

## 1. Overview

Report Production:	22-Feb-2023
Processor Used:	CryoSat Ocean Processor
Data Used:	Intermediate Ocean Products (IOP) L1B, L2 & P2P Science Data

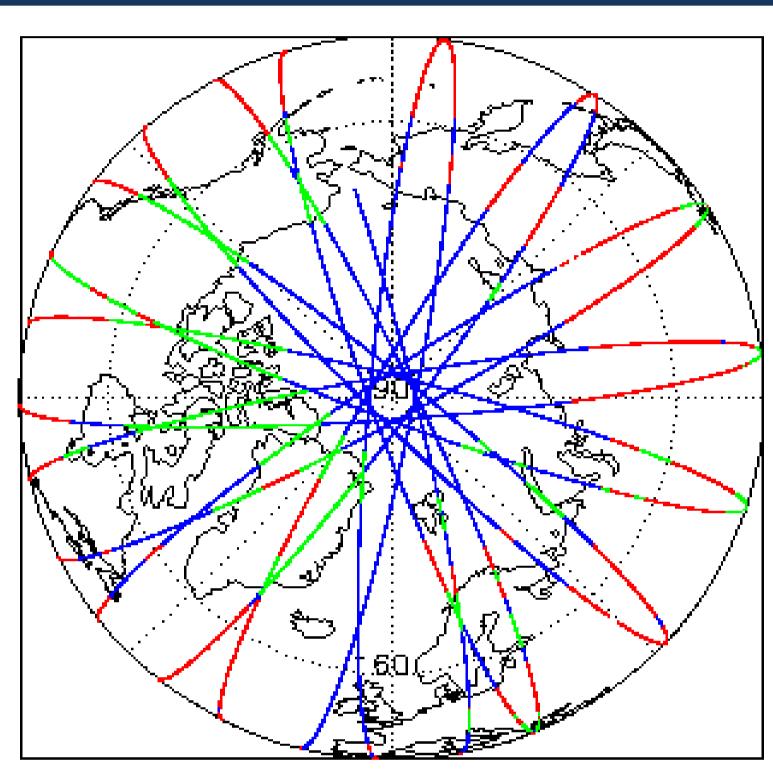
### We would love to hear from you!

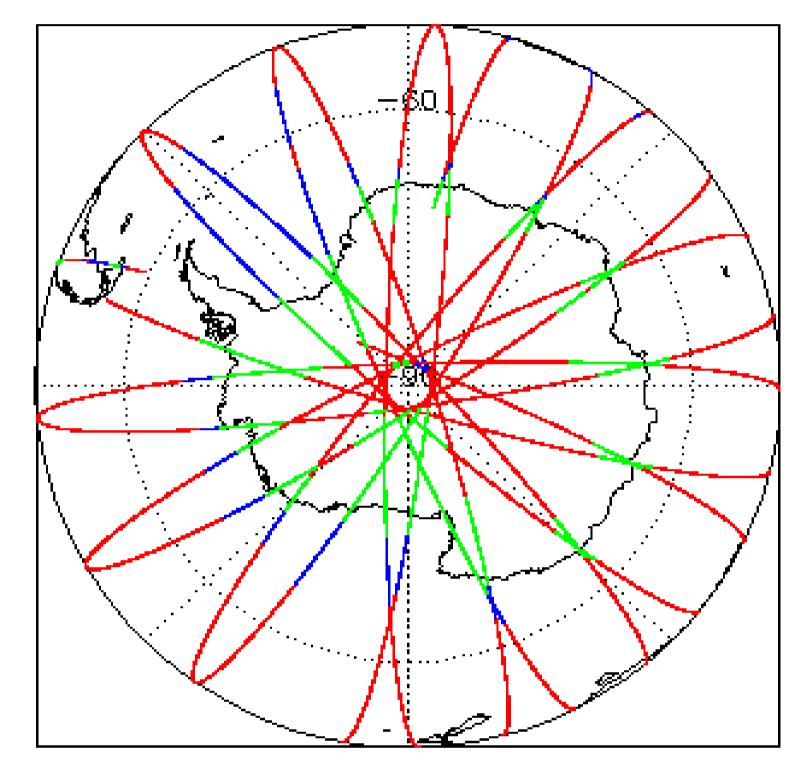
Please let us know your feedback about these daily quality reports: What do you like/ dislike? What quality information do you need? Send your feedback to cs2\_qc\_team@telespazio.com

