

## 1. Overview

Report Production:	15-Mar-2023
Processor Used:	CryoSat Ocean Processor
Data Used:	Intermediate Ocean Products (IOP) L1B, L2 & P2P Science Data

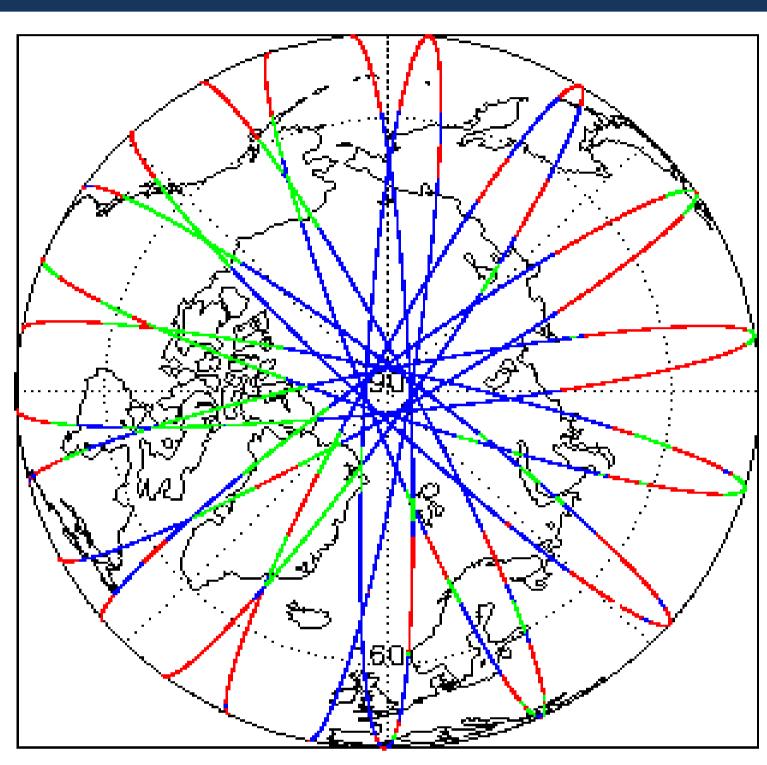
# We would love to hear from you! Please let us know your feedback about these daily quality reports: What do you like/ dislike? What quality information do you need? Send your feedback to

