



# IDEAS-QAHE®

## 1. Overview

<b>Report Production:</b>	06-Jan-2023	
Processor Used:	CryoSat Ocean Processor	
Data Used:	Intermediate Ocean Products (IOP) L1B, L2 & P2P Science Data	

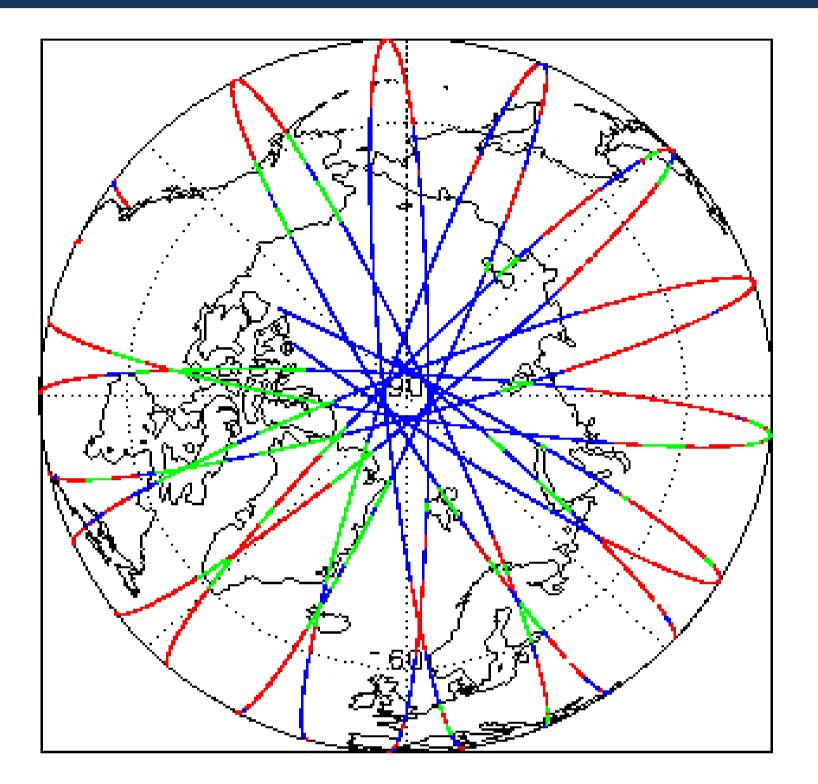
### We would love to hear from you!

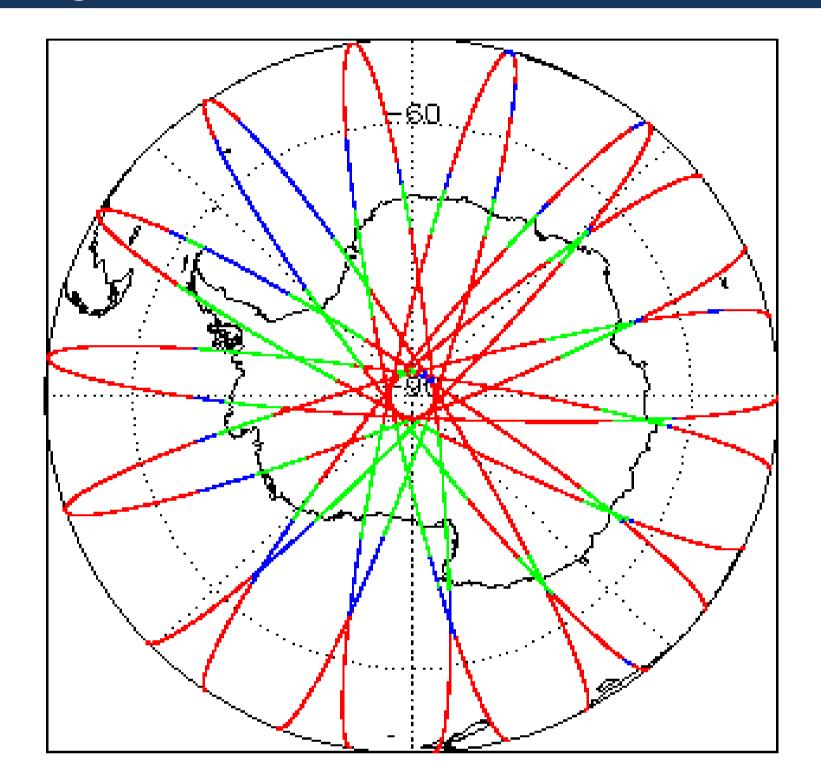
Please let us know your feedback about these daily quality reports: What do you like/ dislike? What quality information do you need? Send your feedback to cs2\_qc\_team@telespazio.com

