200802T014023_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T014250_20200802T014513_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T014751_20200802T015157_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T020354_20200802T021424_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T023223_20200802T023623_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T023745_20200802T025319_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T030214_20200802T031031_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T031711_20200802T031941_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_20200802T032006_20200802T032432_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T032721_20200802T034116_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T034256_20200802T034811_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T042255_20200802T042656_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T042818_20200802T045118_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T045455_20200802T050347_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T050658_20200802T052947_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T053619_20200802T053933_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_20200802T060730_20200802T063036_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T063424_20200802T063605_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_20200802T063711_20200802T064137_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T064628_20200802T071300_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T071819_20200802T072337_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T073848_20200802T074131_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T074234_20200802T080852_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T081627_20200802T082216_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_20200802T082507_20200802T083918_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |

| CS_OFFL_SIR_GOPM_2_20200802T090124_20200802T090250_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
|---|--|--|
| CS_OFFL_SIR_GOPM_2_20200802T091452_20200802T094818_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T095534_20200802T100049_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T100733_20200802T101102_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T103804_20200802T104212_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T105126_20200802T110338_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T110624_20200802T112734_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T113408_20200802T113535_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T113543_20200802T113951_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T114453_20200802T115459_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T115647_20200802T120404_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T120501_20200802T120906_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Attimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Attimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T121618_20200802T121649_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Attimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Attimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T123124_20200802T123926_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T124046_20200802T130640_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T130906_20200802T131435_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T131454_20200802T131728_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T132538_20200802T133808_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T133832_20200802T135554_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T135936_20200802T140132_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T141719_20200802T142859_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Attimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Attimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T143102_20200802T144550_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Attimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Attimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T144835_20200802T145333_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_20200802T145412_20200802T145534_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T150242_20200802T151040_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T151935_20200802T153444_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |

| CS_OFFL_SIR_GOPM_2_20200802T155902_20200802T160212_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
|---|--|--|
| CS_OFFL_SIR_GOPM_2_20200802T161028_20200802T162431_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T162756_20200802T163246_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T163327_20200802T163436_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T164040_20200802T171343_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T174051_20200802T180142_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T180229_20200802T180319_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T180831_20200802T181202_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T181225_20200802T181553_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T181916_20200802T184548_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T191640_20200802T194323_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T194619_20200802T195117_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T195918_20200802T203253_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T204452_20200802T205136_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T210845_20200802T211506_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T212128_20200802T212224_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T212618_20200802T213150_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T213905_20200802T221431_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T222411_20200802T222607_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T223504_20200802T223757_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T224413_20200802T230029_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPM_2_20200802T230538_20200802T231047_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPM_2_20200802T231744_20200802T235320_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPN_2_20200802T103459_20200802T103512_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPN_2_20200802T181219_20200802T181225_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPR_2_20200802T005504_20200802T005529_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |

| CS_OFFL_SIR_GOPR_2_20200802T021424_20200802T021608_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
|---|--|--|
| CS_OFFL_SIR_GOPR_2_20200802T035807_20200802T035838_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPR_2_20200802T041617_20200802T041702_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPR_2_20200802T052948_20200802T053022_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set<br>for one or more records.   |
| CS_OFFL_SIR_GOPR_2_20200802T121846_20200802T121919_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T231401_20200802T231744_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>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.

85

Number of products with errors:

| Product   | Test Failed   | Description  |
|---|---|--|
| CS_OFFL_SIR_GOPN_2_20200802T000116_20200802T000456_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPN_2_20200802T005225_20200802T005310_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPN_2_20200802T013555_20200802T013829_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPN_2_20200802T021608_20200802T021809_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.   |
| CS_OFFL_SIR_GOPN_2_20200802T023623_20200802T023744_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.   |
| CS_OFFL_SIR_GOPN_2_20200802T031123_20200802T031711_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPN_2_20200802T032432_20200802T032611_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.   |
| CS_OFFL_SIR_GOPN_2_20200802T040543_20200802T040624_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPN_2_20200802T041037_20200802T041246_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPN_2_20200802T041348_20200802T041617_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.   |
| CS_OFFL_SIR_GOPN_2_20200802T042656_20200802T042818_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPN_2_20200802T045319_20200802T045455_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.   |
| CS_OFFL_SIR_GOPN_2_20200802T053934_20200802T054110_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.   |
| CS_OFFL_SIR_GOPN_2_20200802T054951_20200802T055437_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPN_2_20200802T063605_20200802T063711_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.   |
| CS_OFFL_SIR_GOPN_2_20200802T064137_20200802T064404_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPN_2_20200802T082217_20200802T082342_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |