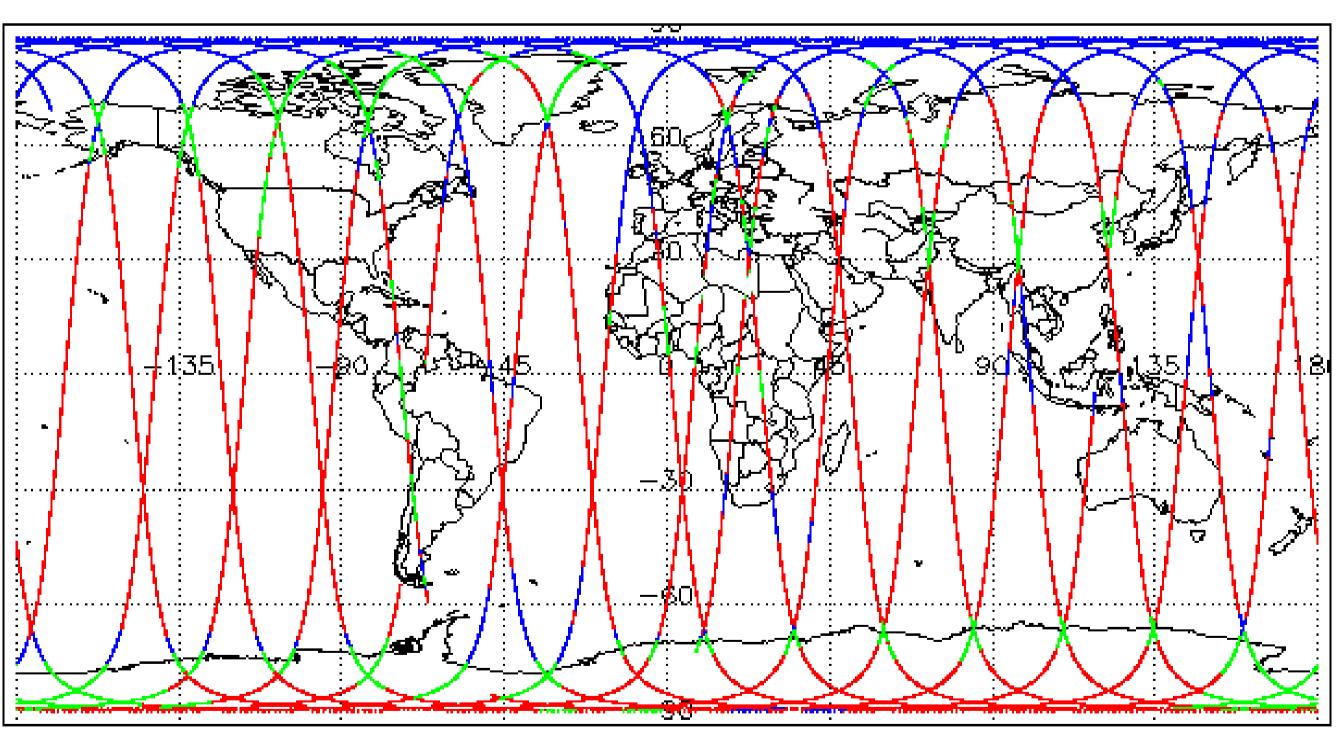
Check	L1 & L2	P2P
Server check: science-pds.cryosat.esa.int	Nominal	Nominal
Server check: calval-pds.cryosat.esa.int	Nominal	Nominal
Product Software Check	Nominal	Nominal
Product Format Check	Nominal	Nominal
Product Header Analysis	Nominal	Nominal
Auxiliary Data File Usage Check	Nominal	Nominal
Auxiliary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

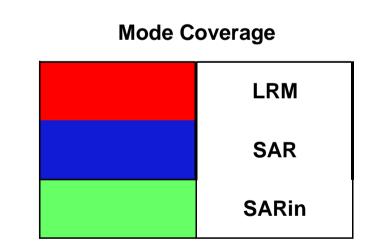
I	Mission / Instru	ment News
	18-Feb-2023	None
	19-Feb-2023	None
	20-Feb-2023	Nothing planned

## 2. Global Coverage









## 3. Instrument Configuration

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

SIRAL instrument(s) in use: SIRAL - A

## 4. IOP 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 NetCDF product file (.nc).

#### **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.

Number of products with errors:

#### 4.3 L1B Auxilary Data File Usage Check

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

Number of products with errors:

#### 4.4 L1B Auxiliary Correction Error Check

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

0

0

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 IOPR products due to a configuration issue. The attitude correction is actually not missing. This will be resolved in the next SW update.

Number of products with errors: 0

### 4.6 L1B Waveform Group Data Check

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

Loss of Echo Flag: This flag is currently set for products over land, but this is to be expected. The table provides the full list of products flagged.

Number of products with errors:

Product	Test Failed	Description
CS_OFFL_SIR_IOPN1B_20230219T032613_20230219T033052_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230219T123448_20230219T123613_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230219T155054_20230219T155246_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230219T031128_20230219T031622_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230219T043651_20230219T043852_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230219T050913_20230219T051335_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230219T112445_20230219T112523_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230219T163021_20230219T163429_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230219T195351_20230219T200238_C001	Loss of Echo	The tracking echo is missing for one or more records

## 5. IOP 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 NetCDF product file (.nc).

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: 0

### 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.
- > Mean Sea Surface: The error value is currently set for products over land and sea ice, but this is to be expected.
- > Mean Dynamic Topography: The error value is currently set for products over land and 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.

Product	Test Failed	Description
CS_OFFL_SIR_IOPM_2_20230219T083647_20230219T090521_C001	IIVIEAN LIVNAMIC LODOGRADNY (1)	There is an error with the Mean Dynamic Topography height (solution 1) for one or more records
	Topography (1), Total Geocentric Ocean	There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1), the Total Geocentric Ocean Tide (solution 1: GOT) for one or more records
CS_OFFL_SIR_IOPN_2_20230219T004946_20230219T005106_C001	, , , , , , , , , , , , , , , , , , ,	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)

CS_OFFL_SIR_IOPN_2_20230219T005615_20230219T005926_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and tidal corrections for one or more records
CS_OFFL_SIR_IOPN_2_20230219T023038_20230219T023319_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPN_2_20230219T023520_20230219T024050_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPN_2_20230219T032613_20230219T033052_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT)	There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1), the Total Geocentric Ocean Tide (solution 1: GOT) for one or more records
CS_OFFL_SIR_IOPN_2_20230219T040953_20230219T041229_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPN_2_20230219T050517_20230219T050626_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPN_2_20230219T050737_20230219T050912_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_IOPN_2_20230219T064435_20230219T065026_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPN_2_20230219T072722_20230219T072911_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_IOPN_2_20230219T073723_20230219T073946_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_IOPN_2_20230219T082447_20230219T082857_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and tidal corrections for one or more records
CS_OFFL_SIR_IOPN_2_20230219T100645_20230219T101105_C001	Total Geocentric Ocean Tide (GOT)	There is an error with the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records
CS_OFFL_SIR_IOPN_2_20230219T104658_20230219T105031_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPN_2_20230219T122615_20230219T122936_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPN_2_20230219T123448_20230219T123613_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_IOPN_2_20230219T131701_20230219T131820_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPN_2_20230219T141351_20230219T141500_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_IOPN_2_20230219T155054_20230219T155246_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPN_2_20230219T163429_20230219T163646_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPN_2_20230219T190001_20230219T190252_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_IOPN_2_20230219T190913_20230219T191216_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and tidal corrections for one or more records
CS_OFFL_SIR_IOPN_2_20230219T212527_20230219T213044_C001	Mean Dynamic Topography (1), Total Geocentric Ocean Tide (FES), Non- Equilibrium Long Period Ocean Tide	There is an error with the Mean Dynamic Topography (solution 1), the Total Geocentric Ocean Tide (solution 2: FES) and the Non-Equilibrium Long Period Ocean Tide for one or more records
CS_OFFL_SIR_IOPN_2_20230219T214004_20230219T214131_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_IOPN_2_20230219T235905_20230220T000030_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_IOPR_2_20230218T235914_20230219T000710_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T000710_20230219T000833_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T013914_20230219T014610_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T014610_20230219T015033_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T032045_20230219T032503_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T032503_20230219T032612_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)