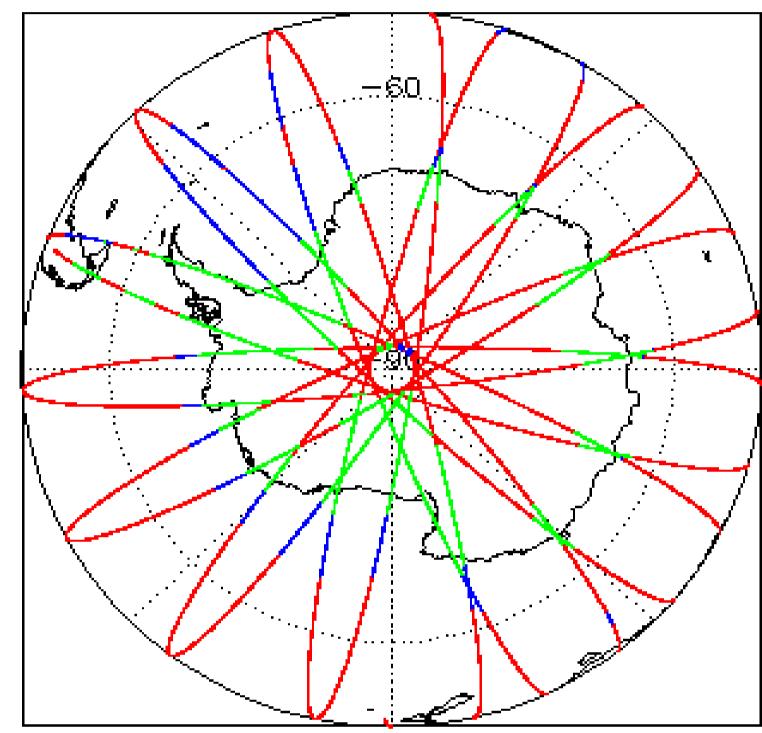
cs2\_qc\_team@telespazio.com

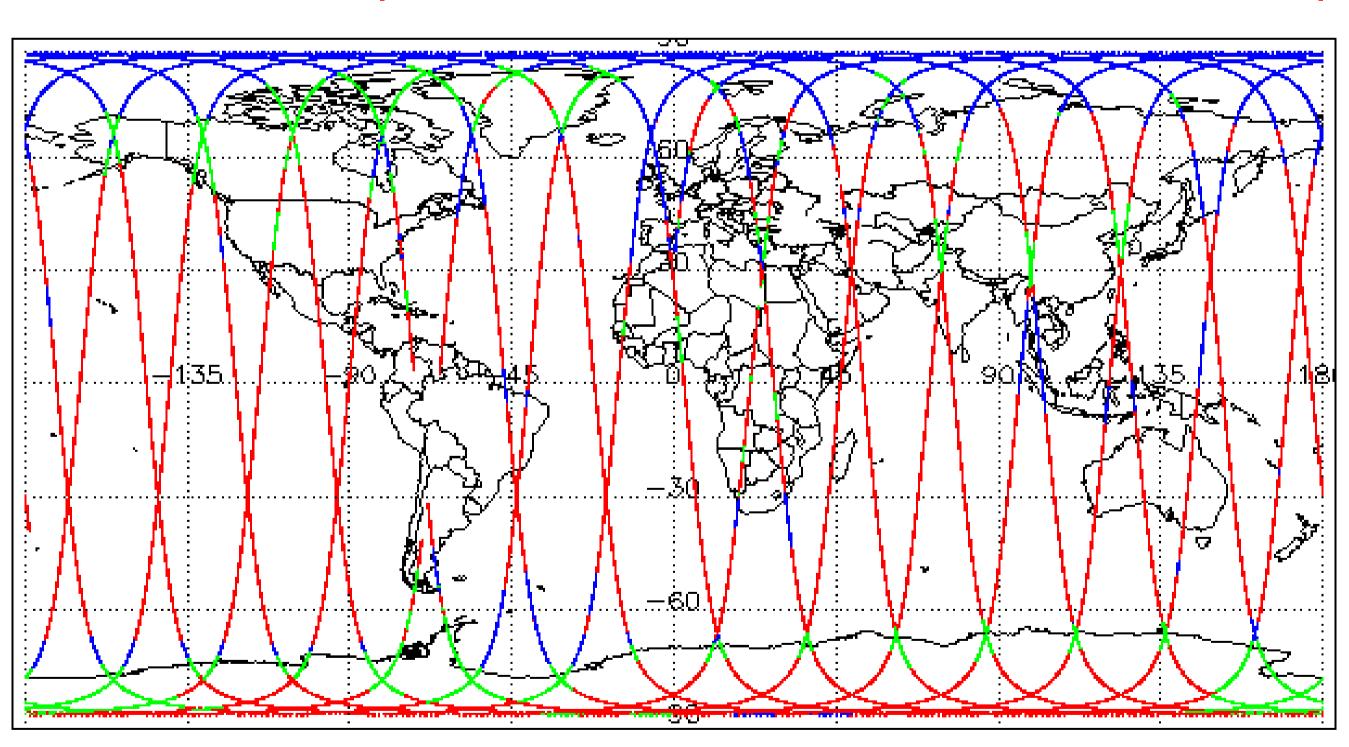
Check	L1 & L2	P2P
Server check: science-pds.cryosat.esa.int	Nominal	Nominal
Server check: calval-pds.cryosat.esa.int	Nominal	Nominal
Product Software Check	Nominal	Nominal
Product Format Check	Nominal	Nominal
Product Header Analysis	Nominal	Nominal
Auxiliary Data File Usage Check	Nominal	Nominal
Auxiliary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

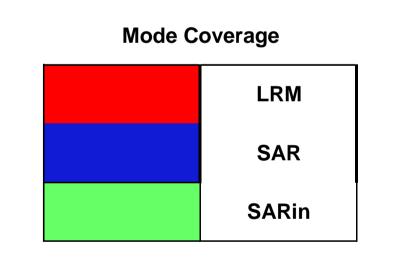
Mission / Instru	ment News
11-Mar-2023	None
12-Mar-2023	None
13-Mar-2023	Nothing planned

## 2. Global Coverage









## 3. Instrument Configuration

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

SIRAL instrument(s) in use: SIRAL - A

## 4. IOP Level 1B Data Quality Check

## 4.1 L1B Product Format Check

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

#### 4.2 L1B Product Header Analysis

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

Number of products with errors:

#### 4.3 L1B Auxilary Data File Usage Check

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

Number of products with errors:

#### 4.4 L1B Auxiliary Correction Error Check

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

0

0

Number of products with errors:

#### 4.5 L1B Measurement Confidence Data Check

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

> Attitude Correction Missing: This flag is currently set in error for IOPR products due to a configuration issue. The attitude correction is actually not missing. This will be resolved in the next SW update.

Number of products with errors: 0

#### 4.6 L1B Waveform Group Data Check

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

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

Number of products with errors: 16

Product	Test Failed	Description
CS_OFFL_SIR_IOPM1B_20230312T101344_20230312T101505_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPM1B_20230312T154415_20230312T155346_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230312T012549_20230312T013115_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230312T035542_20230312T035653_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230312T044904_20230312T045050_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230312T053503_20230312T053728_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230312T061748_20230312T061938_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230312T080614_20230312T080902_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230312T085708_20230312T090149_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230312T102753_20230312T102822_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230312T103832_20230312T104023_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230312T170141_20230312T170559_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20230312T221915_20230312T222118_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230312T101546_20230312T101634_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230312T102823_20230312T103609_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20230312T115851_20230312T120024_C001	Loss of Echo	The tracking echo is missing for one or more records

## 5. IOP Level 2 Data Quality Check

#### 5.1 L2 Product Format Check

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

Number of products with errors: 0

## 5.2 L2 Product Header Analysis

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

Number of products with errors:

## 5.3 L2 Auxiliary Data File Usage Check

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

Number of products with errors: 0

## 5.4 L2 Auxiliary Correction Error Check

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

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

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

Section   Description   Desc	Product	Test Failed	Description
Segretary   Segr	CS_OFFL_SIR_IOPN_2_20230312T012055_20230312T012343_C001	` ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	
COLORS BRIDGE SOMEON TOWNS OF THE PARTY OF T	CS_OFFL_SIR_IOPN_2_20230312T012549_20230312T013115_C001	` ' '	
SOUTH DRIVER CONTROL 202000 21102000 21102000 COST  BASE OFFILE SEL OFFILE 202000 21102000 2110200 COST  BASE OFFILE SEL OFFILE 202000 21102000 2110200 COST  BASE OFFILE SEL OFFILE 202000 21102000 2110200 COST  BASE OFFILE SEL OFFILE 202000 2110200 2110200 COST  BASE OFFILE SEL OFFILE 202000 21102000 2110200 COST  BASE OFFILE SEL OFFILE 202000 21102000 2110200 COST  BASE OFFILE SEL OFFILE 202000 2110200 2110200 COST  BASE OFFI SEL OFFILE 20200 2110	CS_OFFL_SIR_IOPN_2_20230312T021642_20230312T022108_C001	Mean Sea Surface (1)	There is an error with the MSS height (solution 1) for one or more records
	CS_OFFL_SIR_IOPN_2_20230312T030024_20230312T030259_C001	` /	
Description of the policy of t	CS_OFFL_SIR_IOPN_2_20230312T035542_20230312T035653_C001	` ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	
Description of the property of the second records of the second re	CS_OFFL_SIR_IOPN_2_20230312T043223_20230312T043405_C001	Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-	Total Geocentric Ocean Tide (solution 1: GOT and 2: FES) and the Non-
Troopsysty (1)  Co. OFFL S R JOHN 2 2020037703703 (2020) (100944, C010)  Men Dyranic Topopartie (1)  Men See Surface (1) Men Dyranic Topopartie (1)  M	CS_OFFL_SIR_IOPN_2_20230312T043740_20230312T044054_C001	Mean Dynamic Topography (1)	
Ment Dataset 1 (appropriy 1)  Co. CEFT_S.R., ORP. 2, 2020012TO 1742, 2020012TO 1829, 2020012TO 2829, 2020012TO	CS_OFFL_SIR_IOPN_2_20230312T053503_20230312T053728_C001	1	
Section 1.	CS_OFFL_SIR_IOPN_2_20230312T053735_20230312T053946_C001	Mean Dynamic Topography (1)	
Sec. OFFL_SRI_LOFFL_2_2223012**(95794_2223012**(9797_007)**  Verification Consent (100 (100))**  CS_OFFL_SRI_LOFFL_2_2223012**(1957944_2223012**(195794_223012**(195794_23012**(195794_23012**(195794_23012**(195794_230	CS_OFFL_SIR_IOPN_2_20230312T061748_20230312T061938_C001	Mean Dynamic Topography (1)	
Each PL SIR IDPN 2 20200127119872 2020012719410 C001  Toss Geocentro Cosen Tide (GOT)  Toss Geocent	CS_OFFL_SIR_IOPN_2_20230312T062756_20230312T063017_C001	Mean Dynamic Topography (1)	
Sci. OFFL_SR_IOPH_2_2033312T19532_2023312T196410_C001	CS_OFFL_SIR_IOPN_2_20230312T071501_20230312T071927_C001	Mean Dynamic Topography (1)	
Toography (i) Toography (ii) Toography (iii) Toography (iii) Toography (iii) Toography (iii) There is an error with the Mean Dynamic Topography height (soution 1) are for one or more records CS_OFFL_SIR_IOPH_2_202303127110512_202303127112643_C001  Mean Dynamic Topography (i) There is an error with the Mean Dynamic Topography height (soution 1) and the Mean Dynamic Topography height (soution 1) are for more records Toography (ii) There is an error with the Mean Dynamic Topography height (soution 1) and the Mean Dynamic Topography height (soution 1) are for more records  CS_OFFL_SIR_IOPH_2_202303127136447_202303127136456_C001  Mean Sas Sufface (1), Mean Dynamic Topography height (soution 1) and the Mean Dynamic Topography (i) To the is an error with the MSS height (soution 1) and the Mean Dynamic Topography (i)  CS_OFFL_SIR_IOPH_2_202303127136467_202303127136756_C001  Mean Sas Sufface (1), Mean Dynamic Topography height (soution 1) and the Mean Dynamic Topography (ii)  CS_OFFL_SIR_IOPH_2_20230312716628_202303127162606_C001  Mean Dynamic Topography (i) There is an error with the MSS height (soution 1) and the Mean Dynamic Topography height (soution 1)  Topography (ii) There is an error with the MSS height (soution 1) and the Mean Dynamic Topography height (soution 1)  Topography (iii) There is an error with the MSS height (soution 1) and the Mean Dynamic Topography height (soution 1)  Topography (iii) There is an error with the MSS height (soution 1) and the Mean Dynamic Topography height (soution 1)  Topography (iii) There is an error with the MSS height (soution 1) and the Mean Dynamic Topography height (soution 1)  Topography (iii) There is an error with the MSS height (soution 1)  Topography (iii) There is an	CS_OFFL_SIR_IOPN_2_20230312T085708_20230312T090149_C001	Total Geocentric Ocean Tide (GOT)	•
South Control of the Man Dynamic Topography (1)  So OFFL SIR JOPN 2 20230312T11947 20230312T119243 CO01  Mean Sea Surface (1), Mean Dynamic Topography (1)  So OFFL SIR JOPN 2 20230312T12918 20230312T12944 CO01  Mean Dynamic Topography (1)  So OFFL SIR JOPN 2 20230312T12978 20230312T13044 CO01  Mean Dynamic Topography (1)  So OFFL SIR JOPN 2 20230312T13044 20230312T13044 CO01  Mean Dynamic Topography (1)  So OFFL SIR JOPN 2 20230312T13044 20230312T13044 CO01  Mean Dynamic Topography (1)  Mean Dynamic Topography (1)  Mean Dynamic Topography (1)  There is an error with the MSS height (soution 1) and the Mean Dynamic Topography height (soution 1)  So OFFL SIR JOPN 2 20230312T130447 20230312T14979 CO01  So OFFL SIR JOPN 2 20230312T15292 20230312T152714 CO01  Mean Sea Surface (1), Mean Dynamic Topography height (soution 1)  There is an error with the MSS height (soution 1) and the Mean Dynamic Topography