| CHU, LIN, COME, 2. 202000001110102. 202000001110102. COM     Deep Antern Intege, SUN, SUN, SUN, SUN, SUN, SUN, SUN, SUN   | CS_OFFL_SIR_GOPN_2_20200802T090340_20200802T090358_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. |
|---|---|---|---|
| GB 04FL BR 00FL 2 820000T110FE 200000T12238       D01       D0000 Minute Play During Play Bar   | CS_OFFL_SIR_GOPN_2_20200802T112947_20200802T113408_C001 | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality | and the OCOG Altimeter Range and Backscatter Quality Flags have been                |
| In CPA, Ser COPI, 2 20000001101919, 200000011101010, 2000000111919, 200000011101010, 20000001101919, 200000011101010, 20000001101919, 200000011101010, 200000011101010, 200000011101010, 200000011101010, 200000011101010, 200000011101010, 200000011101010, 200000011101010, 20000001101010, 20000001101010, 20000001110100, 20000001100000, 20000000000   | CS_OFFL_SIR_GOPN_2_20200802T113952_20200802T114113_C001 | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality | and the OCOG Altimeter Range and Backscatter Quality Flags have been                |
| CB 0FH, BR 0DFH 2 800000000000000000000000000000000000  | CS_OFFL_SIR_GOPN_2_20200802T121919_20200802T122328_C001 | <b>.</b> ,  |   |
| Or U.Y. Sim Colm. 2 address: Baddeep: 1991E 001     DOOD Bioscontry Carry     Intern metering.       CS. OFTL. SIM. COPNL 2. 00008271149551, 0000827149552, 0001     DOOD Bioscontry Carry     The DOOD Brane and Badeestite' Dasity Flags have been set for ore arrow new result.       CS. OFTL. SIM. COPNL 2. 0000827149551, 0000827149756, 0001     DOOD Bioscontry Carry     The DOOD Brane and Badeestite' Dasity Flags have been set for ore arrow new result.       CS. OFTL. SIM. COPNL 2. 0000827149756, 0001     DOOR Afterest Flags Dasity, Flags.     The DOOD Brane and Badeestite' Dasity Flags have been set for ore arrow new result.       CS. OFTL. SIM. COPNL 2. 0000827149756, 0001     DOOR Afterest Flags Dasity, Flags.     The Doon Afterest Flags, SSMA, SWH arro Stockadelle Casity Flags.       CS. OFTL. SIM. COPNL 2. 0000827119166, 0001     DOOR Afterest Flags, SMA, SWH arro Stockadelle Casity Flags.     The Doon Afterest Flags, SSMA, SWH arro Stockadelle Casity Flags.       CS. OFTL. SIM. COPNL 2. 0000827119166, 0001     DOOC Afterest Flags, Dasity, Flags.     The Dood Afterest Flags, SSMA, SWH arro Stockadelle Casity Flags.       CS. OFTL. SIM. COPNL 2. 0000827119166, 0001     DOOC Afterest Flags, Dasity, Flags.     The Dood Afterest Flags, SSMA, SWH arro Stockadelle Casity Flags.       CS. OFTL. SIM. COPNL 2. 0000827119165, 0000827119165, 0001     DOOC Afterest Flags, Dasity, Flags.     The Dooc Afterest Flags, SSMA, SWH arro Stockadelle Casity Flags.       CS. OFTL. SIM. COPNL 2. 0000827119165, 0000827119165, 0001     DOOC Afterest Flags, SSMA, SWH arro Stockadelle Casity Flags.       CS. OFTL. SIM. COPNL 2. 0000827  | CS_OFFL_SIR_GOPN_2_20200802T131728_20200802T131916_C001 | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality | and the OCOG Altimeter Range and Backscatter Quality Flags have been                |
| Corte, Sint Corte,  | CS_OFFL_SIR_GOPN_2_20200802T135555_20200802T135718_C001 |   |   |
| DOCG Alteret Range Call Sectored Call Processor Doce Call Processor DOCG Alteret Range Call Sectored Call Processor Doce Call Processor DOCG Alteret Range Call Sectored Call Processor Doce Call Processor DOCG Alteret Range Call Sectored Call Processor Doce Call Processor D   | CS_OFFL_SIR_GOPN_2_20200802T140804_20200802T140853_C001 |   |   |
| CS_OFTL_SRF_QOPN_2_20200802114534_20208021145758_0001 med_Sameter_Databaseter_Constructions and the second construction of the  | CS_OFFL_SIR_GOPN_2_20200802T141602_20200802T141719_C001 |   |   |
| GS_OFFL_SIR_GOPN_2_8000802T15019_000082T150193_C001         and Baskastate Outly PLM. COCO<br>NEW Page and Baskastate Outly<br>PLM.         The COCO Range and Baskastate Outly<br>PLM.         The COCO Range and Baskastate Outly<br>PLM.           GS_OFFL_SIR_GOPN_2_8000802T151617_2000802T151935_C001         COCO Almeter Range Cauliy PLM.<br>COCO Baskastate Outly PLM.         The COCO Range and Baskastate Outly<br>PLM.         The COCO Range and Baskastate Outly<br>PLM.           GS_OFFL_SIR_GOPN_2_8000802T150582_0000802T159345_C001         COCO Almeter Range Cauliy PLM.<br>PLM.         The COCO Range and Baskastate Outly PLM.<br>PLM.         The COCO Range and Baskastate Outly PLM.<br>PLM PLM PLM PLM.         The COCO Range and Baskastate Outly PLM.<br>PLM PLM PLM PLM PLM.         The COCO Range and Baskastate Outly PLM.<br>PLM PLM PLM PLM PLM PLM PLM PLM PLM PLM  | CS_OFFL_SIR_GOPN_2_20200802T145534_20200802T145758_C001 | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality | and the OCOG Altimeter Range and Backscatter Quality Flags have been                |
| CCOPR_SPL_SCH_C_200008021161817_0000802116585_0001         CCOG Backscatter Quality         more records.           CS_OFR_SIR_COPN_2_20000802116585_0001         CCOG Admeter Range Quality PLBM.         The OCOG Range and Backscatter Quality Flags have been set for one or more records.           CS_OFR_SIR_COPN_2_20000802116101_20008021116585_0001         CCCG Admeter Range Quality PLBM.         The OCOG Range and Backscatter Quality Flags have been set for one or more records.           CS_OFR_SIR_COPN_2_20000802116101_20008021118730_CO01         CCCG Admeter Range Quality PLBM.         The OCOG Range and Backscatter Quality Flags have been set for one or more records.           CS_OFR_SIR_COPN_2_20000802116153_20008021161730_CO01         CCCG Admeter Range Quality PLBM.         The OCOG Range and Backscatter Quality Flags have been set for one or more records.           CS_OFR_SIR_COPN_2_20000802116153_20008021161730_CO01         CCCG Admeter Range Quality PLBM.         The OCOG Range and Backscatter Quality Flags have been set for one or more records.           CS_OFR_SIR_COPN_2_20000802116153_20008021161730_CO01         CCCG Admeter Range Quality PLBM.         The OCOG Range and Backscatter Quality Flags have been set for one or more records.           CS_OFR_SIR_COPN_2_200008021191457_CO01         CCCG Admeter Range Quality PLBM.         The OCOG Range and Backscatter Quality Flags have been set for one or more records.           CS_OFR_SIR_COPN_2_200008021191457_CO01         CCCG Admeter Range Quality PLBM.         The OCOG Range and Backscatter Quality Flags have been set for one or more records. <td< td=""><td>CS_OFFL_SIR_GOPN_2_20200802T150109_20200802T150159_C001</td><td>and Backscatter Quality PLRM, OCOG<br/>Altimeter Range and Backscatter Quality</td><td>and the OCOG Altimeter Range and Backscatter Quality Flags have been</td></td<>  | CS_OFFL_SIR_GOPN_2_20200802T150109_20200802T150159_C001 | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality | and the OCOG Altimeter Range and Backscatter Quality Flags have been                |
| Displan         Displan <t< td=""><td>CS_OFFL_SIR_GOPN_2_20200802T151617_20200802T151935_C001</td><td></td><td></td></t<>   | CS_OFFL_SIR_GOPN_2_20200802T151617_20200802T151935_C001 |   |   |