CS_OFFL_SIR_IOPR_2_20230219T045840_20230219T050158_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T050158_20230219T050517_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T063811_20230219T064435_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T081958_20230219T082446_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T095650_20230219T100645_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T113647_20230219T114541_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T131821_20230219T132536_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T145731_20230219T150444_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T161214_20230219T161319_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_IOPR_2_20230219T163647_20230219T164348_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T181528_20230219T182134_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T182139_20230219T182245_C001	Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT)	There is an error with the Mean Dynamic Topography (solution 1) and the Total Geocentric Ocean Tide (solution 1: GOT) for one or more records
CS_OFFL_SIR_IOPR_2_20230219T195351_20230219T200238_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T213044_20230219T213822_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T231016_20230219T231643_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOPR_2_20230219T231643_20230219T231949_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)

## 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.

### **5.6 L2 Measurement Quality Flag Check**

#### L2 Quality Flags (20 Hz)

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

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

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

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Product	Test Failed	Description
CS_OFFL_SIR_IOPM_2_20230219T001029_20230219T001128_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T002951_20230219T004920_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T005106_20230219T005615_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T010131_20230219T013621_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T020054_20230219T020514_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T020610_20230219T022347_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T022648_20230219T022747_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T023319_20230219T023519_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T024208_20230219T025801_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T030422_20230219T031128_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T031623_20230219T031701_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T033125_20230219T034915_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T035037_20230219T040430_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T041229_20230219T041430_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T042112_20230219T043651_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T043852_20230219T044816_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T045404_20230219T045406_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T050626_20230219T050737_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T051608_20230219T052717_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T054323_20230219T054722_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T055036_20230219T055835_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T060024_20230219T061558_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

CS_OFFL_SIR_IOPM_2_20230219T063303_20230219T063304_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T065253_20230219T070217_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T070232_20230219T072644_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T072911_20230219T073120_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T073146_20230219T073723_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T073946_20230219T080513_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T083647_20230219T090521_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T091121_20230219T091556_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T091838_20230219T094548_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T094550_20230219T094648_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T095616_20230219T095650_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T101106_20230219T104431_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T105032_20230219T105605_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T105731_20230219T110352_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T113502_20230219T113646_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T115009_20230219T122421_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T122936_20230219T123448_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T123627_20230219T125632_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T125953_20230219T130446_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T132814_20230219T134904_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T135014_20230219T140212_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T140608_20230219T140936_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T140953_20230219T141351_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T141546_20230219T144454_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T144511_20230219T145215_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T145343_20230219T145621_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

CS_OFFL_SIR_IOPM_2_20230219T151130_20230219T151914_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T152537_20230219T154137_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T154317_20230219T154836_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T155922_20230219T161214_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T161428_20230219T162615_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T162916_20230219T163021_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T164404_20230219T164406_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T164656_20230219T164726_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T170555_20230219T172056_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T172244_20230219T172748_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T172812_20230219T172927_C001		The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T173619_20230219T173717_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T174529_20230219T174809_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T175530_20230219T175807_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T175930_20230219T180629_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T183714_20230219T184029_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T184222_20230219T190001_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T190252_20230219T190705_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T191309_20230219T193842_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T201356_20230219T203941_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T204056_20230219T204620_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T204626_20230219T204951_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T205217_20230219T212526_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T214932_20230219T221126_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T221241_20230219T221917_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T222052_20230219T222900_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

CS_OFFL_SIR_IOPM_2_20230219T223125_20230219T230626_C001	_	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230219T234953_20230219T235853_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T032015_20230219T032044_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T050517_20230219T050626_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T073120_20230219T073146_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T100645_20230219T101105_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T114541_20230219T114723_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T204620_20230219T204626_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T013621_20230219T013741_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T022747_20230219T023038_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T130511_20230219T130518_C001		The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T221917_20230219T221928_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T230758_20230219T230841_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

## L2 Quality Flags (20 Hz PLRM)

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

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

Product	Test Failed	Description
CS_OFFL_SIR_IOPN_2_20230219T001714_20230219T001725_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T001733_20230219T001810_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T023038_20230219T023319_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T032613_20230219T033052_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T041430_20230219T041538_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T044816_20230219T045106_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T050737_20230219T050912_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T055934_20230219T060024_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T062539_20230219T062925_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T064435_20230219T065026_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