height (soution 1)  There is an error with the MSS height (soution 1) and the Mean Dynamic Topography height (soution 1)  There is an error with the MSS height (soution 1) and the Mean Dynamic Topography height (soution 1)  There is an error with the MSS height (soution 1) and the Mean Dynamic Topography height (soution 1)  There is an error with the MSS height (soution 1) and the Mean Dynamic Topography height (soution 1)  There is an error with the MSS height (soution 1) and the Mean Dynamic Topography height (soution 1)  There is an error with the Mss height (soution 1)  There is an error with the Mean Dynamic Topography height (soution 1)  There is an error with the Mean Dynamic Topography height (soution 1)  There is an error with the Mean Dynamic Topography height (soution 1)  There is an error with the Mean Dynamic Topography height (soution 1)  There is an error with the Mean Dynamic Topography height (soution 1)  There is an error with the Mean Dynamic Topography height (soution 1)  There is an error with the Mean Dynamic Topography height (soution 1)  There is an error with the Mean Dynamic Topography heigh	CS_OFFL_SIR_IOPN_2_20230312T093723_20230312T094100_C001	` '	
Topography (f)  CS_OFFL_SIR_JOPN_2_20230312T120182_0230312T120482_C001  Mean Dynamic Topography (f)  Mean Dynamic Topography (f)  There is an error with the Mean Dynamic Topography height (solution 1) of the Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (f)  CS_OFFL_SIR_JOPN_2_20230312T130467_20230312T130531 C001  Mean Sau Surface (f), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (f)  CS_OFFL_SIR_JOPN_2_20230312T16443_20230312T162714_C001  Mean Sau Surface (f), Mean Dynamic Topography height (solution 1) and the Mean Dynami	CS_OFFL_SIR_IOPN_2_20230312T103832_20230312T104023_C001	Mean Dynamic Topography (1)	
CS_OFFL_SIR_IOPN_2_20230312T120735_20230312T120942_C001  Nean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  CS_OFFL_SIR_IOPN_2_20230312T130424_20230312T130531_C001  Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  CS_OFFL_SIR_IOPN_2_20230312T130424_20230312T1304531_C001  Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  CS_OFFL_SIR_IOPN_2_20230312T162423_20230312T162405_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (1)  CS_OFFL_SIR_IOPN_2_20230312T163243_20230312T162605_C001  Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the Msen Dynamic Topography height (solution 1)  Topography (1)  There is an error with the Msen Dynamic Topography height (solution 1)  Topography (1)  There is an error with the Msen Dynamic Topography height (solution 1)  Topography (1)  There is an error with the Msen Dynamic Topography height (solution 1)  Topography (1)  There is an error with the Msen Dynamic Topography height (solution 1)  Topography (1)  There is an error with the Msen Dynamic Topography height (solution 1)  Toron or more eccods  There is an error with the Msen Dynamic Topography height (solution 1)  Toron or more eccods  There is an error with the Msen Dynamic Topography height (solution 1)  There is an error with the Msen Dynamic Topograph	CS_OFFL_SIR_IOPN_2_20230312T111647_20230312T112005_C001		
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CS_OFFL_SIR_IOPN_2_20230312T13644_20230312T13695_001  Mean Sea Surface (1), Mean Dynamic Topography (a)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (a)  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (b)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (b)  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (b)  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (b)  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (b)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (b)  There is an error with the Mean Dynamic Topography (b)  There is an error with the Mean Dynamic Topography (e)  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (b)  There is an error with the Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (b)  There is an error with the Mean Dynamic Topography height (solution 1) are one error error errords  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography height (solution 1) are one error error errords  There is an error with the Mean Dynamic Topography height (solution 1) are one error error errords  There is an error with the Mean Dynamic Topography height (solution 1) are one error errords  CS_OFFL_SIR_IOPN_2_20230312T184034_20230312T184138_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography height (solution 1)  CS_OFFL_SIR_IOPR_2_20230312T002941_20230312T003637_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography height (solution	CS_OFFL_SIR_IOPN_2_20230312T120735_20230312T120842_C001		
Topography (1)  Topography (2)  Topography (3)  Topography (4)  Topography (4)  Topography (5)  Topography (6)  Topography (7)  Topography (8)  Topography (8)  Topography (8)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (sol	CS_OFFL_SIR_IOPN_2_20230312T130424_20230312T130531_C001	Mean Dynamic Topography (1)	
Topography (1) Topography height (solution 1)  CS_OFFL_SIR_IOPN_2_20230312T161958_20230312T162605_C001  Mean Seas Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1)  There is an error with the MSS height (solution 1)  There is an error with the MSS height (solution 1)  There is an error with the MSS height (solution 1)  There is an error with the MSS height (solution 1)  There is an error with the MSS height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography hei	CS_OFFL_SIR_IOPN_2_20230312T134647_20230312T134759_C001		