| GS_OFFL_SIR_GOPN_2_20206802T163437_20206802T163582_C001       and Backscatter Quality PLRM, OCCG       The OCCGA Rame and Backscatter Quality PLRM, OCCG         GS_OFFL_SIR_GOPN_2_20206802T171611_20020602T172003_C001       OCCA Nameter Range Quality PLRM, OCCG       The OCCGA Rame and Backscatter Quality PLRM, OCCG         GS_OFFL_SIR_GOPN_2_20206802T181553_20200602T181756_C001       OCCA Nameter Range SSIA, SWH and Backscatter Quality FLRM, OCCG       The OCCGA Rame and Backscatter Quality FLRM, OCCG         GS_OFFL_SIR_GOPN_2_20206802T190537_20200602T191755_C001       OCCA Nameter Range, SSIA, SWH and Backscatter Quality FLRM, OCCG       The OCCGA Rame and Backscatter Quality FLRM, OCCG         GS_OFFL_SIR_GOPN_2_20206802T1910537_20200602T190544_C001       Mameter Range and Backscatter Quality FLRM, OCCG       The OCCGA Rame and Backscatter Quality FLRM, OCCG         GS_OFFL_SIR_GOPN_2_20206802T191353_20200802T191553_C001       OCCGA Alterneter Range Quality FLRM, OCCG       The OCCGA Rame and Backscatter Quality FLRM, The OCCGA Rame and B   | CS_OFFL_SIR_GOPN_2_20200802T153552_20200802T153845_C001 |   |   |
| DS_OPEL_SIR_GOPN_2_20200802T191553_20200802T191553_00200802T191553_00200802T191553_00200802T191553_00200802T191553_00200802T191553_00200802T190544_001         OCCOB Backscatter Quality         Imme mecords.           CS_OFFL_SIR_GOPN_2_20200802T190537_20200802T190544_001         Cosen Attimeter Range, SSHA, SWH<br>Manager Range, SSHA, SWH<br>PLEM         Cosen Attimeter Range, SSHA, SWH<br>and the OCCA Ratheret Range, SSHA, SWH and Backscatter Quality Flags have been<br>after one or more records.           CS_OFFL_SIR_GOPN_2_20200802T190544_001         Cosen Attimeter Range, SSHA, SWH<br>Manager Range and Backscatter Quality Flags have been<br>after one or more records.         The OCCOR Range and Backscatter Quality Flags have been after one or<br>more records.           CS_OFFL_SIR_GOPN_2_20200802T191531_00200802T191533_001         COCC0 Attimeter Range Quality PLEM.         The OCCOR Range and Backscatter Quality Flags have been aft for one or<br>more records.           CS_OFFL_SIR_GOPN_2_20200802T191453_00200802T191457_C001         COCC0 Attimeter Range Quality PLEM.         The OCCOR Range and Backscatter Quality Flags have been set for one or<br>more records.           CS_OFFL_SIR_GOPN_2_20200802T194450_0200802T194619_C001         Cocce Attimeter Range, SSHA, SWH<br>and Backscatter Quality Flags have been set for one or<br>more records.         The OCCOR Attimeter Range, SSHA, SWH<br>and Backscatter Quality Flags have been set for one or<br>more records.           CS_OFFL_SIR_GOPN_2_20200802T1945451_C001         OCCOR Attimeter Range Quality PLEM.         The OCCOR Attimeter Range, SSHA, SWH<br>and Backscatter Quality Flags ha  | CS_OFFL_SIR_GOPN_2_20200802T163437_20200802T163902_C001 | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality | and the OCOG Altimeter Range and Backscatter Quality Flags have been                |
| GS_OFFL_SIR_GOPN_2_20200802T181533_20200802T181736_001       and Backscatter Quality PLRM_COCO<br>Attemeter Range and Backscatter Quality PLRM_COCO<br>Attemeter R | CS_OFFL_SIR_GOPN_2_20200802T171611_20200802T172003_C001 |   |   |
| CS_OFFL_SIR_GOPN_2_20200802T190537_20200802T190544_C001       All Backscatter Quality PLRM, COURT       Ind Ocean Allmeter Range All Backscatter Quality PLRM, COURT         CS_OFFL_SIR_GOPN_2_20200802T191351_20200802T191353_C001       OCCG Allmeter Range Quality PLRM, COCG Backscatter Qu  | CS_OFFL_SIR_GOPN_2_20200802T181553_20200802T181736_C001 | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality | and the OCOG Altimeter Range and Backscatter Quality Flags have been                |
| OCOG Backscatter Quality       more records.         OCOG Backscatter Quality       more records.         OS_OFFL_SIR_GOPN_2_20200802T191450_20200802T191457_C001       OCOG Altimeter Range Quality PLRM, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         OS_OFFL_SIR_GOPN_2_20200802T194450_20200802T194619_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         OS_OFFL_SIR_GOPN_2_20200802T195453_20200802T195631_C001       Mitmeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.       The OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.       The OCOG Range and Backscatter Quality Flags have been set for one or more records.         OCOG Backscatter Quality Flags have been set for one or more records.       The OCOG Range and Backscatter Quality Flags have been set for one or more records.         OCOG Altimeter Range Quality FLM, OCOG Altimeter Range Quality FLM, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.         OCOG Altimeter Range Quality FLM, OCOG Altimeter Range Albackscatter Quality Flags have been set for one or more records.         OCOG Altimeter Range Quality FLM, OCOG Altimeter Range Albackscatter Quality Flags have been set for one or more records.         OCOG Altimeter Ra   | CS_OFFL_SIR_GOPN_2_20200802T190537_20200802T190544_C001 | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality | and the OCOG Altimeter Range and Backscatter Quality Flags have been                |
| CS_OFFL_SIR_GOPN_2_20200802T194450_20200802T194619_C001       OCOG Backscatter Quality       more records.         CS_OFFL_SIR_GOPN_2_20200802T194450_20200802T194619_C001       Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, COCG<br>Altimeter Range and Backscatter Quality PLRM, COCG<br>Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records.         CS_OFFL_SIR_GOPN_2_20200802T195453_20200802T195631_C001       Ocean Altimeter Range and Backscatter Quality Flags<br>and Backscatter Quality PLRM, COCG<br>Altimeter Range and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPN_2_20200802T205909_20200802T210014_C001       OCOG Altimeter Range Quality PLRM,<br>COCG Altimeter Range and Backscatter Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_20200802T210315_20200802T210014_C001       OCOG Altimeter Range Quality PLRM,<br>COCG Backscatter Quality PLRM,<br>COCG Backscatter Quality PLRM,<br>COCG Backscatter Quality PLRM,<br>COCG Backscatter Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_20200802T210315_20200802T210454_C001       OCOG Altimeter Range Quality PLRM,<br>COCG Backscatter Quality PLRM,<br>COCG Backscatter Quality PLRM,<br>COCG Backscatter Quality PLRM,<br>COCG Altimeter Range and Backscatter Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_20200802T210510_20200802T210544_C001       OCOG Altimeter Range Quality PLRM,<br>OCOG Altimeter Range and Backscatter Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_20200802T213508_C001       Ocean Altimeter Range and Backscatter Quality Fla  | CS_OFFL_SIR_GOPN_2_20200802T191351_20200802T191353_C001 |   |   |
| CS_OFFL_SIR_GOPN_2_20200802T194450_20200802T194619_C001       and Backscatter Quality PLRM_OCOG<br>Altimeter Range Quality PLRM_OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_20200802T2105909_20200802T210014_C001       OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality       The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_20200802T210315_20200802T210454_C001       OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality       The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_20200802T210510_20200802T210844_C001       OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality       The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_20200802T213150_20200802T213508_C001       Ocoan Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_20200802T222607_20200802T222728_C001       Ococan Altimeter Range, SSHA, SWH<br>and Backscatter Quality  | CS_OFFL_SIR_GOPN_2_20200802T191353_20200802T191457_C001 |   |   |