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Section 1. 10% 2. 22322-9710044; 2223219 (1114,022)  CO OFFL 5.4 10% 2. 22322-971044; 22232-971044,02232	CS_OFFL_SIR_IOPN_2_20230219T073120_20230219T073146_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
County   C	CS_OFFL_SIR_IOPN_2_20230219T081924_20230219T081958_C001	and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_CPH_SR_CPH_2_202020*** 1920222317** 1920 COOR  CS_CPH_SR_CPH_2_202020*** 19202222317** 1920 COOR  CS_CPH_SR_CPH_2_202020*** 1920222232317** 1920 COOR  CS_CPH_SR_CPH_2_202020*** 192022223317** 1920 COOR  CS	CS_OFFL_SIR_IOPN_2_20230219T082447_20230219T082857_C001	and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
COOR BEACHMENT CALLEY  COOR Allower Rings Cealty PLAN  COOR Al	CS_OFFL_SIR_IOPN_2_20230219T083221_20230219T083647_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
Court   Set   Compt   2 202001511-0926   202001511-19205   20200	CS_OFFL_SIR_IOPN_2_20230219T090942_20230219T091121_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
CSC OFFL SIR (IDPN 2 20/20/01911/2015 20/20/21911/2016)	CS_OFFL_SIR_IOPN_2_20230219T091715_20230219T091838_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
OCO Basecoate Coulty  The COOK Regis and Backscater Quality Flags have been set for on one records  OCS_OFFL_SIR_IDPN_2_20202191*2602_20202191*12002_0001  OCO Altiment Regis Quality Flags  OCO Altiment Regis Quality Flags  OCO Basecoater Guality Flags  OCO Altiment Regis Quality Flags  OCO Basecoater Guality Flags  OCO Basecoater Gual	CS_OFFL_SIR_IOPN_2_20230219T112808_20230219T112820_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS OFFL SIR IOPN 2 20200219T140502 2020229T140506 COOL  CS OFFL SIR IOPN 2 20200219T160502 2020229T140506 COOL  CS OFFL SIR IOPN 2 20200219T160509 2020229T140506 COOL  CS OFFL SIR IOPN 2 20200219T160509 2020229T140506 COOL  CS OFFL SIR IOPN 2 20200219T140509 2020229T140509 COOL  CS OFFL SIR IOPN 2 20200219T14	CS_OFFL_SIR_IOPN_2_20230219T114541_20230219T114723_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_JOPN_2_202202191140242_202302191140546_0001  CS_OFFL_SIR_JOPN_2_202202191140242_202302191140546_0001  CS_OFFL_SIR_JOPN_2_202202191140244_202302191140546_0001  CS_OFFL_SIR_JOPN_2_202202191160049_202302191140546_0001  CS_OFFL_SIR_JOPN_2_202202191160049_202302191140546_0001  CS_OFFL_SIR_JOPN_2_202202191160049_202302191140546_0001  CS_OFFL_SIR_JOPN_2_202202191160049_202302191140546_0001  CS_OFFL_SIR_JOPN_2_202202191160049_202302191140044_0001  CS_OFFL_SIR_JOPN_2_202202191160049_202302191140044_0001  CS_OFFL_SIR_JOPN_2_202202191160049_202302191140044_0001  CS_OFFL_SIR_JOPN_2_2022021911740044_0001  CS_OFFL_SIR_JOPN_2_202202191180007_202302191181522_0001  CS_OFFL_SIR_JOPN_2_20220	CS_OFFL_SIR_IOPN_2_20230219T122615_20230219T122936_C001	•	The OCOG Range and Backscatter Quality Flags have been set for one or more records
OCOG Backscaler Quality  CS_OFFL_SR_JOPN_2_202302197145244_202302197146301_C001  OCOG Allimeter Range Quality PLRM. OCOG Backscaler Quality  The OCOG Range and Backscaler Quality Flags have been set for one recends.  The OCOG Range and Backscaler Quality Flags have been set for one recends.  The OCOG Range and Backscaler Quality Flags have been set for one recends.  The OCOG Range and Backscaler Quality Flags have been set for one recends.  The OCOG Range and Backscaler Quality Flags have been set for one recends.  The OCOG Range and Backscaler Quality Flags have been set for one recends.  The OCOG Range and Backscaler Quality Flags have been set for one recends.  CS_OFFL_SR_JOPN_2_202302197168019_202302197169349_C001  OCOG Allimeter Range Quality PLRM. OCOG Backscaler Qualit	CS_OFFL_SIR_IOPN_2_20230219T125632_20230219T125953_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T198812_20230219T195342_C001  OCGG Bancecatier Quality PLRM, The OCGG Range and Backscatter Quality Flags have been set for one more records.  CS_OFFL_SIR_IOPN_2_20230219T198812_20230219T198848_C001  OCGG Altimeter Range Quality PLRM, The OCGG Range and Backscatter Quality Flags have been set for one more records.  CS_OFFL_SIR_IOPN_2_20230219T198819_20230219T198848_C001  OCGG Altimeter Range Quality PLRM, The OCGG Range and Backscatter Quality Flags have been set for one more records.  CS_OFFL_SIR_IOPN_2_20230219T198819_20230219T198888_C001  OCGG Altimeter Range Quality PLRM, The OCGG Range and Backscatter Quality Flags have been set for one more records.  CS_OFFL_SIR_IOPN_2_20230219T1973736_20230219T173888_C001  OCGG Altimeter Range Quality PLRM, The OCGG Range and Backscatter Quality Flags have been set for one more records.  CS_OFFL_SIR_IOPN_2_20230219T174219_20230219T175342_C001  OCGG Altimeter Range Quality PLRM, The OCGG Range and Backscatter Quality Flags have been set for one more records.  CS_OFFL_SIR_IOPN_2_20230219T198817_20230219T195342_C001  OCGG Altimeter Range Quality PLRM, The OCGG Range and Backscatter Quality Flags have been set for one more records.  CS_OFFL_SIR_IOPN_2_20230219T198817_20230219T195332_C001  OCGG Altimeter Range Quality PLRM, The OCGG Range and Backscatter Quality Flags have been set for one more records.  CS_OFFL_SIR_IOPN_2_20230219T198817_20230219T195332_C001  OCGG Altimeter Range, SIRLS_SWH and Backscatter Quality Flags have been set for one more records.  CS_OFFL_SIR_IOPN_2_20230219T198007_20230219T19405_C001  OCGG Altimeter Range, SIRLS_SWH and Backscatter Quality Flags have been set for one or more records.  CS_OFFL_SIR_IOPN_2_20230219T198007_20230219T195551_C001  OCGG Altimeter Range, SIRLS_SWH and Backscatter Quality Flags have been set for one or more records.  CS_OFFL_SIR_IOPN_2_20230219T198007_20230219T195551_C001  OCGG Altimeter Range, SIRLS_SWH and Backscatter Quality Flags have been set for one or more records.  CS_OFFL_SIR_IOPN_2_202302	CS_OFFL_SIR_IOPN_2_20230219T140328_20230219T140608_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T163429_20230219T16346_C001  CS_OFFL_SIR_IOPN_2_20230219T163429_20230219T16346_C001  CS_OFFL_SIR_IOPN_2_20230219T16349_20230219T16346_C001  CS_OFFL_SIR_IOPN_2_20230219T1763019_20230219T175808_C001  CS_OFFL_SIR_IOPN_2_20230219T177773_20230219T1775808_C001  CS_OFFL_SIR_IOPN_2_20230219T177773_20230219T1775808_C001  CS_OFFL_SIR_IOPN_2_20230219T177773_20230219T1775808_C001  CS_OFFL_SIR_IOPN_2_20230219T177773_20230219T1775808_C001  CS_OFFL_SIR_IOPN_2_20230219T177773_20230219T1775808_C001  CS_OFFL_SIR_IOPN_2_20230219T1778108_20230219T1775808_C001  CS_OFFL_SIR_IOPN_2_20230219T1778108_20230219T1775808_C001  CS_OFFL_SIR_IOPN_2_20230219T1780804_C001  CS_OFFL_SIR_IOPN_2_20230219T1780841_20230219T180804_C001  CS_OFFL_SIR_IOPN_2_20230219T180841_20230219T180804_C001  CS_OFFL_SIR_IOPN_2_20230219T180841_20230219T181528_C001  CS_OFFL_SIR_IOPN_2_20230219T180841_20230219T181528_C001  CS_OFFL_SIR_IOPN_2_20230219T180841_20230219T181528_C001  CS_OFFL_SIR_IOPN_2_20230219T194803_20230219T181528_C001  CS_OFFL_SIR_IOPN_2_20230219T194803_20230219T181528_C001  CS_OFFL_SIR_IOPN_2_20230219T194803_20230219T185381_C001  CS_OFFL_SIR_IOPN_2_20230219T194803_20230219T185381_C001  CS_OFFL_SIR_IOPN_2_20230219T194803_20230219T185381_C001  CS_OFFL_SIR_IOPN_2_20230219T194803_20230219T195381_C001  CS	CS_OFFL_SIR_IOPN_2_20230219T145244_20230219T145301_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T165019_20230219T165049_C001  CS_OFFL_SIR_IOPN_2_20230219T173735_20230219T173808_C001  CS_OFFL_SIR_IOPN_2_20230219T173735_20230219T173808_C001  CS_OFFL_SIR_IOPN_2_20230219T173735_20230219T173808_C001  CS_OFFL_SIR_IOPN_2_20230219T174219_20230219T174529_C001  CS_OFFL_SIR_IOPN_2_20230219T174219_20230219T174529_C001  CS_OFFL_SIR_IOPN_2_20230219T174809_20230219T175342_C001  CS_OFFL_SIR_IOPN_2_20230219T178007_20230219T175930_C001  CS_OFFL_SIR_IOPN_2_20230219T1780041_20230219T180804_C001  CS_OFFL_SIR_IOPN_2_20230219T180641_20230219T180804_C001  CS_OFFL_SIR_IOPN_2_20230219T180641_20230219T16528_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T16558_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_S	CS_OFFL_SIR_IOPN_2_20230219T155054_20230219T155246_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_JOPN_2_20230219T173735_20230219T173808_C001  CS_OFFL_SIR_JOPN_2_20230219T174219_20230219T174529_C001  CS_OFFL_SIR_JOPN_2_20230219T174219_20230219T174529_C001  CS_OFFL_SIR_JOPN_2_20230219T174219_20230219T174529_C001  CS_OFFL_SIR_JOPN_2_20230219T174809_20230219T175342_C001  CS_OFFL_SIR_JOPN_2_20230219T176807_20230219T175342_C001  CS_OFFL_SIR_JOPN_2_20230219T176807_20230219T175807_C001  CS_OFFL_SIR_JOPN_2_20230219T176807_20230219T175807_C001  CS_OFFL_SIR_JOPN_2_20230219T180641_20230219T180804_C001  CS_OFFL_SIR_JOPN_2_20230219T180641_20230219T180804_C001  CS_OFFL_SIR_JOPN_2_20230219T180641_20230219T180804_C001  CS_OFFL_SIR_JOPN_2_20230219T180641_20230219T181528_C001  CS_OFFL_SIR_JOPN_2_20230219T180641_20230219T181528_C001  CS_OFFL_SIR_JOPN_2_20230219T180641_20230219T181528_C001  CS_OFFL_SIR_JOPN_2_20230219T18007_20230219T194926_C001  CS_OFFL_SIR_JOPN_2_20230219T194003_20230219T194926_C001  CS_OFFL_SIR_JOPN_2_20230219T194003_20230219T194926_C001  