Topography height (solution 1)  CS_OFFL_SIR_IOPN_2_20230312T175034_20230312T180243_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  CS_OFFL_SIR_IOPN_2_20230312T225619_20230312T003637_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography height (solution 1)  CS_OFFL_SIR_IOPR_2_20230312T003637_20230312T004056_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography height (solution 1)  CS_OFFL_SIR_IOPR_2_20230312T004106_20230312T005120_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography hei	CS_OFFL_SIR_IOPN_2_20230312T152423_20230312T152714_C001		
CS_OFFL_SIR_IOPN_2_20230312T175932_20230312T180243_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  CS_OFFL_SIR_IOPN_2_20230312T184034_20230312T184438_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_20230312T244932_20230312T225057_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_20230312T224932_20230312T225057_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography height (solution 1)  CS_OFFL_SIR_IOPR_2_20230312T02941_20230312T03637_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution	CS_OFFL_SIR_IOPN_2_20230312T161958_20230312T162605_C001		, , , , , , , , , , , , , , , , , , , ,
CS_OFFL_SIR_IOPN_2_20230312T184034_20230312T184422_C001 Mean Dynamic Topography (1)  CS_OFFL_SIR_IOPN_2_20230312T194021_20230312T194138_C001 Mean Dynamic Topography (1)  CS_OFFL_SIR_IOPN_2_20230312T224932_20230312T225057_C001 Mean Dynamic Topography (1)  CS_OFFL_SIR_IOPN_2_20230312T224932_20230312T225057_C001 Mean Dynamic Topography (1)  CS_OFFL_SIR_IOPN_2_20230312T225619_20230312T225926_C001 Mean Sea Surface (1), Mean Dynamic Topography (1)  CS_OFFL_SIR_IOPR_2_20230312T02941_20230312T03637_C001 Mean Sea Surface (1), Mean Dynamic Topography (1)  CS_OFFL_SIR_IOPR_2_20230312T003637_20230312T004056_C001 Mean Dynamic Topography (1)  CS_OFFL_SIR_IOPR_2_20230312T003637_20230312T004056_C001 Mean Dynamic Topography (1)  CS_OFFL_SIR_IOPR_2_20230312T004106_20230312T005120_C001 Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topog	CS_OFFL_SIR_IOPN_2_20230312T175034_20230312T175306_C001	Mean Dynamic Topography (1)	
CS_OFFL_SIR_IOPN_2_20230312T194021_20230312T194138_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (1)  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)	CS_OFFL_SIR_IOPN_2_20230312T175932_20230312T180243_C001	Mean Dynamic Topography (1)	
CS_OFFL_SIR_IOPN_2_20230312T194021_20230312T194038_C001  Mean Dynamic Topography (1)  There is an error with the Mass Dynamic Topography height (solution 1) and the Mean Dynamic Topography (1)  CS_OFFL_SIR_IOPN_2_20230312T225619_20230312T225926_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography height (solution 1)  CS_OFFL_SIR_IOPR_2_20230312T002941_20230312T003637_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography height (solution 1)  CS_OFFL_SIR_IOPR_2_20230312T003637_20230312T004056_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography height (solution 1)  CS_OFFL_SIR_IOPR_2_20230312T004106_20230312T004056_C001  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  CS_OFFL_SIR_IOPR_2_20230312T004116_20230312T0041531_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)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)	CS_OFFL_SIR_IOPN_2_20230312T184034_20230312T184422_C001	Mean Dynamic Topography (1)	
CS_OFFL_SIR_IOPN_2_20230312T225619_20230312T225926_C001  Mean Sea Surface (1), Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (solution 1)  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)	CS_OFFL_SIR_IOPN_2_20230312T194021_20230312T194138_C001	Mean Dynamic Topography (1)	
Topography (1)  Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1)  There is an error with the MSS height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)	CS_OFFL_SIR_IOPN_2_20230312T224932_20230312T225057_C001	Mean Dynamic Topography (1)	
Topography (1)  CS_OFFL_SIR_IOPR_2_20230312T003637_20230312T004056_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1)  CS_OFFL_SIR_IOPR_2_20230312T004106_20230312T004056_C001  Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)	CS_OFFL_SIR_IOPN_2_20230312T225619_20230312T225926_C001	, , ,	
Topography (1)  CS_OFFL_SIR_IOPR_2_20230312T003637_20230312T004056_C001  Topography (1)  Mean Dynamic Topography (1)  There is an error with the Mean Dynamic Topography height (solution 1) for one or more records  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)  CS_OFFL_SIR_IOPR_2_20230312T021112_20230312T021531_C001  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1)  Mean Sea Surface (1), Mean Dynamic Topography height (solution 1)  There is an error with the MSS height (solution 1)  There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)	CS_OFFL_SIR_IOPR_2_20230312T002941_20230312T003637_C001		, , , , , , , , , , , , , , , , , , , ,
CS_OFFL_SIR_IOPR_2_20230312T004106_20230312T005120_C001  Mean Dynamic Topography (1)  for one or more records  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_20230312T021531_20230312T021642_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_20230312T003637_20230312T004056_C001	, ,	
CS_OFFL_SIR_IOPR_2_20230312T021512_20230312T021531_C001  Topography (1)  Topography height (solution 1)  Mean Sea Surface (1), Mean Dynamic  There is an error with the MSS height (solution 1) and the Mean Dynamic	CS_OFFL_SIR_IOPR_2_20230312T004106_20230312T005120_C001	Mean Dynamic Topography (1)	
US OFFI SIR JOPR / 202303121021531 202303121021642 C001	CS_OFFL_SIR_IOPR_2_20230312T021112_20230312T021531_C001	` '	
	CS_OFFL_SIR_IOPR_2_20230312T021531_20230312T021642_C001	` ' '	