| CS_OFFL_SIR_GOPN_2_20200802T195453_20200802T195631_C001       and Backscatter Quality PLRM, COCG<br>Attimeter Range and Backscatter Quality PLRM,<br>CCGG Backscatter Quality PLRM,       The OCCGA Itimeter Range and Backscatter Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_20200802T205909_20200802T210014_C001       CCCG Attimeter Range Quality PLRM,<br>OCCG Attimeter Range Quality PLRM,<br>OCCG Attimeter Range Quality PLRM,<br>OCCG Attimeter Range Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_20200802T210315_20200802T210454_C001       CCCG Attimeter Range Quality PLRM,<br>OCCG Attimeter Range Quality PLRM,<br>OCCG Backscatter Quality       The OCCG Range and Backscatter Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_20200802T210510_20200802T210644_C001       CCCG Attimeter Range Quality PLRM,<br>OCCG Backscatter Quality PLRM,<br>OCCG Backscatter Quality PLRM,<br>OCCG Backscatter Quality PLRM,<br>OCCG Attimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM,<br>OCCG Attimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_20200802T213508_C001       Ceean Attimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCCG<br>Attimeter Range and Backscatter Quality Flags have been<br>set for one or more records.       The OCCGA Attimeter Range, SSHA, SWH<br>and Backscatter Quality Flags have been<br>set for one or more records.         CS_OFFL_SIR_GOPN_2_20200802T222607_20200802T222728_C001       Ceean Attimeter Range, SSHA, SWH<br>and Backscatter Quality Flags have been<br>set for one or more records.       The OCCGA Attimeter Range and Backscatter Quality Flags<br>had  | CS_OFFL_SIR_GOPN_2_20200802T194450_20200802T194619_C001 | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality | and the OCOG Altimeter Range and Backscatter Quality Flags have been                |
| CS_OFFL_SIR_GOPN_2_2020080212008021210014_C001       OCOG Backscatter Quality       more records.         CS_OFFL_SIR_GOPN_2_20200802T210315_20200802T210454_C001       OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality       The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_20200802T210510_20200802T210844_C001       OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality       The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_20200802T210510_20200802T213508_C001       Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality       The Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality       The Ocean Altimeter Range and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality       The Ocean Altimeter Range and Backscatter Quality         CS_OFFL_SIR_GOPN_2_20200802T223607_20200802T222728_C001       Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality       The Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality       The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality       Flags have been<br>set for one or more records.         CS_OFFL_SIR_GOPN_2_20200802T222607_20200802T222728_C001       OCOG Altimeter Range Quality PLRM,<br>OCOG Altimeter Range Quality       The Ocean Altimeter Range and Backscatter Quality       Flags have been<br>set for one or more records.         CS_OFFL_SIR_GOPN_2_20200802T224214_20200802T224214_20200802T224214_20200802T224214_20200802T224214_20200802T224214_20200802T224214_20200802T224214_20200802T224214_20200802T224414_20200802T224414_20200802T224414_20200802T224414_20200802T224414  | CS_OFFL_SIR_GOPN_2_20200802T195453_20200802T195631_C001 | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality | and the OCOG Altimeter Range and Backscatter Quality Flags have been                |
| CS_OFFL_SIR_GOPN_2_202008021210315_202008021210434_C001       OCOG Backscatter Quality       more records.         CS_OFFL_SIR_GOPN_2_202008021210510_202008021210844_C001       OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality       The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.         CS_OFFL_SIR_GOPN_2_202008021213508_C001       Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Attimeter Range and Backscatter Quality Flags<br>and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records.         CS_OFFL_SIR_GOPN_2_202008027224214_202008027224413_C001       OCOG Altimeter Range Quality PLRM,<br>OCOG Altimeter Range Quality PLRM,       The OCOG Range and Backscatter Quality Flags have been set for one or<br>nore records.  | CS_OFFL_SIR_GOPN_2_20200802T205909_20200802T210014_C001 |   |   |
| CS_OFFL_SIR_GOPN_2_202008021210510_202008021210844_C001       OCOG Backscatter Quality       more records.         CS_OFFL_SIR_GOPN_2_202008021213500_202008021213508_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality FLRM, OCOG Altimeter Range and Backscatter Quality FLRM       The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPN_2_202008021222607_202008021222728_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been at timeter Range and Backscatter Quality FLRM, OCOG Altimeter Range and Backscatter Quality FLRM, OCOG Altimeter Range and Backscatter Quality Flags have been at for one or more records.         CS_OFFL_SIR_GOPN_2_202008021222607_202008021222728_C001       OCOG Altimeter Range Quality PLRM, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.         CS_OFFL_SIR_GOPN_2_2020080212224214_202008021222413_C001       OCOG Altimeter Range Quality PLRM, The OCOG Range and Backscatter Quality Flags have been set for one or more records.  | CS_OFFL_SIR_GOPN_2_20200802T210315_20200802T210454_C001 |   |   |
| CS_OFFL_SIR_GOPN_2_20200802T213150_20200802T213508_C001       and Backscatter Quality PLRM, OCOG       Attimeter Range and Backscatter Quality       and the OCGA Attimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCGA Attimeter Range and Backscatter Quality         CS_OFFL_SIR_GOPN_2_20200802T222607_20200802T222728_C001       and Backscatter Quality PLRM, OCOG       The OCGan Attimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCGA Attimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCGA Attimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCGA Attimeter Range and Backscatter Quality Flags and the OCGA Attimeter Range and Backscatter Quality Flags have been at the OCGA Attimeter Range and Backscatter Quality Flags have been at the OCGA Attimeter Range and Backscatter Quality Flags have been at the OCGA Attimeter Range and Backscatter Quality Flags have been at the OCGA Attimeter Range and Backscatter Quality Flags have been at the OCGA Attimeter Range and Backscatter Quality Flags have been at the OCGA Attimeter Range Quality PLRM,         CS_OFFL_SIB_GOPN_2_20200802T2224214_20200802T222413_C001       OCGA Attimeter Range Quality PLRM,       The OCGA Range and Backscatter Quality Flags have been set for one or   | CS_OFFL_SIR_GOPN_2_20200802T210510_20200802T210844_C001 |   |   |
| CS_OFFL_SIR_GOPN_2_20200802T222607_20200802T222728_C001 and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality Flags have been<br>PLRM OCOG Altimeter Range Quality PLRM, The OCOG Range and Backscatter Quality Flags have been set for one or  | CS_OFFL_SIR_GOPN_2_20200802T213150_20200802T213508_C001 | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality | and the OCOG Altimeter Range and Backscatter Quality Flags have been                |
|   | CS_OFFL_SIR_GOPN_2_20200802T222607_20200802T222728_C001 | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality | and the OCOG Altimeter Range and Backscatter Quality Flags have been                |
|   | CS_OFFL_SIR_GOPN_2_20200802T224214_20200802T224413_C001 |   |   |