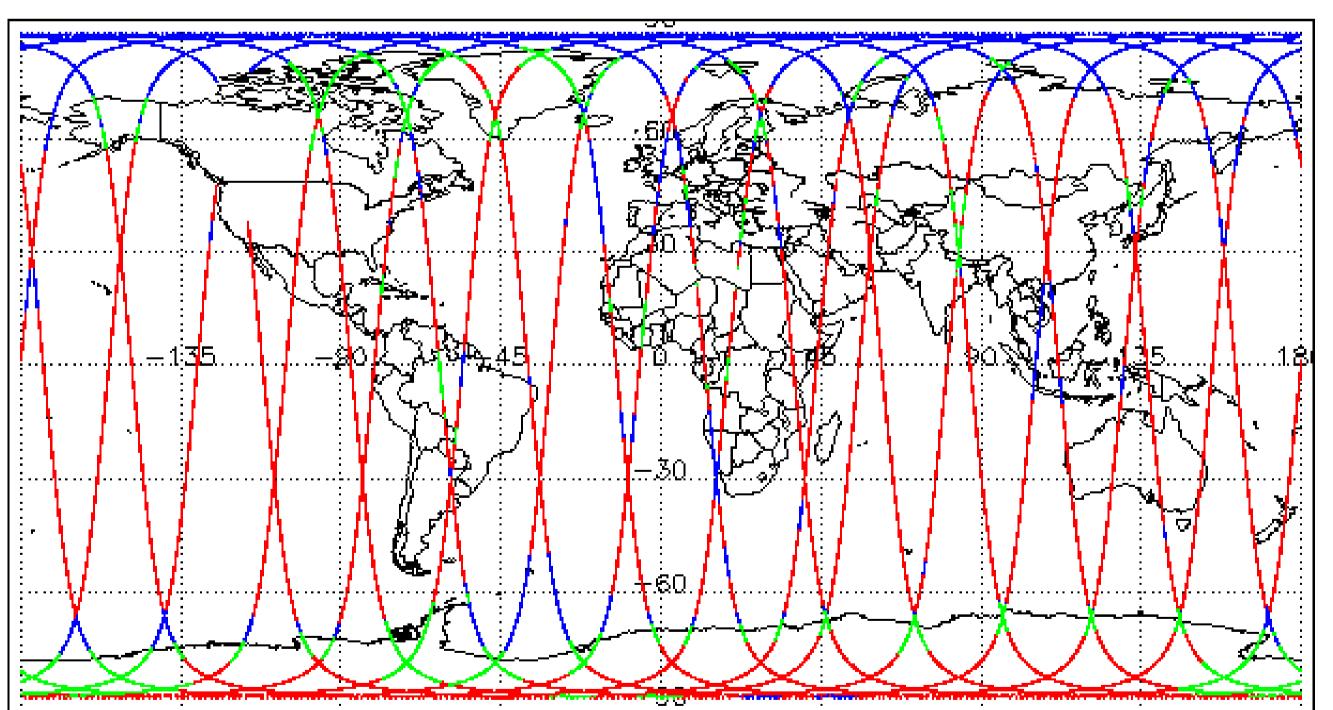
Check	L1 & L2	P2P
Server check: science-pds.cryosat.esa.int	Nominal	Nominal
Server check: calval-pds.cryosat.esa.int	Nominal	Nominal
Product Software Check	Nominal	Nominal
Product Format Check	Nominal	Nominal
Product Header Analysis	Nominal	Nominal
Auxiliary Data File Usage Check	Nominal	Nominal
Auxiliary Correction Error Check	See Section 5.4	See Section 6.4
Measurement Confidence Data Check	See Section 4.5, 4.6 and 5.5	See Section 6.5
Range, SWH & Backscatter Measurement Check	See Section 5.6	See Section 6.6
Ocean Retracking Quality Check	See Section 5.7	See Section 6.7
QCC Error/ Warning Check	See Section 7.2	See Section 7.2

Mission / Instrument News		
02-Jan-2023	None	
03-Jan-2023	None	
04-Jan-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
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## 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).

Number of products with errors:

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 incons	istencies and/or errors raised by the ground-segment processing chain.
Number of products with errors: 0		
4.3 L1B Auxilary Data File Usage Check		
Each product is checked for missing Data Set Descriptors with respect to a pre-	-determined baseline and also to ch	neck the validity of Auxiliary Data Files is correct.
Number of products with errors: 0		
4.4 L1B Auxiliary Correction Error Check		
CryoSat L1B data includes a correction error flag for each measurement record	l. The bit value of this flag indicates	any problems when set.
Number of products with errors: 0		
4.5 L1B Measurement Confidence Data Check		
CryoSat L1B data includes a measurement confidence flag for each measurement	ent record. The bit value of this flag	indicates any problems when set.
> Attitude Correction Missing: This flag is currently set in error for IOPR prod update.	lucts due to a configuration issue. T	he attitude correction is actually not missing. This will be resolved in the next SW
Number of products with errors: 1		
Product	Test Failed	Description
CS_OFFL_SIR_IOPM1B_20230103T101337_20230103T103928_C001	Power scaling error	There is an error in the scaling of the L1B waveform for one or more records
4.6 L1B Waveform Group Data Check		
CryoSat L1B data includes a waveform data flag for each measurement record.	. The bit value of this flag indicates	any problems when set.

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

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Number of products with errors:

Product	Test Failed	Description
CS_OFFL_SIR_IOPM1B_20230103T041609_20230103T044257_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPM1B_20230103T083134_20230103T083523_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPM1B_20230103T182545_20230103T183726_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230103T005352_20230103T005503_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230103T015344_20230103T015537_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230103T064450_20230103T064611_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230103T095817_20230103T100302_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230103T123042_20230103T123207_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230103T132200_20230103T132317_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230103T162744_20230103T163153_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230103T180418_20230103T180541_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230103T180957_20230103T181054_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230103T182430_20230103T182545_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230103T204301_20230103T204728_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230103T021136_20230103T021432_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230103T053720_20230103T054421_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230103T082112_20230103T082214_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230103T142332_20230103T142559_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230103T144904_20230103T150308_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230103T164041_20230103T164231_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230103T201039_20230103T201855_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

0

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.

### **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 Corection, Wet Tropospheric Correction, Inverse Barometric Correction and the U-Wind and V-Wind components of the ECMWF model wind vector. This is a known anomaly (CRYO-COP-3) and will be resolved in a future IPF update. The affected products are not reported in the table below.

> Sea State Bias & Sea State Bias PLRM: The error value is currently set for products over sea ice, but this is to be expected.

- > 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.