CS_OFFL_SIR_JOPN_2_20230219T194003_20230219T195351_C001  CS_OFFL_SIR_JOPN_2_20230219T19007_20230219T195351_C001  CS_OFFL_SIR_JOPN_2_20230219T19007_20230219T195351_C001  CS_OFFL_SIR_JOPN_2_20230219T19007_20230219T195351_C001  CS_OFFL_SIR_JOPN_2_20230219T19007_20230219T195351_C001  CS_OFFL_SIR_JOPN_2_20230219T20045_20230219T201366_C001  CCG_GRackscatter Quality PLRM. CCG_GRackscatter Quality PLR	CS_OFFL_SIR_IOPN_2_20230219T163429_20230219T163646_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T174219_20230219T175342_C001  CS_OFFL_SIR_IOPN_2_20230219T174809_20230219T175342_C001  CS_OFFL_SIR_IOPN_2_20230219T174809_20230219T175342_C001  CS_OFFL_SIR_IOPN_2_20230219T175807_20230219T175930_C001  CS_OFFL_SIR_IOPN_2_20230219T175807_20230219T175930_C001  CS_OFFL_SIR_IOPN_2_20230219T180641_20230219T180804_C001  CS_OFFL_SIR_IOPN_2_20230219T194803_20230219T180955_C001  CS_OFFL_SIR_IOPN_2_20230219T194803_20230219T194925_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_SIR_IOPN_2_20230219T200946_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200946_20230219T201356_	CS_OFFL_SIR_IOPN_2_20230219T165019_20230219T165349_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T174809_20230219T175342_C001  CS_OFFL_SIR_IOPN_2_20230219T175807_20230219T175930_C001  CS_OFFL_SIR_IOPN_2_20230219T175807_20230219T180804_C001  CS_OFFL_SIR_IOPN_2_20230219T180641_20230219T180804_C001  CS_OFFL_SIR_IOPN_2_20230219T180641_20230219T180804_C001  CS_OFFL_SIR_IOPN_2_20230219T181016_20230219T181528_C001  CS_OFFL_SIR_IOPN_2_20230219T181016_20230219T181528_C001  CS_OFFL_SIR_IOPN_2_20230219T181080_20230219T181528_C001  CS_OFFL_SIR_IOPN_2_20230219T194803_20230219T194925_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T213044_C001  CS_OFFL_SIR_IOPN_2_20230219T212527_20230219T213044_C001  CS_OFFL_SIR_IOPN_2_20230219T212527_20230219T213044_C001  CCOG Altimeter Range Quality PLRM, CCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  CCCOG Altimeter Range Records  CCCOG Altimeter R	CS_OFFL_SIR_IOPN_2_20230219T173735_20230219T173808_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T175807_20230219T175930_C001  CS_OFFL_SIR_IOPN_2_20230219T180641_20230219T180804_C001  CS_OFFL_SIR_IOPN_2_20230219T180641_20230219T180804_C001  CS_OFFL_SIR_IOPN_2_20230219T180641_20230219T180804_C001  CS_OFFL_SIR_IOPN_2_20230219T181016_20230219T181528_C001  CS_OFFL_SIR_IOPN_2_20230219T181016_20230219T181528_C001  CS_OFFL_SIR_IOPN_2_20230219T194803_20230219T194926_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T2001356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T2001356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T2001356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T2001356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T2001356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T2001356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T2001356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T2001356_C001  CCG_Altimeter Range Quality PLRM, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one more records  CCG_Altimeter Range Quality PLRM, OCOG Altimeter Range and Backscatter Quality Flags have been set for one more records  CCG_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CCG_Altimeter Range, SSHA, SWH, SWH, and Backscatter Quality Flags have been set for one more records  CCG_OFFL_SIR_IOPN_2_20230219T200945_20230219T213044_C001  CCG_Altimeter Range, SSHA, SWH, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one more records  CCG_OFFL_SIR_IOPN_2_20230219T215527_20230219T213044_C001  CCG_Altimeter Range, SSHA, SWH, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one more records  CCG_OFFL_SIR_IOPN_2_20230219T215527_20230219T213044_C001  CCG_Altimeter Range, SSHA, SWH, OCOG Altimeter Ran	CS_OFFL_SIR_IOPN_2_20230219T174219_20230219T174529_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
OCOG Backscatter Quality  CS_OFFL_SIR_IOPN_2_20230219T180641_20230219T180804_C001  CS_OFFL_SIR_IOPN_2_20230219T180641_20230219T180804_C001  CS_OFFL_SIR_IOPN_2_20230219T181016_20230219T181528_C001  CS_OFFL_SIR_IOPN_2_20230219T181016_20230219T181528_C001  CS_OFFL_SIR_IOPN_2_20230219T184016_20230219T181528_C001  CS_OFFL_SIR_IOPN_2_20230219T194803_20230219T194925_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T213044_C001  CS_OFFL_SIR_IOPN_2_20230219T215527_20230219T213044_C001  CS_OFFL_SIR_IOPN_2_20230219T215527_20230219T213044_C001  OCOG Altimeter Range Quality PLRM, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records  The Ocoan Altimeter Range, SSHA, SWH 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  The OcoG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T215527_20230219T213044_C001  The Ocoan Altimeter Range Range, SSHA, SWH and Backscatter Quality Flags have been set for one more records  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T213044_C001  The Ocoan Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one more records  CS_OFFL_SIR_IOPN_2_20230219T212527_20230219T213044_C001  The Ocoan Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one more records  CS_OFFL_SIR_IOPN_2_20230219T212527_20230219T213044_C001  The Ocoan Altimeter Range Range, SSHA, SWH and Backscatter Quality Flags have been set for one more records  The Ocoan Altimeter Range and Backscatter Quality Flags have been set for one more records	CS_OFFL_SIR_IOPN_2_20230219T174809_20230219T175342_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM  CS_OFFL_SIR_IOPN_2_20230219T181016_20230219T181528_C001  CS_OFFL_SIR_IOPN_2_20230219T18403_20230219T194925_C001  CS_OFFL_SIR_IOPN_2_20230219T194803_20230219T194925_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T213044_C001  Altimeter Range and Backscatter Quality PLRM, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality Flags have be set for one or more records  CS_OFFL_SIR_IOPN_2_20230219T212527_20230219T213044_C001	CS_OFFL_SIR_IOPN_2_20230219T175807_20230219T175930_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T181016_20230219T181528_C001  and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flag have been set for one or more records  CS_OFFL_SIR_IOPN_2_20230219T194803_20230219T194925_C001  CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T20230219T203041_C001  Altimeter Range Quality PLRM, OCOG Altimeter Range and Backscatter Quality Flag and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flag and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flag and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flag and the OC	CS_OFFL_SIR_IOPN_2_20230219T180641_20230219T180804_C001	and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T194803_20230219T194925_C001  OCOG Backscatter Quality  OCean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  OCOG Altimeter Range Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM, OCOG Backscatter Quality  OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality  The OCOG Range and Backscatter Quality Flags have been set for one or more records  OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records  OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records  OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records  OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records  OCEAN Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records  OCEAN Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records  OCEAN Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records	CS_OFFL_SIR_IOPN_2_20230219T181016_20230219T181528_C001	and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001  and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T2013044_C001  CS_OFFL_SIR_IOPN_2_20230219T212527_20230219T213044_C001  Altimeter Range Quality PLRM, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records  The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records  The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records  The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records	CS_OFFL_SIR_IOPN_2_20230219T194803_20230219T194925_C001	OCOG Altimeter Range Quality PLRM,	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001  OCOG Backscatter Quality  OCOG Backscatter Quality  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flag and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality Flags have be set for one or more records	CS_OFFL_SIR_IOPN_2_20230219T195007_20230219T195351_C001	and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T212527_20230219T213044_C001  and Backscatter Quality PLRM, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flag and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality Flag set for one or more records	CS_OFFL_SIR_IOPN_2_20230219T200945_20230219T201356_C001		The OCOG Range and Backscatter Quality Flags have been set for one or more records
	CS_OFFL_SIR_IOPN_2_20230219T212527_20230219T213044_C001	and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
Iand Backscatter Ullality PLRIVI (JUDIC)	CS_OFFL_SIR_IOPN_2_20230219T213822_20230219T213846_C001	and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