|   | Ocean Altimeter Range, SSHA, SWH  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags   |
|---|---|--|
| CS_OFFL_SIR_GOPN_2_20200802T231047_20200802T231401_C001 | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM<br>Ocean Altimeter Range, SSHA, SWH | and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_GOPR_2_20200802T000456_20200802T000546_C001 | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM                                     | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T000555_20200802T000834_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T004454_20200802T004605_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T012854_20200802T013555_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Attimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Attimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T022412_20200802T022947_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T025319_20200802T025541_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.   |
| CS_OFFL_SIR_GOPR_2_20200802T030140_20200802T030214_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.   |
| CS_OFFL_SIR_GOPR_2_20200802T032612_20200802T032721_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T034811_20200802T035005_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T041617_20200802T041702_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_20200802T054209_20200802T054231_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_20200802T063037_20200802T063255_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T064405_20200802T064628_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T082342_20200802T082507_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T085802_20200802T085817_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.   |
| CS_OFFL_SIR_GOPR_2_20200802T094818_20200802T095220_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T100201_20200802T100449_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T101102_20200802T101734_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.   |
| CS_OFFL_SIR_GOPR_2_20200802T112734_20200802T112946_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T114113_20200802T114452_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T130641_20200802T130746_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T131916_20200802T132538_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T140853_20200802T140951_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.   |
| CS_OFFL_SIR_GOPR_2_20200802T151041_20200802T151101_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_20200802T153444_20200802T153511_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_20200802T160212_20200802T161027_C001  | OCOG Backscatter Quality<br>Ocean Altimeter Range, SSHA, SWH  | more records.  |
|--|---|--|
| CS_OFFL_SIR_GOPR_2_20200802T181736_20200802T181915_C001  | and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM                                     | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T185749_20200802T190537_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T190545_20200802T190819_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_20200802T194323_20200802T194450_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T195631_20200802T195918_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T203414_20200802T203457_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_20200802T205247_20200802T205444_C001  | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or<br>more records.   |
| CS_OFFL_SIR_GOPR_2_20200802T212224_20200802T212500_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T213508_20200802T213905_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T221431_20200802T222141_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T222747_20200802T223036_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_20200802T223252_20200802T223504_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_20200802T230029_20200802T230422_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T231401_20200802T231744_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_GOPR_2_20200802T235320_20200803T000040_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<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>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, v                                  | which are summarised below.   |  |
| > 1Hz and 1Hz Ocean SSHA Quality Flags: These flags are currently set for p                                  | products over sea ice, which is to be expected  | ſ.   |
| Number of products with errors: 199  |   |  |
| 5.8 L2 Ocean Retracking Quality Check  |   |  |
|  |   |  |
| L2 Retracking Flags (20Hz)   |   |  |
| L2 Hetracking Flags (20H2)<br>CryoSat L2 data includes an ocean retracking quality flag for each 20-Hz measu | rement record. The bit value of this flag indica  | ates any problems when set.  |
|  | -   |  |
| CryoSat L2 data includes an ocean retracking quality flag for each 20-Hz measu                               | -   |  |