### Number of products with errors:

Product	Test Failed	Description
CS_OFFL_SIR_IOPM_2_20230103T094935_20230103T095034_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_20230103T015344_20230103T015537_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_20230103T022358_20230103T022523_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_20230103T023041_20230103T023346_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_20230103T040343_20230103T040645_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_20230103T040942_20230103T041321_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_20230103T054421_20230103T054655_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_20230103T063929_20230103T064048_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_20230103T071959_20230103T072537_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_20230103T081902_20230103T082112_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_20230103T090145_20230103T090321_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_20230103T091212_20230103T091415_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_20230103T095817_20230103T100302_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_20230103T105002_20230103T105229_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_20230103T122100_20230103T122452_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	Topography (solution 1) and tidal corrections for one or more records
CS_OFFL_SIR_IOPN_2_20230103T131126_20230103T131223_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_20230103T140046_20230103T140359_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_20230103T140914_20230103T141025_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_20230103T153814_20230103T154234_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_20230103T154817_20230103T154938_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_20230103T172554_20230103T172741_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_20230103T180957_20230103T181054_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_20230103T194753_20230103T195004_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_20230103T203407_20230103T203621_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_20230103T204301_20230103T204728_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_20230103T212436_20230103T212828_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_20230103T221424_20230103T221657_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_20230103T222418_20230103T222601_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_20230102T235533_20230103T000312_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_20230103T013504_20230103T014131_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_20230103T014131_20230103T014429_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_20230103T031117_20230103T031250_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_20230103T031318_20230103T032031_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_20230103T032031_20230103T032215_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_20230103T045447_20230103T045928_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_20230103T045928_20230103T050050_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_20230103T063255_20230103T063809_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_20230103T063809_20230103T063928_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_20230103T081450_20230103T081527_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_20230103T081527_20230103T081902_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_20230103T095053_20230103T095816_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_20230103T113046_20230103T113848_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_20230103T130129_20230103T130306_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_20230103T131223_20230103T132013_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_20230103T144905_20230103T150308_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_20230103T163154_20230103T163908_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_20230103T181055_20230103T181630_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_20230103T194002_20230103T194103_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_20230103T195004_20230103T195657_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_20230103T212828_20230103T213341_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_20230103T230615_20230103T231403_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.

1

#### Number of products with errors:

Product	Test Failed	Description
CS_OFFL_SIR_IOPM_2_20230103T101337_20230103T103928_C001	Power scaling error	There is an error in the scaling of the L1B waveform for one or more records

### 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.

Number of products with errors:

Product	Test Failed	Description
CS_OFFL_SIR_IOPM_2_20230103T000751_20230103T001131_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_20230103T001623_20230103T003534_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_20230103T003736_20230103T004347_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_20230103T004546_20230103T005352_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_20230103T005736_20230103T013112_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_20230103T015305_20230103T015329_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_20230103T021432_20230103T022318_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_20230103T022523_20230103T023040_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_20230103T023615_20230103T025851_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_20230103T030136_20230103T031116_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_20230103T032421_20230103T032712_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_20230103T033440_20230103T033932_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_20230103T034245_20230103T034746_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_20230103T034934_20230103T040105_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_20230103T040645_20230103T040941_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_20230103T041609_20230103T044257_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_20230103T044436_20230103T044833_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_20230103T050501_20230103T050512_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_20230103T050559_20230103T051251_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_20230103T051305_20230103T053720_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_20230103T054655_20230103T054849_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_20230103T055116_20230103T055337_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_20230103T055518_20230103T060025_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_20230103T060117_20230103T061154_C001		A, SWH and Backscatter Quality Flags Ind Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T061157_20230103T062249_C001		A, SWH and Backscatter Quality Flags ad Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T062633_20230103T062635_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality for one or more records	ackscatter Quality Flags have been set
CS_OFFL_SIR_IOPM_2_20230103T064048_20230103T064450_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality for one or more records	ackscatter Quality Flags have been set
CS_OFFL_SIR_IOPM_2_20230103T064611_20230103T070135_C001		A, SWH and Backscatter Quality Flags Ind Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T071034_20230103T071959_C001		A, SWH and Backscatter Quality Flags ad Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T072537_20230103T072806_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality for one or more records	ackscatter Quality Flags have been set
CS_OFFL_SIR_IOPM_2_20230103T072832_20230103T073256_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality for one or more records	ackscatter Quality Flags have been set
CS_OFFL_SIR_IOPM_2_20230103T073449_20230103T074940_C001		A, SWH and Backscatter Quality Flags Ind Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T075120_20230103T075656_C001		A, SWH and Backscatter Quality Flags Ind Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T083134_20230103T083523_C001		A, SWH and Backscatter Quality Flags Ind Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T083646_20230103T090046_C001		A, SWH and Backscatter Quality Flags ad Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T090321_20230103T091211_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality for one or more records	ackscatter Quality Flags have been set
CS_OFFL_SIR_IOPM_2_20230103T091424_20230103T093811_C001		A, SWH and Backscatter Quality Flags Ind Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T101337_20230103T103928_C001		A, SWH and Backscatter Quality Flags Ind Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T104250_20230103T104431_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality for one or more records	ackscatter Quality Flags have been set
CS_OFFL_SIR_IOPM_2_20230103T104536_20230103T105002_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality for one or more records	ackscatter Quality Flags have been set
CS_OFFL_SIR_IOPM_2_20230103T105251_20230103T112058_C001		A, SWH and Backscatter Quality Flags Ind Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T114715_20230103T114958_C001		A, SWH and Backscatter Quality Flags Ind Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T115114_20230103T121821_C001		A, SWH and Backscatter Quality Flags Ind Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T122452_20230103T123041_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality for one or more records	ackscatter Quality Flags have been set
CS_OFFL_SIR_IOPM_2_20230103T123219_20230103T125000_C001		A, SWH and Backscatter Quality Flags Ind Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T125145_20230103T125743_C001		A, SWH and Backscatter Quality Flags Ind Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T130948_20230103T131035_C001		A, SWH and Backscatter Quality Flags ad Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T132317_20230103T135813_C001		A, SWH and Backscatter Quality Flags Ind Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T140359_20230103T140914_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality for one or more records	ackscatter Quality Flags have been set