CS_OFFL_SIR_IOPR_2_20230312T034908_20230312T035239_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_20230312T035239_20230312T035542_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_20230312T040023_20230312T040427_C001	Total Geocentric Ocean Tide (GOT)	There is an error with the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records
CS_OFFL_SIR_IOPR_2_20230312T050735_20230312T051442_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_20230312T052845_20230312T053503_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_20230312T071029_20230312T071500_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_20230312T084703_20230312T085707_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_20230312T102823_20230312T103609_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_20230312T120843_20230312T121608_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_20230312T134800_20230312T135512_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_20230312T152715_20230312T153426_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_20230312T170559_20230312T171156_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_20230312T171158_20230312T171255_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_20230312T184422_20230312T185319_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_20230312T202116_20230312T202856_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_20230312T220050_20230312T220710_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_20230312T220710_20230312T221006_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_20230312T233902_20230312T234610_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_20230312T234610_20230312T234747_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)

## **5.5 L2 Measurement Confidence Data Check**

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

## 5.6 L2 Measurement Quality Flag Check

#### L2 Quality Flags (20 Hz)

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

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

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

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Product	Test Failed	Description
CS_OFFL_SIR_IOPM_2_20230311T235203_20230312T002648_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_20230312T004056_20230312T004106_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_20230312T005637_20230312T011413_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_20230312T011710_20230312T011846_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_20230312T013245_20230312T020210_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_20230312T022151_20230312T024001_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_20230312T024225_20230312T025441_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_20230312T030300_20230312T030458_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_20230312T030616_20230312T031001_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_20230312T031142_20230312T032721_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_20230312T032923_20230312T033845_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_20230312T035654_20230312T035815_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_20230312T040633_20230312T041805_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_20230312T043406_20230312T043528_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_20230312T043642_20230312T043739_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_20230312T044113_20230312T044903_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_20230312T045053_20230312T050626_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_20230312T054425_20230312T061712_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_20230312T062207_20230312T062756_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_20230312T063022_20230312T065607_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_20230312T072130_20230312T072447_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_20230312T072726_20230312T072958_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_20230312T073001_20230312T075615_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_20230312T080149_20230312T080613_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_20230312T080903_20230312T083705_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_20230312T083827_20230312T083903_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_20230312T084652_20230312T084703_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_20230312T090149_20230312T093520_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_20230312T094101_20230312T094638_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_20230312T094759_20230312T095422_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_20230312T102536_20230312T102704_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_20230312T104023_20230312T111444_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_20230312T112005_20230312T112517_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_20230312T112702_20230312T114703_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_20230312T121849_20230312T124118_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_20230312T124133_20230312T125229_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_20230312T130012_20230312T130423_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_20230312T130626_20230312T133512_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_20230312T133529_20230312T134243_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_20230312T134444_20230312T134647_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_20230312T135636_20230312T135654_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_20230312T140143_20230312T140942_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_20230312T141557_20230312T142714_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_20230312T142810_20230312T143207_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_20230312T143346_20230312T143905_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_20230312T145010_20230312T150230_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_20230312T150456_20230312T151658_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_20230312T151928_20230312T152059_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_20230312T154415_20230312T155346_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230312T155622_20230312T161124_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_20230312T161312_20230312T161817_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_20230312T161842_20230312T161957_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_20230312T162606_20230312T162637_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230312T162649_20230312T162756_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_20230312T164411_20230312T164508_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_20230312T164613_20230312T164834_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_20230312T164957_20230312T165222_C001	•	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230312T165404_20230312T165709_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_20230312T173327_20230312T175029_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230312T175307_20230312T175735_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_20230312T175741_20230312T175750_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_20230312T180326_20230312T182737_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_20230312T190352_20230312T193010_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_20230312T193130_20230312T193650_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_20230312T194239_20230312T201056_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230312T201222_20230312T201532_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_20230312T203912_20230312T210946_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_IOPM_2_20230312T211116_20230312T211928_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_20230312T212202_20230312T215706_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_20230312T221006_20230312T221202_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_20230312T221428_20230312T221820_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_20230312T224058_20230312T224913_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_20230312T225057_20230312T225618_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_20230312T230132_20230312T232429_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_20230312T232714_20230312T233628_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_20230312T234846_20230312T235244_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_20230312T043223_20230312T043405_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_20230312T043528_20230312T043642_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_20230312T075723_20230312T075902_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_20230312T094639_20230312T094753_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_20230312T101634_20230312T101739_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_20230312T190009_20230312T190352_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_20230312T193650_20230312T193656_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_20230312T201532_20230312T202115_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_20230312T223831_20230312T223834_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_20230312T120500_20230312T120734_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_20230312T121614_20230312T121849_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_20230312T150243_20230312T150456_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_20230312T220710_20230312T221006_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

## 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_20230312T005546_20230312T005637_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_20230312T012055_20230312T012343_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_20230312T012549_20230312T013115_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_20230312T021019_20230312T021112_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_20230312T021642_20230312T022108_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_20230312T031001_20230312T031142_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_20230312T033846_20230312T034152_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_20230312T043223_20230312T043405_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records