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.

149

0

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: 0

#### 6.3 P2P Auxiliary Data File Usage Check

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

Number of products with errors:

### 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).

0

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.

> Altimetric Wind Speed Error: The error value is currently set for products over land and sea ice, but this is to be expected.

28

#### Number of products with errors:

| Product  | Test Failed  | Description  |
|--|--|--|
| CS_OFFL_SIR_GOP_2_20200802T000043_20200802T005019_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_GOP_2_20200802T005019_20200802T013958_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_GOP_220200802T013958_20200802T022934_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_GOP_220200802T022934_20200802T031912_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_GOP_220200802T031912_20200802T040849_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_GOP_220200802T040849_20200802T045827_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_GOP_220200802T045827_20200802T054803_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_GOP_2_20200802T054803_20200802T063742_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_GOP_2_20200802T063742_20200802T072718_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_20200802T072718_20200802T081657_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 | I nere is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1), the Total Geocentric Ocean Tide height<br>(solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height<br>for one or more records |
| CS_OFFL_SIR_GOP_2_20200802T081657_20200802T090633_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_20200802T090633_20200802T095611_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_GOP_2_20200802T095611_20200802T104547_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_GOP_2_20200802T104547_20200802T113526_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_GOP_2_20200802T113526_20200802T122502_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<br>Topography height (solution 1) and the Total Geocentric Ocean Tide<br>height (solution 1: GOT) for one or more records  |
| CS_OFFL_SIR_GOP_2_20200802T131441_20200802T140417_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_20200802T140417_20200802T145355_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_20200802T145355_20200802T154331_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<br>Topography height (solution 1) and the Total Geocentric Ocean Tide<br>height (solution 1: GOT) for one or more records  |
| CS_OFFL_SIR_GOP_2_20200802T154331_20200802T163310_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_20200802T163310_20200802T172246_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_GOP_2_20200802T172246_20200802T181225_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_20200802T181225_20200802T190201_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_20200802T190201_20200802T195140_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_20200802T195140_20200802T204116_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_GOP_2_20200802T204116_20200802T213055_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_20200802T213055_20200802T222030_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_20200802T231009_20200802T235945_C001 | Mean Sea Surrace (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES) Non-Fauilibrium Long Period | Inere is an error with the MSS height (solution 1) and the Mean Lynamic<br>Topography height (solution 1), the Total Geocentric Ocean Tide height<br>(solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height<br>for one or more records  |

Mean Sea Surface (1), Mean Dynamic Topography (1)