CO. 011. 06. 004. 2.2023/06 <sup>11</sup> 44-03. 2020. 2017 64-03. 2001.     DOD MINES FORS. 18: 4, 3     Dod MINES FORS. 18: 4, 3       CA. 071. 18: 004. 2.2023/06 <sup>11</sup> 44-03. 2020. 2017 64-03. 2001.     Dor MINES FORS. 18: 4, 3     Dod MINES FORS. 18: 4, 3       CA. 071. 18: 004. 2.2023/06 <sup>11</sup> 44-03. 2020. 2017 64-03. 2001.     Dor MINES FORS. 18: 4, 3     Dod MINES FORS. 18: 4, 3       CA. 071. 18: 004. 2.2023/06 <sup>11</sup> 44-03. 2020. 2017 64-03. 2001.     Dor MINES FORS. 18: 4, 3     Dod MINES FORS. 18: 4, 3       CA. 071. 18: 004. 2.2023/06 <sup>11</sup> 44-03. 2020. 2017 64-03. 2001.     Dor MINES FORS. 18: 4, 3     Dod MINES FORS. 18: 4, 3       CA. 071. 18: 004. 2.2023/06 <sup>11</sup> 44-03. 2020. 2017 64-03. 2001.     Dor MINES FORS. 18: 4, 3     Dod MINES FORS. 18: 4, 3       CA. 071. 18: 004. 2.2023/01 <sup>11</sup> 640. 2007. 2017 64-00. 2001.     DOD MINES FORS. 18: 4, 3     Dod MINES FORS. 19: 4, 3       CA. 011. 19: 104. 2023 2010. 2116 60. 2007. 2017 640. 2001.     DOD MINES FORS. 18: 4, 3     Dod MINES FORS. 18: 4, 3       CA. 011. 19: 104. 2002 2010. 2116 60. 2007. 2017 640. 2001.     DOD MINES FORS. 18: 4, 3     Dod MINES FORS. 18: 4, 3       CA. 011. 19: 104. 2007. 2100. 2017 74: 104. 2001.     DOD MINES FORS. 18: 4, 3     Dod MINES FORS. 18: 4, 3       CA. 011. 19: 104. 2002. 2017 74: 104. 2001.     DOD MINES FORS. 18: 4, 3     Dod MINES FORS. 18: 4, 3       CA. 011. 19: 104. 2017 210: 104. 2017 74: 104. 2017 74: 104. 2017 74: 104. 2017 74: 104. 2017 74: 104. 2017 74: 104. 2017 74: 104. 2017 74: 104. 2017 74: 104. 2017 74: 104. 2017 74: 104. 2017 74: 104. 2017 74: 104. 2017 74: 104. 201	CS_OFFL_SIR_IOPM_2_20230103T141111_20230103T141357_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
CH, LH, LAUCHAN, LAURAND, MARK, VOTHARD, COL         and based to get all the based of calls         per LOSA Anter force of the calls of calls           CH, SH, LENG, JANG, JANON, MARK, AND	CS_OFFL_SIR_IOPM_2_20230103T144219_20230103T144320_C001		
05. 07T., SR, 107Y, 2. 2224/107T SDR ALCOUNT IN ADD, COLI     are, Descaption and Audy, SCOOL     performance and an analytic score and analytic scor	CS_OFFL_SIR_IOPM_2_20230103T144628_20230103T144904_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
CH_UHSK_CH_U_UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU	CS_OFFL_SIR_IOPM_2_20230103T150309_20230103T151205_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
Deck         Exclusion         Deck	CS_OFFL_SIR_IOPM_2_20230103T151451_20230103T153649_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
Cite J. S. (1999) 2. 2020/10211-0222. 20	CS_OFFL_SIR_IOPM_2_20230103T154235_20230103T154401_C001	<b>C P</b>	
CS_DFF_SR_OPV_2.2020010715022_2020100116035_0001       and Beckeele Calabi, CODD       and the CODD Allinear Renge and Beckeeler Calabi, CODD         CS_DFF_SR_OPV_2.20200107116051_2020100116035_0001       Clean Allerear Renge and Beckeeler Calabi, CODD       The Comm. Number Renge and Beckeeler Calabi, CODD         CS_DFF_SR_OPV_2.20200107116051_20202100116128_0001       Clean Allerear Renge Still, SVII       The Comm. Number Renge and Beckeeler Calabi, CODD         CS_DFF_SR_OPV_2.20200107116292_2020100116296_0001       Clean Allerear Renge Still, SVII       The Comm. Number Renge Still, SVII         CS_DFF_SR_OPV_2.20200107116292_2020100116296_0001       Clean Allerear Renge Still, SVII       The Comm. Number Renge Still, SVII         CS_DFF_SR_OPV_2.20200107116296_2020100116296_0001       Clean Allerear Renge Still, SVII       The Comm. Number Renge Still, SVII and Dackeester Calabi, Fagi and Beckeester Calabi, COD         CS_DFF_SR_OPV_2.20200107116291_20201001	CS_OFFL_SIR_IOPM_2_20230103T154408_20230103T154816_C001	<b>C F</b>	
Ed., OFTL, SR. (JPRL 2, 2020) 1371103 10, 2020 (107116122), 001     Introduced and the codd Alterest Range and Backaster Codely Flags     Ind Backaster Codely     Ind Backaster Codel     Ind     Ind Backaster Codel     Ind     Ind Backaster Codel     Ind     Ind     Ind Backaster Codel     Ind     Ind Backaster Codel     Ind     Ind	CS_OFFL_SIR_IOPM_2_20230103T155023_20230103T160323_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
CS_OFTL_SIR_UPM_2_202301007161228_00100716208_0001       and Badesate-Quality_COGO       and the COGO Almeet Range and Badesate-Quality Trage Name Series         CS_OFTL_SIR_UPM_2_20230107162080_00201007162086_0001       Comon Almeeter Range Siste, Sixte, Sixte       The Occean Almeeter Range Siste, Sixte, Sixte Puality Flags Inversion         CS_OFTL_SIR_UPM_2_202301071162080_002010071162086_0001       Comon Almeeter Range Sixte,	CS_OFFL_SIR_IOPM_2_20230103T160510_20230103T161228_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
C5       OFFL_SR_IOFV_2_20230100T162698_0020110210308.0001       and Backsoater Quality, CCOS       and the CCOS Alteriest Range StateSoater Quality, Flags trave been set for one more seconds         C5       OFFL_SR_IOFV_2_20230100T164584_02020100T164038_0001       CCOG Alteriest Range Quality, CCOS       The OCOM Alteriest Range StateSoater Quality         C5       OFFL_SR_IOFV_2_20230100T164552_02020100T164038_0001       CCOG Alteriest Range StateSoater Quality       The OCOM Alteriest Range StateSoater Quality         C5       OFFL_SR_IOFV_2_20220100T164552_02020100T1764038_0001       CCOG Alteriest Range StateSoater Quality       The OCOM Alteriest Range StateSoater Quality         C5       OFFL_SR_IOFV_2_20220100T164513_02020100T17707000       CCOG Alteriest Range StateSoater Quality       The OCOM Alteriest Range StateSoater Quality       The OCOM Alteriest Range StateSoater Quality         C5       OFFL_SR_IOFV_2_20220100T177200_0001       CCOG Alteriest Range StateSoater Quality       The OCOM Alteriest Range StateSoater Quality<	CS_OFFL_SIR_IOPM_2_20230103T161323_20230103T161729_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