CS_OFFL_SIR_IOPN_2_20230219T230627_20230219T230758_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T232216_20230219T232339_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPN_2_20230219T235905_20230220T000030_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230218T235914_20230219T000710_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T001249_20230219T001608_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T001811_20230219T002139_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T013621_20230219T013741_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T013914_20230219T014610_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T014610_20230219T015033_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T031128_20230219T031622_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T032045_20230219T032503_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T032503_20230219T032612_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T040430_20230219T040953_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T043651_20230219T043852_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T045840_20230219T050158_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T050158_20230219T050517_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T050913_20230219T051335_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T061803_20230219T062024_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T062329_20230219T062412_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T063811_20230219T064435_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T072644_20230219T072722_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T095355_20230219T095616_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T095650_20230219T100645_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T112445_20230219T112523_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T113044_20230219T113356_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T113647_20230219T114541_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

CS_OFFL_SIR_IOPR_2_20230219T114723_20230219T114835_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T130511_20230219T130518_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T130659_20230219T131007_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T131007_20230219T131701_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T131821_20230219T132536_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T132538_20230219T132555_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T132629_20230219T132814_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T145731_20230219T150444_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T163021_20230219T163429_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T163647_20230219T164348_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T173717_20230219T173734_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T175502_20230219T175529_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T180804_20230219T181016_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T181528_20230219T182134_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T182139_20230219T182245_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T183623_20230219T183713_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T213044_20230219T213822_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T214803_20230219T214852_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T231016_20230219T231643_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T231643_20230219T231949_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230219T235853_20230219T235905_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