| 6.5 P2P Measurement Confidence                  | e Data Check                     |                                     |  |
|---|----------------------------------|-------------------------------------|--|
| CryoSat P2P data includes a measurement confi   | idence flag for each 20-Hz me    | easurement record. The bit value of | this flag indicates any problems when set.                                 |
| Number of products with errors:                 | 2                                |                                     |  |
| Product   |                                  | Test Failed                         | Description  |
| CS_OFFL_SIR_GOP_2_20200802T031912_20            | 0200802T040849_C001              | Power scaling error                 | There is an error in the scaling of the L2 waveform for one or more record |
| CS_OFFL_SIR_GOP_220200802T054803_20             | 0200802T063742_C001              | Power scaling error                 | There is an error in the scaling of the L2 waveform for one or more record |
| 6.6 P2P Measurement Quality Fla                 | ag Check                         |                                     |  |
| P2P Quality Flags (20Hz)                        |                                  |                                     |  |
| CryoSat P2P data includes Quality Flags for eac | h 20 Hz, 20 Hz PLRM and 1 I      | Hz measurement record, copied fro   | m the corresponding L2 products.   |
| Since the P2P Quality Flags are copied direct   | tly from the L2 Quality Flag     | s, please see Section 5.6 for the t | full list of products affected.  |
| Number of products with errors:                 | 27                               |                                     |  |
| P2P Quality Flags (20Hz PLRM)                   |                                  |                                     |  |
| Since the P2P Quality Flags are copied direct   | tly from the L2 Quality Flag     | s, please see Section 5.6 for the f | full list of products affected.  |
| Number of products with errors:                 | 27                               |                                     |  |
| P2P Quality Flags (1 Hz & 1Hz PLRM              | И)                               |                                     |  |
| Since the P2P Quality Flags are copied direct   | tly from the L2 Quality Flag     | s, please see Section 5.6 for the f | full list of products affected.  |
| Number of products with errors:                 | 28                               |                                     |  |
| 6.8 P2P Ocean Retracking Qualit                 | ty Check                         |                                     |  |
| <b>P2P Retracking Flags (20Hz)</b>              | 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 f    |                                  |                                     |  |
| Number of products with errors:                 | 26                               | ·····                               |  |
| P2P Retracking Flags PLRM                       |                                  |                                     |  |
| CryoSat L2 data includes an ocean retracking qu | ality flag for each 20-Hz PLR    | M measurement record. The bit val   | ue of this flag indicates any problems when set.                           |
| Ocean Retracking Quality Flag (PLRM): This f    | lag is currently set for produc  | ts GOPR and GOPN products over      | sea ice, but this is to be expected.                                       |
| Number of products with errors:                 | 28                               |                                     |  |

7. GOP QCC Report Analysis

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

| Product type | No. Products | No. QCC Reports | No. Valid | No. Warnings | No. Errors |
|--------------|--------------|-----------------|-----------|--------------|------------|
| SIR_GOPM1B   | 153          | 153             | 5         | 148          | 0          |
| SIR_GOPR1B   | 114          | 114             | 0         | 114          | 0          |
| SIR_GOPN1B   | 111          | 111             | 1         | 110          | 0          |
| SIR_GOPM_2   | 153          | 153             | 95        | 58           | 0          |
| SIR_GOPR_2   | 114          | 114             | 35        | 74           | 5          |
| SIR_GOPN_2   | 111          | 111             | 47        | 64           | 0          |
| SIR_GOP_P2P  | 28           | 28              | 0         | 25           | 3          |

# 7.1 QCC Errors

#### Number of QCC reports with errors:

|              |            |    |            |            | Total number | of occurrences | of each error |   |   |   |   |
|--------------|------------|----|------------|------------|--------------|----------------|---------------|---|---|---|---|
| Product Type | RLOBOPNCDF | RL | RL         | RLOBOPNCDF | RL           | RL             | -             | - | - | - | - |
| SIR_GOPR_2   | 5          | 1  | 5          | 5          | 1            | 5              |               |   |   |   |   |
|              |            |    |            |            |              |                |               |   |   |   |   |
| Product Type | RLOBOPNCDF | RL | RLOBOPNCDF | RL         | -            | -              | -             | - | - | - | - |
| SIR_GOP_2_   | 3          | 3  | 3          | 3          |              |                |               |   |   |   |   |

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

# 7.2 QCC Warnings

| Total number of occurrences of each warning |               |              |                 |                 |                       |                 |                   |  |  |
|---|---------------|--------------|-----------------|-----------------|-----------------------|-----------------|-------------------|--|--|
| Product Type                                | BCSHNCDF      | IOHHMOOR     | MVIOEPFDNCDF    | MVIOEPNCDF      | MVIONCDF              | RBSZOPOEPFDNCDF | RBSZOPOEPFDPLRMNC |  |  |
| SIR_GOPM1B                                  | 148           | 0            | 0               | 0               | 0                     | 0               | 0                 |  |  |
| SIR_GOPM_2                                  | 0             | 0            | 42              | 41              | 4                     | 46              | 0                 |  |  |
| SIR_GOPN1B                                  | 108           | 0            | 0               | 0               | 0                     | 0               | 0                 |  |  |
| SIR_GOPN_2                                  | 0             | 0            | 8               | 32              | 10                    | 22              | 27                |  |  |
| SIR_GOPR1B                                  | 111           | 0            | 0               | 0               | 0                     | 0               | 0                 |  |  |
| SIR_GOPR_2                                  | 0             | 5            | 40              | 40              | 10                    | 35              | 34                |  |  |
|   |               |              |                 |                 |                       |                 |                   |  |  |
| Product Type                                | RBSZOPOEPNCDF | RNELPOTONCDF | RPEPOPFDLRMNCDF | RPEPOPFDPLRMSAR | NCERPEPOPFDPLRMSINNCD | RPEPOPFDSARNCDF | RPEPOPFDSINNCDF   |  |  |
| SIR_GOPM1B                                  | 0             | 0            | 0               | 0               | 0                     | 0               | 0                 |  |  |
| SIR GOPM 2                                  | 40            | 2            | 38              | 0               | 0                     | 0               | 0                 |  |  |