No. DITL_SRL_OPML2_2020103116/382_2020103116/382_02200103116/382_0220103116/382_0220103116/382_0220103116/382_02201031	CS_OFFL_SIR_IOPM_2_20230103T162509_20230103T162608_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
GS_OFFL_SIR_JOPM_2_20230103T164512_20230103T164518_20230103T171691       and Backscatter Quality Rage have been Altimeter Range, SSM, SWH and Backscatter Quality Flags have been Altimeter Range, SSM, SWH and Backscatter Quality Flags have been Altimeter Range, SSM, SWH and Backscatter Quality Flags have been at interest Range and Backscatter Quality Flags have been at interest Range, SSM, SWH and Backscatter Quality Flags have been at interest Range and Backscatter Quality Flags have been at interest Range and Backscatter Quality Flags have been at interest Range and Backscatter Quality Flags have been at interest Range and Backscatter Quality Flags have been at interest Range and Backscatter Quality Flags have been at interest Range, SSM, SWH and Backscatter Quality Flags have been at interest Range, SSM, SWH and Backscatter Quality Flags have been at interest Range, SSM, SWH and Backscatter Quality Flags have been at interest Range, SSM, SWH and Backscatter Quality Flags have been at interest Range, SSM, SWH and Backscatter Quality Flags have been at interest Range, SSM, SWH and Backscatter Quality Flags have been at interest Range, SSM, SWH and Backscatter Quality Flags have been at interest Range, SSM, SWH and Backscatter Quality Flags have been Altimeter Range, SSM, SWH and Backscatter Quality Flags have been Altimeter Range, SSM, SWH and Backscatter Quality Flags have been Altimeter Range, SSM, SWH and Backscatter Quality Flags have been Altimeter Range, SSM, SWH and Backscatter Quality Flags have been Altimeter Range, SSM, SWH and Backscatter Quality Flags have been Altimeter Range, SSM, SWH and Backscatter Quality Flags have been at indicator Range, SSM, SWH and Backscatter Quality Flags have been at indicator Range, SSM, SWH and Backscatter Quality Flags have been at indicator Range, SSM, SWH and Backscatter Quality Flags have been at indicator Range, SSM, SWH and Backscatter Quality Flags have been at indicator Range and Backscatter Quality Flags have been at in	CS_OFFL_SIR_IOPM_2_20230103T163946_20230103T164038_C001	•	
CS_OFFL_SIR_IOPM_2_20230103T164913_80220103T171607_C001       and Backscatter_Quality_Flags have been Alimeter Range and Backscatter_Quality_Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T1717302_20230103T172300_C001       OCCO Alimeter Range and Backscatter Quality_Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T172300_20230103T174631_C001       OCCO Alimeter Range and Backscatter Quality_Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T174651_20230103T174651_C001       OCCon Alimeter Range and Backscatter Quality_Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T174651_20230103T18076_C001       OCcan Alimeter Range, SSHA, SWH and Backscatter Quality_Flags have been alimiter Range and Backscatter Qua	CS_OFFL_SIR_IOPM_2_20230103T164352_20230103T164816_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
US_OFFL_SIR_IOPM_2_202301031173402_202301031174631_C001         Backscatter Quality         for one or more records           CS_OFFL_SIR_IOPM_2_202301031174631_C001         and Backscatter Quality         The Ocean Attimuter Range SSHA_SWH and Backscatter Quality         The Ocean Attimuter Range and Backscatter Quality         The Ocean Attimuter Range and Backscatter Quality           CS_OFFL_SIR_IOPM_2_202301031174654_202301031180418_C001         Coean Attimuter Range SSHA_SWH and Backscatter Quality         The Ocean Attimuter Range and Backscatter Quality         The Ocean Attimuter Range and Backscatter Quality           CS_OFFL_SIR_IOPM_2_202301031178554_202301031183728_C001         Coean Attimuter Range SSHA_SWH Attimuter Range SSHA_SWH and Backscatter Quality         The Ocean Attimuter Range SSHA_SWH and Backscatter Quality         The Ocean Attimuter Range and Backscatter Quality         Flags have been set for one or more records           CS_OFFL_SIR_JOPM_2_202301031183786_C001         Coean Attimuter Range SSHA_SWH Attimuter Range and Backscatter Quality         The Ocean Attimuter Range and Backscatter Quality Flags have been set for one or more records           CS_OFFL_SIR_JOPM_2_20230103118591_C001         Coean Attimuter Range SSHA_SWH Attimuter Range and Backscatter Quality         The OCean Attimuter Range and Backscatter Quality Flags have been set for one or more records           CS_OFFL_SIR_IOPM_2_202301031180500_C001         Decan Attimuter Range ASHA_SWH Attimuter Range and Backscatter Quality         The OCean Attimuter Range and Backscatter Quality         The OCean Attimuter Range and Backscatter Quality         The OCe	CS_OFFL_SIR_IOPM_2_20230103T164913_20230103T171607_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T174631_0001       and Backscatter Quality, COCG       and the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCGC Altimeter Range and Backscatter Quality Flags have been at the OCG	CS_OFFL_SIR_IOPM_2_20230103T171733_20230103T172300_C001	•	