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CS_OFFL_SIR_IOPN_2_20230312T043740_20230312T044054_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_20230312T044904_20230312T045050_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_20230312T051544_20230312T051927_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_20230312T053503_20230312T053728_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_20230312T053735_20230312T053946_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_20230312T054019_20230312T054046_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_20230312T062151_20230312T062207_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_20230312T062756_20230312T063017_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_20230312T065607_20230312T065945_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_20230312T070608_20230312T070618_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_20230312T070956_20230312T071028_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_20230312T071501_20230312T071927_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_20230312T072008_20230312T072130_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_20230312T080614_20230312T080902_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_20230312T085708_20230312T090149_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_20230312T100338_20230312T100527_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_20230312T101634_20230312T101739_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_20230312T103610_20230312T103744_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_20230312T114704_20230312T115016_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_20230312T120735_20230312T120842_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_20230312T134647_20230312T134759_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_20230312T154027_20230312T154415_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_20230312T161958_20230312T162605_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_20230312T165709_20230312T165831_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_20230312T170141_20230312T170559_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_20230312T172258_20230312T172537_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_20230312T185415_20230312T185545_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_20230312T190009_20230312T190352_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_20230312T201532_20230312T202115_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_20230312T203022_20230312T203107_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_20230312T210953_20230312T211116_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_20230312T215706_20230312T215839_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_20230312T221915_20230312T222118_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_20230312T222956_20230312T223013_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_20230312T225619_20230312T225926_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_20230312T002649_20230312T002742_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_20230312T002941_20230312T003637_C001	LAITIMATAL RANGA ANG BACKECATTAL LILIALITY	The Ocean Altimeter Range, SSHA, SWH 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_20230312T020210_20230312T020653_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_20230312T021112_20230312T021531_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_20230312T024002_20230312T024045_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_20230312T024047_20230312T024058_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_20230312T025441_20230312T030024_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_20230312T034908_20230312T035239_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_20230312T040023_20230312T040427_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_20230312T050735_20230312T051442_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_20230312T052845_20230312T053503_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_20230312T054047_20230312T054301_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_20230312T070602_20230312T070607_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_20230312T071029_20230312T071500_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_20230312T084703_20230312T085707_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_20230312T102823_20230312T103609_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_20230312T120500_20230312T120734_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_20230312T120843_20230312T121608_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_20230312T121614_20230312T121849_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_20230312T134243_20230312T134307_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_20230312T134800_20230312T135512_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_20230312T135758_20230312T140142_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_20230312T143906_20230312T143911_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_20230312T152059_20230312T152422_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_20230312T152715_20230312T153426_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_20230312T162822_20230312T163107_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_20230312T165223_20230312T165226_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_20230312T165832_20230312T170048_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_20230312T170559_20230312T171156_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_20230312T172737_20230312T173118_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_20230312T173122_20230312T173327_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_20230312T184422_20230312T185319_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_20230312T202116_20230312T202856_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_20230312T202910_20230312T203021_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_20230312T215840_20230312T215914_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_20230312T220050_20230312T220710_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_20230312T224913_20230312T224932_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_20230312T233842_20230312T233853_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_20230312T234610_20230312T234747_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_20230312T235248_20230312T235608_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.

#### 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: 52

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

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

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

Number of products with errors: 150

## 6. OP 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: 0

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

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

Number of products with errors: 0

#### 6.3 P2P Auxiliary Data File Usage Check

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

Number of products with errors: 0

#### **6.4 P2P Auxiliary Correction Error Check**

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

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

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

Product	Test Failed	Description
CS_OFFL_SIR_IOP_220230311T234553_20230312T003529_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_220230312T003529_20230312T012507_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_220230312T012507_20230312T021444_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_220230312T021444_20230312T030422_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_220230312T030422_20230312T035358_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_220230312T035358_20230312T044336_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1), and tidal corrections for one or more records
CS_OFFL_SIR_IOP_220230312T044336_20230312T053313_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_220230312T053313_20230312T062251_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_220230312T062251_20230312T071228_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_220230312T071228_20230312T080206_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_220230312T080206_20230312T085143_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_220230312T085143_20230312T094121_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_220230312T094121_20230312T103057_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_220230312T103057_20230312T112036_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_220230312T112036_20230312T121012_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_220230312T121012_20230312T125950_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_220230312T125950_20230312T134927_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_220230312T134927_20230312T143905_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_220230312T143905_20230312T152841_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_220230312T152841_20230312T161819_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_220230312T161819_20230312T170756_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_220230312T170756_20230312T175734_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_220230312T175734_20230312T184711_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_220230312T184711_20230312T193649_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_220230312T193649_20230312T202626_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_220230312T202626_20230312T211604_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_220230312T211604_20230312T220540_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_220230312T220540_20230312T225519_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_220230312T225519_20230312T234455_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_220230312T234455_20230313T003433_C002	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)

#### 6.5 P2P Measurement Confidence Data Check

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

Number of products with errors:

# 6.6 P2P Measurement Quality Flag Check

## P2P Quality Flags (20 Hz)

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

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

Number of products with errors: 30

## P2P Quality Flags (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: 29

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

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

Number of products with errors: 30

## 6.8 P2P Ocean Retracking Quality Check

## P2P Retracking Flags (20 Hz)

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

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

Number of products with errors: 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.

## 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	178	178	3	175	0
SIR_IOPR1B	133	104	3	101	0
SIR_IOPN1B	104	133	0	133	0
SIR_IOPM_2	178	178	126	52	0
SIR_IOPR_2	133	104	41	63	0
SIR_IOPN_2	104	133	48	84	1
SIR_IOP_P2P	29	29	0	28	1

## 7.1 QCC Errors

#### **Number of QCC reports with errors:**

10

Total	numbar	of o	0011KK01	2222	aaah	OFFOF
ı otai	number	OI O	ccurre	nces of	eacn	error

<b>Product Type</b>	RLOBOPNCDF	RL	RL	RLOBOPNCDF	RL	RL	-	-	-	-	-
SIR_IOPR_2	1	1	1	1	1	1					
<b>Product Type</b>	RLOBOPNCDF	RL	RLOBOPNCDF	RL	-	-	-	-	-	-	-
SIR_IOP_2_	1	1	1	1							

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

## 7.2 QCC Warnings

#### Number of QCC reports with warnings

2101

Total number	of occurrences	of each warning	
rotai number	or occurrences	oi each warning	

	rotal name of or occan on occan name								
Product Type	BCSHNCDF	IOHHMOOR	MVIOEPFDNCDF	MVIOEPNCDF	MVIONCDF	RBSZOPOEPFDNCDF	RBSZOPOEPFDPLRMNCD		
SIR_IOPM1B	175	0	0	0	0	0	0		
SIR_IOPM_2	0	0	34	36	0	39	0		
SIR_IOPN1B	99	0	0	0	0	0	0		
SIR_IOPN_2	0	0	14	34	2	30	31		
SIR_IOPR1B	128	0	0	0	0	0	0		
SIR IOPR 2	0	1	22	35	1	30	21		