| SIR_GOPN1B   | 0             | 0                  | 0                 | 0              | 0               | 0                 | 0                |
|--------------|---------------|--------------------|-------------------|----------------|-----------------|-------------------|------------------|
| SIR_GOPN_2   | 19            | 0                  | 0                 | 0              | 26              | 0                 | 35               |
| SIR_GOPR1B   | 0             | 0                  | 0                 | 0              | 0               | 0                 | 0                |
| SIR_GOPR_2   | 19            | 0                  | 0                 | 44             | 0               | 51                | 0                |
|              |               |                    |                   |                |                 |                   |                  |
| Product Type | RPEPOPLRMNCDF | RPEPOPSARNCDF      | RPEPOPSINNCDF     | RSSBCONCDF     | RSSHAOFDNCDF    | RSSHAOFDPLRMNCDF  | RSSHAONCDF       |
| SIR_GOPM1B   | 0             | 0                  | 0                 | 0              | 0               | 0                 | 0                |
| SIR_GOPM_2   | 30            | 0                  | 0                 | 5              | 29              | 0                 | 3                |
| SIR_GOPN1B   | 0             | 0                  | 0                 | 0              | 0               | 0                 | 0                |
| SIR_GOPN_2   | 0             | 0                  | 31                | 23             | 45              | 50                | 35               |
| SIR_GOPR1B   | 0             | 0                  | 0                 | 0              | 0               | 0                 | 0                |
| SIR_GOPR_2   | 0             | 43                 | 0                 | 4              | 54              | 40                | 7                |
|              |               |                    |                   |                |                 |                   |                  |
| Product Type | RSWHOEPFDNCDF | RSWHOEPFDPLRMNCDF  | RSWHOEPNCDF       | SPHRTASCNSNCDF | SOOHHIFHD       | SCSTODHRNCDF      | SCSTODNCDF       |
| SIR_GOPM1B   | 0             | 0                  | 0                 | 1              | 0               | 0                 | 0                |
| SIR_GOPM_2   | 38            | 0                  | 4                 | 1              | 0               | 0                 | 0                |
| SIR_GOPN1B   | 0             | 0                  | 0                 | 0              | 0               | 48                | 5                |
| SIR_GOPN_2   | 29            | 28                 | 15                | 0              | 2               | 0                 | 0                |
| SIR_GOPR1B   | 0             | 0                  | 0                 | 0              | 0               | 114               | 4                |
| SIR_GOPR_2   | 38            | 47                 | 4                 | 0              | 7               | 0                 | 0                |
|              |               |                    |                   |                |                 |                   |                  |
| Product Type | IOHHMOOR      | MVIOEPFDNCDF       | MVIOEPNCDF        | MVIONCDF       | RBSZOPOEPFDNCDF | RBSZOPOEPFDPLRMNC | RBSZOPOEPNCDF    |
| SIR_GOP_2_   | 18            | 28                 | 28                | 4              | 28              | 16                | 28               |
|              |               |                    |                   |                |                 |                   |                  |
| Product Type | RNELPOTONCDF  | RPEPOPFDPLRMSINNCD |                   | RPEPOPSINNCDF  | RSSBCONCDF      | RSSHAOFDNCDF      | RSSHAOFDPLRMNCDF |
| SIR_GOP_2_   | 1             | 17                 | 28                | 22             | 21              | 28                | 17               |
|              |               |                    |                   | 2011/102201022 |                 |                   |                  |
| Product Type | RSSHAONCDF    | RSWHOEPFDNCDF      | RSWHOEPFDPLRMNCDF |                | SPHLPQWNCDF     | -                 | -                |
| SIR GOP 2    | 26            | 28                 | 18                | 16             | 28              |                   |                  |

| 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<br>between -70 and 70 degrees     |  |  |  |  |
| RBSZOPOEPFDPLRM         | RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2PLRMNetCDF | The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes<br>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<br>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<br>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                      |  |  |  |  |
|                         | RangePeakinessExcludingPolarOPFD2PLRMSINNetCDF              | The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70<br>and 70 degrees                   |  |  |  |  |
| RPEPOPFDSARNCDF         | RangePeakinessExcludingPolarOPFD2SARNetCDF                  | The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70<br>and 70 degrees                   |  |  |  |  |
| RPEPOPFDSINNCDF         | RangePeakinessExcludingPolarOPFD2SINNetCDF                  | The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                      |  |  |  |  |
| RPEPOPLRMNCDF           | RangePeakinessExcludingPolarOPLRMNetCDF                     | The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                       |  |  |  |  |
| RPEPOPSARNCDF           | RangePeakinessExcludingPolarOPSARNetCDF                     | The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                      |  |  |  |  |
| RPEPOPSINNCDF           | RangePeakinessExcludingPolarOPSINNetCDF                     | The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees                      |  |  |  |  |
| RSSBCONCDF              | RangeSeaStateBiasCorrectionOceanNetCDF                      | The sea state bias correction should be between -500mm and 0mm (or missing) for surface type = ocean  |  |  |  |  |
| RSSHAOFDNCDF            | RangeSeaSurfaceHeightAnomalyOceanFD3NetCDF                  | The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type =<br>ocean                                    |  |  |  |  |
| RSSHAOFDPLRMNCD         | RangeSeaSurfaceHeightAnomalyOceanFD3PLRMNetCDF              | The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type =<br>ocean                                    |  |  |  |  |
| RSSHAONCDF              | RangeSeaSurfaceHeightAnomalyOceanNetCDF                     | The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type =<br>ocean                                    |  |  |  |  |
| RSWHOEPFDNCDF           | RangeSignificantWaveHeightOceanExcludingPolarFD2NetCDF      | The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for<br>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<br>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<br>latitudes between -70 and 70 degrees |  |  |  |  |
| SPHRTASCNSNCDF          | SPH_Rel_Time_ASC_Node_Stop_v2_NetCDF                        | Rel_Time_ASC_Node_Stop mismatch   |  |  |  |  |
| SOOHHIFHD               | SameOrOneHigher1HzIndexFor20HzData                          | The 1 Hz index of a 20 Hz sample should be the same or 1 higher than its previous sample  |  |  |  |  |
| SCSTODHRNCDF            | SequenceCounterStepTODHRNetCDF                              | The sequence counter should be modulo 4 higher with regard to the previous sequence counter   |  |  |  |  |
| SCSTODNCDF              | SequenceCounterStepTODNetCDF                                | The sequence counter should be one higher (modulo 16384) with regard to the previous sequence counter   |  |  |  |  |

# 7.3 Missing QCC Reports

Number of products with missing QCC reports:

0