CS_OFFL_SIR_IOPM_2_20230103T174654_20230103T180418_C001       and Backscatter Quality, COGG       and the COGG Altimeter Range and Backscatter Quality Flags have been Altimeter Range SIAL, SWH and Backscatter Quality Flags have been Altimeter Range Altisther Quality Flags have been Altimeter Range Altimeter	CS_OFFL_SIR_IOPM_2_20230103T173402_20230103T174631_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T182545_20230103T183726_C001       and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality est for one or more records         CS_OFFL_SIR_IOPM_2_20230103T183930_20230103T185511_C001       Ocean Altimeter Range and Backscatter Quality and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, Flags have been Altimeter Range and Backscatter Quality, COCG         CS_OFFL_SIR_IOPM_2_20230103T185700_20230103T1955_C001       OCCOG Altimeter Range Quality, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality       The OCOG Altimeter Range, and Backscatter Quality Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T19107_20230103T191059_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, COCG Altimeter Range, SSHA, SWH and Backscatter Quality, Flags have been altimeter Range, SSHA, SWH and Backscatter Quality, Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, Flags have been Altimeter Range and Backscatter Quality, Flags, and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been altimeter Range and Backscatte	CS_OFFL_SIR_IOPM_2_20230103T174654_20230103T180418_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T183930_20230103T185511_C001       and Backscatter Quality       and the OCOG Altimeter Range and Backscatter Quality       and the OCOG Altimeter Range and Backscatter Quality       File OCOG Alti	CS_OFFL_SIR_IOPM_2_20230103T182545_20230103T183726_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T185700_20230103T190159_0001       Backscatter Quality       for one or more records         CS_OFFL_SIR_IOPM_2_20230103T191107_20230103T191908_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, COOG Altimeter Range and Backscatter Quality, COOG Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T192758_20230103T193909_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, Flags have been altimeter Range and Backscatter Quality, Plags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T201855_20230103T20359_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Backscatter Quality, OCOG Backscatter Quality, OCOG Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T204726_20230103T204112_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, Plags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T204736_20230103T212142_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T204736_20230103T21	CS_OFFL_SIR_IOPM_2_20230103T183930_20230103T185511_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T191107_20230103T191908_C001       and Backscatter Quality, OCOG Attimeter Range and Backscatter Quality       and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T192758_20230103T193909_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       The Ocean Altimeter Range, SSHA, SWH and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       The Ocean Altimeter Range, SSHA, SWH and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       The Ocean Altimeter Range, SSHA, SWH and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T203621_20230103T204112_C001       OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Backscatter Quality, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T204736_20230103T212142_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T204736_20230103T212142_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T204735_20230103T212142_C001       Ocean Altimeter Ra	CS_OFFL_SIR_IOPM_2_20230103T185700_20230103T190159_C001	<b>C P</b>	
CS_OFFL_SIR_IOPM_2_20230103T192758_20230103T193909_C001       and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T201855_20230103T203359_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       The Ocean Altimeter Range, SSHA, SWH and the OCOG Altimeter Range and Backscatter Quality       The Ocean Altimeter Range, SSHA, SWH and the OCOG Altimeter Range and Backscatter Quality         CS_OFFL_SIR_IOPM_2_20230103T203621_20230103T204112_C001       OCOG Altimeter Range Quality, OCOG Backscatter Quality       The OCCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T204736_20230103T212142_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records       The OCCG Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records	CS_OFFL_SIR_IOPM_2_20230103T191107_20230103T191908_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T201855_20230103T203359_C001       and Backscatter Quality, OCOG       and the OCOG Altimeter Range and Backscatter Quality       and the OCOG Altimeter Range and Backscatter Quality       set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T203621_20230103T204112_C001       OCOG Altimeter Range Quality, OCOG       The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T204736_20230103T212142_C001       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_IOPM_2_20230103T204736_20230103T212142_C001       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_IOPM_2_20230103T2121235_20230103T212142_C001       OCOG Altimeter Range Quality, OCOG       The Ocean Altimeter Range and Backscatter Quality Flags have been set for one or more records	CS_OFFL_SIR_IOPM_2_20230103T192758_20230103T193909_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_202301031203621_202301031204112_C001       Backscatter Quality       for one or more records         CS_OFFL_SIR_IOPM_2_202301031204736_20230103T212142_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       The Ocean Altimeter Range, SSHA, SWH and the OCOG Altimeter Range and Backscatter Quality Flags set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T212335_20230103T212142_C001       OCOG Altimeter Range Quality, OCOG OCOG Altimeter Range and Backscatter Quality Flags have been set	CS_OFFL_SIR_IOPM_2_20230103T201855_20230103T203359_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
CS_OFFL_SIR_IOPM_2_20230103T204736_20230103T212142_C001       and Backscatter Quality, OCOG       and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records         CS_OFFL_SIR_IOPM_2_20230103T2122335_20230103T212435_C001       OCOG Altimeter Range Quality, OCOG       The OCOG Altimeter Range and Backscatter Quality Flags have been set	CS_OFFL_SIR_IOPM_2_20230103T203621_20230103T204112_C001	•	
	CS_OFFL_SIR_IOPM_2_20230103T204736_20230103T212142_C001	and Backscatter Quality, OCOG	and the OCOG Altimeter Range and Backscatter Quality Flags have been
	CS_OFFL_SIR_IOPM_2_20230103T212335_20230103T212435_C001		