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

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

> 1 Hz and 1 Hz Ocean SSHA Quality Flags: These flags are currently set for products over sea ice, which is to be expected. The number of products with this error flag set is given below.

Number of products with errors:

# 179

### 5.8 L2 Ocean Retracking Quality Check

#### L2 Retracking Flags (20 Hz)

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

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

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

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

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

Number of products with errors: 140

## 6. IOP L2 Pole-to-Pole Data Quality Check

#### **6.1 P2P Product Format Check**

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

Number of products with errors:

#### **6.2 P2P Product Header Analysis**

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

Number of products with errors:

#### 6.3 P2P Auxiliary Data File Usage Check

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

Number of products with errors:

#### **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).

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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 check.

- > 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.
- > Mean Sea Surface: The error value is currently set for products over land and sea ice, but this is to be expected.
- > Mean Dynamic Topography: The error value is currently set for products over land and 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.

Product	Test Failed	Description
CS_OFFL_SIR_IOP_220230218T231609_20230219T000548_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T000548_20230219T005524_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T005524_20230219T014502_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1), and tidal corrections for one or more records
CS_OFFL_SIR_IOP_220230219T014502_20230219T023438_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T023438_20230219T032417_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T032417_20230219T041353_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT)	There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1), the Total Geocentric Ocean Tide (solution 1: GOT) for one or more records
CS_OFFL_SIR_IOP_220230219T041353_20230219T050331_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T050331_20230219T055308_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T055308_20230219T064246_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T064246_20230219T073223_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T073223_20230219T082201_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T082201_20230219T091137_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1), and tidal corrections for one or more records
CS_OFFL_SIR_IOP_220230219T091137_20230219T100116_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T100116_20230219T105052_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT)	There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1), the Total Geocentric Ocean Tide (solution 1: GOT) for one or more records
CS_OFFL_SIR_IOP_220230219T105052_20230219T114030_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T114030_20230219T123007_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)

CS_OFFL_SIR_IOP_220230219T123007_20230219T131945_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T131945_20230219T140921_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T140921_20230219T145900_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T145900_20230219T154836_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T154836_20230219T163814_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T163814_20230219T172751_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T172751_20230219T181729_C001		There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1), the Total Geocentric Ocean Tide (solution 1: GOT) for one or more records
CS_OFFL_SIR_IOP_220230219T181729_20230219T190705_C001		There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1), the Total Geocentric Ocean Tide (solution 1: GOT) for one or more records
CS_OFFL_SIR_IOP_220230219T190705_20230219T195644_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1), and tidal corrections for one or more records
CS_OFFL_SIR_IOP_220230219T195644_20230219T204620_C001		There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1), the Total Geocentric Ocean Tide (solution 1: GOT) for one or more records
CS_OFFL_SIR_IOP_220230219T204620_20230219T213559_C001	Topography (1), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period	There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1), the Total Geocentric Ocean Tide (solution 2: FES) and the Non-Equilibrium Long Period Ocean Tide for one or more records
CS_OFFL_SIR_IOP_220230219T213559_20230219T222535_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T222535_20230219T231513_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)
CS_OFFL_SIR_IOP_220230219T231513_20230220T000450_C002	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)

#### 6.5 P2P Measurement Confidence Data Check

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

Number of products with errors:

## 6.6 P2P Measurement Quality Flag Check

### P2P Quality Flags (20 Hz)

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

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

Number of products with errors: 29

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

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

Number of products with errors: 30

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

Since the P2P Quality Flags are copied directly from the L2 Quality Flags, please see Section 5.6 for the number of L2 products affected. The number of P2P products affected is given below.