Product Type	RBSZOPOEPNCDF	RNELPOTONCDF	RPEPOPFDLRMNCDF	RPEPOPFDPLRMSARNCI	RPEPOPFDPLRMSINNCD	RPEPOPFDSARNCDF	RPEPOPFDSINNCDF
SIR_IOPM1B	0	0	0	0	0	0	0
SIR_IOPM_2	32	0	30	0	0	0	0
SIR_IOPN1B	0	0	0	0	0	0	0
SIR_IOPN_2	22	1	0	0	17	0	36
SIR_IOPR1B	0	0	0	0	0	0	0
SIR_IOPR_2	8	0	0	35	0	44	0

Product Type	RPEPOPLRMNCDF	RPEPOPSARNCDF	RPEPOPSINNCDF	RSSBCONCDF	RSSHAOFDNCDF	RSSHAOFDPLRMNCDF	RSSHAONCDF
SIR_IOPM1B	0	0	0	0	0	0	0
SIR_IOPM_2	21	0	0	3	25	0	4
SIR_IOPN1B	0	0	0	0	0	0	0
SIR_IOPN_2	0	0	25	17	47	50	26
SIR_IOPR1B	0	0	0	0	0	0	0
SIR_IOPR_2	0	33	0	3	70	35	13

Product Type	RSWHOEPFDNCDF	RSWHOEPFDPLRMNCDF	RSWHOEPNCDF	SPHRTASCNSNCDF	SOOHHIFHD	SCSTODHRNCDF	SCSTODNCDF
SIR_IOPM1B	0	0	0	1	0	0	0
SIR_IOPM_2	31	0	2	1	0	0	0
SIR_IOPN1B	0	0	0	0	0	52	2
SIR_IOPN_2	33	28	14	0	0	0	0
SIR_IOPR1B	0	0	0	0	0	133	12
SIR_IOPR_2	28	41	1	0	2	0	0

Product Type	IOHHMOOR	MVIOEPFDNCDF	MVIOEPNCDF	MVIONCDF	RBSZOPOEPFDNCDF	RBSZOPOEPFDPLRMNCD	RBSZOPOEPNCDF
1.000001.760							
SIR IOP 2	14	29	29	2	29	19	28

SIR IOP 2 1 17 29 19 19 29 18	Prod	luct Type	RNELPOTONCDF	RPEPOPFDPLRMSINNCDI	RPEPOPFDSINNCDF	RPEPOPSINNCDF	RSSBCONCDF	RSSHAOFDNCDF	RSSHAOFDPLRMNCDF
	SIR	_IOP_2_	1	17	29	19	16	29	18

_								
	Product Type	RSSHAONCDF	RSWHOEPFDNCDF	RSWHOEPFDPLRMNCDF	RSWHOEPNCDF	SPHLPQWNCDF	-	-
	SIR_IOP_2_	22	29	19		29		

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					
IOHHMOOR	IndexOf1Hzin20HzMappingOutOfRange	The mapping of 20 Hz to 1 Hz measurements should be in the range 0 to (number of 1 Hz samples - 1)					
MVIOEPFDNCDF	MissingValueIntOceanExcludingPolarFD2NetCDF	The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees					
MVIOEPNCDF	MissingValueIntOceanExcludingPolarNetCDF	The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees					
MVIONCDF	MissingValueIntOceanNetCDF	The value should not be a 'missing value' for surface type 0 only					
RBSZOPOEPFDNCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2NetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees					
RBSZOPOEPFDPLRM 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
RPEPOPFDPLRMSINN CDF	RangePeakinessExcludingPolarOPFD2PLRMSINNetCDF	The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEPOPFDSARNCDF	RangePeakinessExcludingPolarOPFD2SARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEPOPFDSINNCDF	RangePeakinessExcludingPolarOPFD2SINNetCDF	The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEPOPLRMNCDF	RangePeakinessExcludingPolarOPLRMNetCDF	The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEPOPSARNCDF	RangePeakinessExcludingPolarOPSARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEPOPSINNCDF	RangePeakinessExcludingPolarOPSINNetCDF	The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RSSBCONCDF	RangeSeaStateBiasCorrectionOceanNetCDF	The sea state bias correction should be between -500mm and 0mm (or missing) for surface type = ocean
RSSHAOFDNCDF	RangeSeaSurfaceHeightAnomalyOceanFD3NetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean
RSSHAOFDPLRMNCD F	RangeSeaSurfaceHeightAnomalyOceanFD3PLRMNetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean
RSSHAONCDF	RangeSeaSurfaceHeightAnomalyOceanNetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean
RSWHOEPFDNCDF	RangeSignificantWaveHeightOceanExcludingPolarFD2NetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RSWHOEPFDPLRMNC DF	RangeSignificantWaveHeightOceanExcludingPolarFD2PLRMNetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RSWHOEPNCDF	RangeSignificantWaveHeightOceanExcludingPolarNetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
SPHRTASCNSNCDF	SPH_Rel_Time_ASC_Node_Start_v2_NetCDF	Rel_Time_ASC_Node_Start mismatch (DBL ASC, rounded up to 0.1)
SOOHHIFHD	SameOrOneHigher1HzIndexFor20HzData	The 1 Hz index of a 20 Hz sample should be the same or 1 higher than its previous sample
SCSTODHRNCDF	SequenceCounterStepTODHRNetCDF	The sequence counter should be modulo 4 higher with regard to the previous sequence counter
SCSTODNCDF	SequenceCounterStepTODNetCDF	The sequence counter should be one higher (modulo 16384) with regard to the previous sequence counter

## 7.3 Missing QCC Reports

Number of products with missing QCC reports:

L1B and L2 Product name

P2P Product name

CS\_OFFL\_SIR\_IOP\_2\_\_20230312T234455\_20230313T003433\_C002