CS_OFFL_SIR_IOPM_2_20230103T214848_20230103T214911_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_20230103T214918_20230103T221012_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_20230103T221059_20230103T221403_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_20230103T221657_20230103T222028_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_20230103T222051_20230103T222418_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_20230103T222643_20230103T225519_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_20230103T225533_20230103T225557_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_20230103T232614_20230103T235303_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_20230103T235445_20230103T235943_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_20230103T081902_20230103T082112_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_20230103T082650_20230103T082812_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_20230103T131126_20230103T131223_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_20230103T132200_20230103T132317_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_20230103T213341_20230103T213415_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_20230103T232218_20230103T232323_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_20230103T032225_20230103T032300_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_20230103T050418_20230103T050500_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_20230103T103929_20230103T104122_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_20230103T112854_20230103T113041_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_20230103T130621_20230103T130641_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_20230103T154938_20230103T155023_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_20230103T182112_20230103T182121_C001	<b>C</b>	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPR_2_20230103T221403_20230103T221424_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_20230103T222601_20230103T222643_C001	<b>C</b>	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

### L2 Quality Flags (20 Hz PLRM)

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

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

> OCOG Altimeter Range and Backscatter PLRM Quality Flags: These flags are currently set for occasional records over continental ice.

Product	Test Failed	Description
CS_OFFL_SIR_IOPN_2_20230103T000458_20230103T000621_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_20230103T004422_20230103T004546_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_20230103T013112_20230103T013241_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_20230103T013331_20230103T013503_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_20230103T020421_20230103T020551_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_20230103T023041_20230103T023346_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_20230103T033933_20230103T034245_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_20230103T040343_20230103T040645_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_20230103T050151_20230103T050328_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_20230103T054849_20230103T055115_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_20230103T055337_20230103T055514_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_20230103T062433_20230103T062633_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_20230103T064450_20230103T064611_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_20230103T070710_20230103T070815_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_20230103T071959_20230103T072537_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_20230103T081902_20230103T082112_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_20230103T082214_20230103T082444_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_20230103T090145_20230103T090321_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_20230103T091212_20230103T091415_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_20230103T093846_20230103T094152_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_20230103T094248_20230103T094423_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_20230103T100400_20230103T100522_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_20230103T122100_20230103T122452_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_20230103T130641_20230103T130804_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_20230103T132200_20230103T132317_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_20230103T142743_20230103T142800_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_20230103T153814_20230103T154234_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_20230103T161228_20230103T161323_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_20230103T162744_20230103T163153_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_20230103T172554_20230103T172741_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_20230103T181630_20230103T181719_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_20230103T192443_20230103T192613_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_20230103T192614_20230103T192758_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_20230103T194415_20230103T194708_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_20230103T194753_20230103T195004_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_20230103T212436_20230103T212828_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_20230103T214541_20230103T214848_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_20230103T221424_20230103T221657_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_20230103T231701_20230103T231711_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_20230103T003535_20230103T003735_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_20230103T013304_20230103T013331_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_20230103T013504_20230103T014131_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_20230103T014830_20230103T014917_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_20230103T021137_20230103T021432_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_20230103T031318_20230103T032031_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_20230103T032031_20230103T032215_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_20230103T040246_20230103T040343_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_20230103T045052_20230103T045107_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_20230103T045311_20230103T045430_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_20230103T045447_20230103T045928_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_20230103T063809_20230103T063928_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

	OCOG Altimeter Range Quality PLRM,	The OCOG Range and Backscatter Quality Flags have been set for one or		
CS_OFFL_SIR_IOPR_2_20230103T070136_20230103T070409_C001	OCOG Backscatter Quality	more records		
CS_OFFL_SIR_IOPR_2_20230103T074941_20230103T075120_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_20230103T075656_20230103T075828_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_20230103T081301_20230103T081407_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_20230103T081527_20230103T081902_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_20230103T082112_20230103T082214_C001	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_20230103T095053_20230103T095816_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_20230103T113046_20230103T113848_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_20230103T130621_20230103T130641_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_20230103T130805_20230103T130842_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_20230103T131223_20230103T132013_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_20230103T132139_20230103T132141_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_20230103T141922_20230103T142330_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_20230103T142332_20230103T142559_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_20230103T144349_20230103T144628_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_20230103T144905_20230103T150308_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_20230103T163154_20230103T163908_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_20230103T164041_20230103T164231_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_20230103T172741_20230103T173402_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_20230103T181055_20230103T181630_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_20230103T182149_20230103T182153_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_20230103T190623_20230103T190939_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_20230103T194002_20230103T194103_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_20230103T194246_20230103T194415_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_20230103T194709_20230103T194752_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_20230103T195004_20230103T195657_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_20230103T201040_20230103T201855_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_20230103T212142_20230103T212310_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_20230103T230615_20230103T231403_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_20230103T231410_20230103T231647_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG 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:

207

### **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.

 Number of products with errors:
 65

 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.

0

0

## 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:

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

Number of products with errors:

### 6.3 P2P Auxiliary Data File Usage Check

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

Number of products with errors:

#### 0

### 6.4 P2P Auxiliary Correction Error Check

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

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

> ECMWF Meteo Corrections: Currently the following corrections are not computed over CONTINENTAL ICE: Dry Tropospheric Corection, Wet Tropospheric Correction, Inverse Barometric Correction and the U-Wind and V-Wind components of the ECMWF model wind vector. This is a known anomaly (CRYO-COP-3) and will be resolved in a future IPF update. The affected products are not reported in the table below.

> Sea State Bias & Sea State Bias PLRM: The error value is currently set for products over sea ice, but this is to be expected.

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

30

- > 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.