Number of products with errors: 30

### 6.8 P2P Ocean Retracking Quality Check

### P2P Retracking Flags (20 Hz)

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

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

Number of products with errors: 27

### P2P Retracking Flags PLRM

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

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

Number of products with errors:

30

# 7. IOP 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_IOPM1B	204	204	4	200	0
SIR_IOPR1B	121	105	4	101	0
SIR_IOPN1B	105	121	0	121	0
SIR_IOPM_2	204	204	154	50	0
SIR_IOPR_2	121	105	44	61	0
SIR_IOPN_2	105	121	47	74	0
SIR_IOP_P2P	29	29	0	29	0

## 7.1 QCC Errors

**Number of QCC reports with errors:** 

0

### 7.2 QCC Warnings

**Number of QCC reports with warnings** 

2049

Total nun	nber of occ	currences of	f each	warning

			iotai	Hamber of occurrence.	3 or caoir warning		
Product Type	BCSHNCDF	MVIOEPFDNCDF	MVIOEPNCDF	MVIONCDF	RBSZOPOEPFDNCDF	RBSZOPOEPFDPLRMNO	CDRBSZOPOEPNCDF
SIR_IOPM1B	200	0	0	0	0	0	0
SIR_IOPM_2	0	37	38	1	38	0	34
SIR_IOPN1B	99	0	0	0	0	0	0
SIR_IOPN_2	0	9	32	7	22	31	13
SIR_IOPR1B	119	0	0	0	0	0	0
SIR IOPR 2	0	23	34	1	23	23	14

Product Type	RPEPOPFDLRMNCDF	RPEPOPFDPLRMSARNC	RPEPOPFDPLRMSINNCD	RPEPOPFDSARNCDF	RPEPOPFDSINNCDF	RPEPOPLRMNCDF	RPEPOPSARNCDF
SIR_IOPM1B	0	0	0	0	0	0	0
SIR_IOPM_2	25	0	0	0	0	21	0
SIR_IOPN1B	0	0	0	0	0	0	0
SIR_IOPN_2	0	0	18	0	36	0	0
SIR_IOPR1B	0	0	0	0	0	0	0
SIR_IOPR_2	0	39	0	45	0	0	40

Product Type	RPEPOPSINNCDF	RSSBCONCDF	RSSHAOFDNCDF	RSSHAOFDPLRMNCDF	RSSHAONCDF	RSWHOEPFDNCDF	RSWHOEPFDPLRMNCDF
SIR_IOPM1B	0	0	0	0	0	0	0
SIR_IOPM_2	0	3	20	0	4	30	0
SIR_IOPN1B	0	0	0	0	0	0	0
SIR_IOPN_2	27	9	45	46	30	29	29
SIR_IOPR1B	0	0	0	0	0	0	0
SIR_IOPR_2	0	1	64	32	10	31	39

Product Type	RSWHOEPNCDF	SOOHHIFHD	SCSTODHRNCDF	SCSTODNCDF	-	-	-
SIR_IOPM1B	0	0	0	0			
SIR_IOPM_2	1	0	0	0			
SIR_IOPN1B	0	0	46	0			
SIR_IOPN_2	9	2	0	0			
SIR_IOPR1B	0	0	121	9			
SIR_IOPR_2	1	2	0	0			

Product Type	IOHHMOOR	MVIOEPFDNCDF	MVIOEPNCDF	MVIONCDF	RBSZOPOEPFDNCDF	RBSZOPOEPFDPLRMNCD	RBSZOPOEPNCDF
SIR_IOP_2_	13	29	29	9	29	18	27

Product Type	RPEPOPFDPLRMSINNCD	RPEPOPFDSINNCDF	RPEPOPSINNCDF	RSSBCONCDF	RSSHAOFDNCDF	RSSHAOFDPLRMNCDF	RSSHAONCDF
SIR_IOP_2_	16	27	23	9	29	17	26
	•				-		

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	Product Type	RSWHOEPFDNCDF	RSWHOEPFDPLRMNCDF	RSWHOEPNCDF	SPHLPQWNCDF	-	•	-
	SIR IOP 2	29	19	9	29			

Test Description Key:				
Abbreviation	Test name	Details		
BCSHNCDF	BurstCounterStep20HzNetCDF	The burst counter should be one higher with regard to the previous burst counter		
MVIOEPFDNCDF	MissingValueIntOceanExcludingPolarFD2NetCDF	The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees		
MVIOEPNCDF	MissingValueIntOceanExcludingPolarNetCDF	The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees		
MVIONCDF	MissingValueIntOceanNetCDF	The value should not be a 'missing value' for surface type 0 only		
RBSZOPOEPFDNCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2NetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees		
RBSZOPOEPFDPLRM NCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2PLRMNetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees		
RBSZOPOEPNCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarNetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees		
RPEPOPFDLRMNCDF	RangePeakinessExcludingPolarOPFD2LRMNetCDF	The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees		
NCDF		The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees		
RPEPOPFDPLRMSINN CDF	RangePeakinessExcludingPolarOPFD2PLRMSINNetCDF	The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees		
RPEPOPFDSARNCDF	RangePeakinessExcludingPolarOPFD2SARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees		
RPEPOPFDSINNCDF	RangePeakinessExcludingPolarOPFD2SINNetCDF	The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees		
RPEPOPLRMNCDF	RangePeakinessExcludingPolarOPLRMNetCDF	The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees		
RPEPOPSARNCDF	RangePeakinessExcludingPolarOPSARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees		
RPEPOPSINNCDF	RangePeakinessExcludingPolarOPSINNetCDF	The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees		
RSSBCONCDF	RangeSeaStateBiasCorrectionOceanNetCDF	The sea state bias correction should be between -500mm and 0mm (or missing) for surface type = ocean		
RSSHAOFDNCDF	RangeSeaSurfaceHeightAnomalyOceanFD3NetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean		
RSSHAOFDPLRMNCD F	RangeSeaSurfaceHeightAnomalyOceanFD3PLRMNetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean		
RSSHAONCDF	RangeSeaSurfaceHeightAnomalyOceanNetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean		

RSWHOEPFDNCDF	RangeSignificantWaveHeightOceanExcludingPolarFD2NetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RSWHOEPFDPLRMNC DF	RangeSignificantWaveHeightOceanExcludingPolarFD2PLRMNetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RSWHOEPNCDF	RangeSignificantWaveHeightOceanExcludingPolarNetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
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