Number of products with errors:

Product	Test Failed	Description
CS_OFFL_SIR_IOP_220230102T231116_20230103T000053_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_220230103T000053_20230103T005031_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_220230103T005031_20230103T014008_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_220230103T014008_20230103T022945_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_220230103T022945_20230103T031922_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_220230103T031922_20230103T040900_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_220230103T040900_20230103T045837_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_220230103T045837_20230103T054815_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_220230103T054815_20230103T063751_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_220230103T063751_20230103T072729_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_220230103T072729_20230103T081706_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_220230103T081706_20230103T090644_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_220230103T090644_20230103T095621_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_220230103T095621_20230103T104559_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_220230103T104559_20230103T113536_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_220230103T113536_20230103T122514_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	Topography (solution 1), and tidal corrections for one or more records
CS_OFFL_SIR_IOP_220230103T122514_20230103T131450_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_220230103T131450_20230103T140428_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_220230103T140428_20230103T145405_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_220230103T145405_20230103T154343_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_220230103T154343_20230103T163320_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_220230103T163320_20230103T172257_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_220230103T172257_20230103T181234_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_220230103T181234_20230103T190212_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_220230103T190212_20230103T195149_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_220230103T195149_20230103T204127_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_220230103T204127_20230103T213104_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_220230103T213104_20230103T222042_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_220230103T222042_20230103T231018_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_220230103T231018_20230103T235956_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)

### 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:

1

Product	Test Failed	Description	
CS_OFFL_SIR_IOP_220230103T095621_20230103T104559_C001	Power scaling error	There is an error in the scaling of the L1B waveform for one or more records	

### 6.6 P2P Measurement Quality Flag Check

#### P2P Quality Flags (20 Hz)

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

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

### 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:

### 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:

#### 29

30

### P2P Retracking Flags PLRM

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

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

Number of products with errors:

## 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	203	203	3	200	0
SIR_IOPR1B	155	106	3	103	0
SIR_IOPN1B	106	155	0	155	0
SIR_IOPM_2	203	203	149	54	0
SIR_IOPR_2	155	106	45	61	0
SIR_IOPN_2	106	155	69	86	0
SIR_IOP_P2P	30	30	0	30	0

### 7.1 QCC Errors

Number of QCC reports with errors:

0

### 7.2 QCC Warnings

Product Type	BCSHNCDF	MVIOEPFDNCDF	MVIOEPNCDF	MVIONCDF	RBSZOPOEPFDNCDF	RBSZOPOEPFDPLRMNCD	RBSZOPOEPNCDF
SIR_IOPM1B	200	0	0	0	0	0	0
SIR_IOPM_2	0	45	41	0	44	0	36
SIR_IOPN1B	101	0	0	0	0	0	0
SIR_IOPN_2	0	9	30	3	24	25	15
SIR_IOPR1B	145	0	0	0	0	0	0
SIR_IOPR_2	0	30	48	0	25	24	9

Product Type	RNELPOTONCDF	RPEPOPFDLRMNCDF	RPEPOPFDPLRMSARNCI	RPEPOPFDPLRMSINNCD	RPEPOPFDSARNCDF	RPEPOPFDSINNCDF	RPEPOPLRMNCDF
SIR_IOPM1B	0	0	0	0	0	0	0
SIR_IOPM_2	0	38	0	0	0	0	30
SIR_IOPN1B	0	0	0	0	0	0	0
SIR_IOPN_2	1	0	0	15	0	29	0
SIR_IOPR1B	0	0	0	0	0	0	0
SIR_IOPR_2	6	0	43	0	50	0	0

Product Type	RPEPOPSARNCDF	RPEPOPSINNCDF	RSSBCONCDF	RSSHAOFDNCDF	RSSHAOFDPLRMNCDF	RSSHAONCDF	RSWHOEPFDNCDF
SIR_IOPM1B	0	0	0	0	0	0	0
SIR_IOPM_2	0	0	2	24	0	3	37
SIR_IOPN1B	0	0	0	0	0	0	0
SIR_IOPN_2	0	27	19	36	46	29	26
SIR_IOPR1B	0	0	0	0	0	0	0
SIR_IOPR_2	45	0	6	62	31	14	35

Product Type	RSWHOEPFDPLRMNCDF	RSWHOEPNCDF	SPHRTASCNSNCDF	SPHRTASCNSNCDF	SCSTODHRNCDF	SCSTODNCDF	-
SIR_IOPM1B	0	0	0	1	0	0	
SIR_IOPM_2	0	0	0	1	0	0	
SIR_IOPN1B	0	0	1	0	46	2	
SIR_IOPN_2	23	10	1	0	0	0	
SIR_IOPR1B	0	0	0	0	155	10	
SIR_IOPR_2	43	4	0	0	0	0	

Product Type	IOHHMOOR	MVIOEPFDNCDF	MVIOEPNCDF	MVIONCDF	RBSZOPOEPFDNCDF	RBSZOPOEPFDPLRMNCD	RBSZOPOEPNCDF
SIR_IOP_2_		30	30	3	30	15	29

Product Type	RNELPOTONCDF	RPEPOPFDPLRMSINNCD	RPEPOPFDSINNCDF	RPEPOPSINNCDF	RSSBCONCDF	RSSHAOFDNCDF	RSSHAOFDPLRMNCDF
SIR_IOP_2_	4	15	//	22	19	30	19

Product Type	RSSHAONCDF	RSWHOEPFDNCDF	RSWHOEPFDPL	RMNCDF RSWHOEPNCDF	SPHLPQWNCDF	-	-
SIR_IOP_2_	26	30	17	12	30		

Test Description Key:	est 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						
RNELPOTONCDF	RangeNELPOceanTideOceanNetCDF	The Non-equilibrium long period ocean loading tide height should be between -40mm and 40mm (or missing) for surface type = ocean						
RPEPOPFDLRMNCDF	RangePeakinessExcludingPolarOPFD2LRMNetCDF	The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees						
RPEPOPFDPLRMSAR NCDF	RangePeakinessExcludingPolarOPFD2PLRMSARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees						

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# 7.3 Missing QCC Reports

Number of products with missing QCC reports: