

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

<u>03/12/2020</u>

Report Production:	04-Dec-2020	Check	L1 & L2
Report Production.	04-Dec-2020	Server check: science-pds.cryosat.esa.int	Nominal
Processor Used:	One Oat Oas a Draw and	Server check: calval-pds.cryosat.esa.int	Nominal
Processor Useu.	CryoSat Ocean Processor	Product Software Check	Nominal
Data Used:	Near Real Time Ocean Products (NOP) L1B & L2 Science Data	Product Format Check	Nominal
Data Used:		Product Header Analysis	Nominal
		Auxiliary Data File Usage Check	Nominal
		Auxiliary Correction Error Check	See Section 5.4
		Measurement Confidence Data Check	See Section 4.5, 4.6 and 5.5
		Measurement Quality Flag Check	See Section 5.6
		Ocean Retracking Quality Check	See Section 5.7
		QCC Error/ Warning Check	See Section 7.1 and 7.2

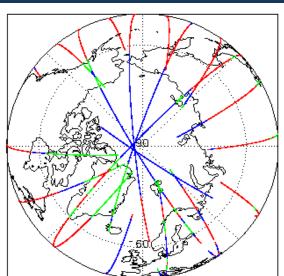
1. Overview

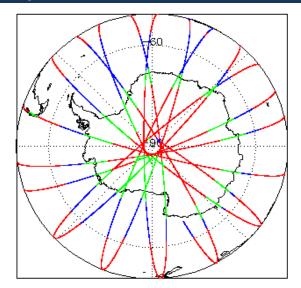
# Mission / Instrument News 02-Dec-2020 None

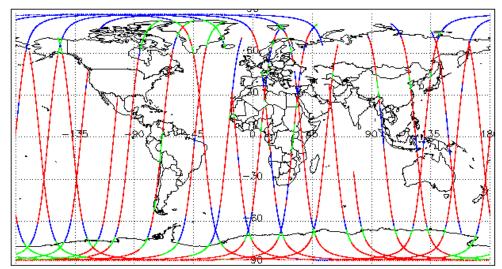
03-Dec-2020 Due to a Collision Avoidance Manoeuvre, SIRAL will be unavailable from the 03/12/2020 at 08:48:39 until 13:03:20

04-Dec-2020 Nothing planned

2. Global Coverage









# 3. Instrument Configuration

The SIRAL instrument configuration for the day of acquisition is provided below.			
SIRAL instrument(s) in use: SIRAL - A			
Star Tracker(s) in use: Star Tracker 1			

4. NOP Level 1B Data Quality Check

#### 4.1 L1B Product Format Check

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

4.2 L1B Product Header Analysis		
For all products, a series of pre-defined checks are performed on the MPH and	d SPH in order to identify any inconsi	istencies and/or errors raised by the ground-segment processing chain.
L1B Processing Quality HR: The I1b_proc_flag_hr flag is currently set all L1E DSARIn chains. A modification is required in the next release.	3 IOPR and IOPN products because	the I1b_processing_quality_hr field is not correctly configured in the OSAR and
Number of products with errors: 0		
4.3 L1B Auxilary Data File Usage Check		
Each product is checked for missing Data Set Descriptors with respect to a pre	e-determined baseline and also to ch	eck the validity of Auxiliary Data Files is correct.
Dynamic Atmospheric Correction: The DAC is missing in all products becau	se the auxiliary files required are not	t available in time for processing. This known and expected behaviour.
Number of products with errors: 0		
4.4 L1B Auxiliary Correction Error Check		
CryoSat L1B data includes a correction error flag for each measurement record	d. The bit value of this flag indicates	any problems when set.
Number of products with errors: 0		
4.5 L1B Measurement Confidence Data Check		
Attitude Correction Missing: This flag is currently set in error for NOPR pro	oducts due to a configuration issue. 1	This is being investigated and will be updated in the next SW update.
Attitude Correction Missing: This flag is currently set in error for NOPR pro	oducts due to a configuration issue. I	This is being investigated and will be updated in the next SW update.
lumber of products with errors: 1		
Product	Test Failed	Description
	Power scaling error	
4.6 L1B Waveform Group Data Check CryoSat L1B data includes a waveform data flag for each measurement record	I. The bit value of this flag indicates a	There is an error in the scaling of the L1B waveform for one or more records
4.6 L1B Waveform Group Data Check CryoSat L1B data includes a waveform data flag for each measurement record	I. The bit value of this flag indicates a	There is an error in the scaling of the L1B waveform for one or more records
4.6 L1B Waveform Group Data Check CryoSat L1B data includes a waveform data flag for each measurement record Loss of Echo Flag: This flag is currently set for products over land, but this	I. The bit value of this flag indicates a	There is an error in the scaling of the L1B waveform for one or more records
<b>1.6 L1B Waveform Group Data Check</b> CryoSat L1B data includes a waveform data flag for each measurement record <b>Closs of Echo Flag:</b> This flag is currently set for products over land, but this         lumber of products with errors:       17	I. The bit value of this flag indicates a	There is an error in the scaling of the L1B waveform for one or more records
4.6 L1B Waveform Group Data Check         CryoSat L1B data includes a waveform data flag for each measurement record         • Loss of Echo Flag: This flag is currently set for products over land, but this         • umber of products with errors:       17         Product	I. The bit value of this flag indicates a is to be expected.	There is an error in the scaling of the L1B waveform for one or more records
4.6 L1B Waveform Group Data Check         CryoSat L1B data includes a waveform data flag for each measurement record         Loss of Echo Flag: This flag is currently set for products over land, but this         Number of products with errors:       17         Product         CS_OFFL_SIR_NOPM1B_20201203T190658_20201203T190909_C001	I. The bit value of this flag indicates a is to be expected.	There is an error in the scaling of the L1B waveform for one or more records any problems when set.  Description
4.6 L1B Waveform Group Data Check         CryoSat L1B data includes a waveform data flag for each measurement record         > Loss of Echo Flag: This flag is currently set for products over land, but this         Number of products with errors:       17         Product	I. The bit value of this flag indicates a is to be expected. Test Failed Loss of Echo	There is an error in the scaling of the L1B waveform for one or more records         any problems when set.         Description         The tracking echo is missing for one or more records
4.6 L1B Waveform Group Data Check         CryoSat L1B data includes a waveform data flag for each measurement record         Closs of Echo Flag: This flag is currently set for products over land, but this         Number of products with errors:       17         Product         CS_OFFL_SIR_NOPM1B_20201203T190658_20201203T190909_C001         CS_OFFL_SIR_NOPM1B_20201203T204819_20201203T205741_C001         CS_OFFL_SIR_NOPM1B_20201203T214251_20201203T215027_C001	I. The bit value of this flag indicates a is to be expected.           Test Failed           Loss of Echo           Loss of Echo	There is an error in the scaling of the L1B waveform for one or more records         any problems when set.         Description         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records
4.6 L1B Waveform Group Data Check         CryoSat L1B data includes a waveform data flag for each measurement record         > Loss of Echo Flag: This flag is currently set for products over land, but this         Number of products with errors:       17         Product         CS_OFFL_SIR_NOPM1B_20201203T190658_20201203T190909_C001         CS_OFFL_SIR_NOPM1B_20201203T204819_20201203T205741_C001         CS_OFFL_SIR_NOPM1B_20201203T214251_20201203T215027_C001         CS_OFFL_SIR_NOPM1B_20201203T215218_20201203T215530_C001	I. The bit value of this flag indicates a is to be expected. Test Failed Loss of Echo Loss of Echo Loss of Echo	There is an error in the scaling of the L1B waveform for one or more records         any problems when set.         Description         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records
4.6 L1B Waveform Group Data Check         CryoSat L1B data includes a waveform data flag for each measurement record         > Loss of Echo Flag: This flag is currently set for products over land, but this         Number of products with errors:       17         Product       0         CS_OFFL_SIR_NOPM1B_20201203T190658_20201203T190909_C001         CS_OFFL_SIR_NOPM1B_20201203T204819_20201203T205741_C001         CS_OFFL_SIR_NOPM1B_20201203T214251_20201203T215027_C001         CS_OFFL_SIR_NOPM1B_20201203T215218_20201203T215530_C001         CS_OFFL_SIR_NOPM1B_20201203T215218_20201203T215530_C001	<ul> <li>The bit value of this flag indicates a is to be expected.</li> <li>Test Failed         <ul> <li>Loss of Echo</li> </ul> </li> </ul>	Description         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records
4.6 L1B Waveform Group Data Check         CryoSat L1B data includes a waveform data flag for each measurement record         - Loss of Echo Flag: This flag is currently set for products over land, but this         Number of products with errors:       17         Product       17         CS_OFFL_SIR_NOPM1B_20201203T190658_20201203T190909_C001         CS_OFFL_SIR_NOPM1B_20201203T204819_20201203T205741_C001         CS_OFFL_SIR_NOPM1B_20201203T214251_20201203T215027_C001         CS_OFFL_SIR_NOPM1B_20201203T215218_20201203T215530_C001         CS_OFFL_SIR_NOPM1B_20201203T061239_20201203T061330_C001         CS_OFFL_SIR_NOPN1B_20201203T061239_20201203T061330_C001	I. The bit value of this flag indicates a is to be expected. <b>Test Failed</b> Loss of Echo Loss of Echo Loss of Echo Loss of Echo Loss of Echo	There is an error in the scaling of the L1B waveform for one or more records         any problems when set.         Description         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records
B.6 L1B Waveform Group Data Check         CryoSat L1B data includes a waveform data flag for each measurement record         Loss of Echo Flag: This flag is currently set for products over land, but this         Iumber of products with errors:       17         Product         SS_OFFL_SIR_NOPM1B_20201203T190658_20201203T190909_C001         SS_OFFL_SIR_NOPM1B_20201203T204819_20201203T205741_C001         SS_OFFL_SIR_NOPM1B_20201203T214251_20201203T215027_C001         SS_OFFL_SIR_NOPM1B_20201203T215218_20201203T215530_C001         SS_OFFL_SIR_NOPM1B_20201203T061239_20201203T061330_C001         SS_OFFL_SIR_NOPN1B_20201203T0612414_20201203T061824_C001         SS_OFFL_SIR_NOPN1B_20201203T075628_20201203T075726_C001	I. The bit value of this flag indicates a is to be expected. <b>Test Failed</b> Loss of Echo Loss of Echo Loss of Echo Loss of Echo Loss of Echo Loss of Echo Loss of Echo	There is an error in the scaling of the L1B waveform for one or more records         any problems when set.         Description         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records         The tracking echo is missing for one or more records
B.6 L1B Waveform Group Data Check         CryoSat L1B data includes a waveform data flag for each measurement record         Loss of Echo Flag: This flag is currently set for products over land, but this         Iumber of products with errors:       17         Product         SS_OFFL_SIR_NOPM1B_20201203T190658_20201203T190909_C001         SS_OFFL_SIR_NOPM1B_20201203T204819_20201203T205741_C001         SS_OFFL_SIR_NOPM1B_20201203T214251_20201203T215027_C001         SS_OFFL_SIR_NOPM1B_20201203T215218_20201203T215530_C001         SS_OFFL_SIR_NOPM1B_20201203T061239_20201203T061330_C001         SS_OFFL_SIR_NOPN1B_20201203T061414_20201203T061824_C001         SS_OFFL_SIR_NOPN1B_20201203T075628_20201203T075726_C001         SS_OFFL_SIR_NOPN1B_20201203T143881_20201203T143855_C001	I. The bit value of this flag indicates a is to be expected. Test Failed Loss of Echo Loss of Echo	Description         The tracking echo is missing for one or more records
A.6 L1B Waveform Group Data Check           CryoSat L1B data includes a waveform data flag for each measurement record           Loss of Echo Flag: This flag is currently set for products over land, but this           Number of products with errors:         17           Product         17           CS_OFFL_SIR_NOPM1B_20201203T190658_20201203T190909_C001         05           CS_OFFL_SIR_NOPM1B_20201203T204819_20201203T205741_C001         05           CS_OFFL_SIR_NOPM1B_20201203T215218_20201203T215027_C001         05           CS_OFFL_SIR_NOPM1B_20201203T215218_20201203T215530_C001         05           CS_OFFL_SIR_NOPM1B_20201203T061239_20201203T061330_C001         05           CS_OFFL_SIR_NOPN1B_20201203T061239_20201203T061824_C001         05           CS_OFFL_SIR_NOPN1B_20201203T075628_20201203T075726_C001         05           CS_OFFL_SIR_NOPN1B_20201203T143831_20201203T143855_C001         05           CS_OFFL_SIR_NOPN1B_20201203T21445_20201203T143855_C001         05	I. The bit value of this flag indicates a is to be expected. Test Failed Loss of Echo Loss of Echo	There is an error in the scaling of the L1B waveform for one or more records         Description         The tracking echo is missing for one or more records         The tracking echo is missing fo
4.6 L1B Waveform Group Data Check         CryoSat L1B data includes a waveform data flag for each measurement record         > Loss of Echo Flag: This flag is currently set for products over land, but this         Number of products with errors:       17         Product       17         CS_OFFL_SIR_NOPM1B_20201203T190658_20201203T190909_C001         CS_OFFL_SIR_NOPM1B_20201203T204819_20201203T205741_C001         CS_OFFL_SIR_NOPM1B_20201203T215218_20201203T215027_C001         CS_OFFL_SIR_NOPM1B_20201203T215218_20201203T061330_C001         CS_OFFL_SIR_NOPN1B_20201203T061239_20201203T061330_C001         CS_OFFL_SIR_NOPN1B_20201203T061414_20201203T061824_C001         CS_OFFL_SIR_NOPN1B_20201203T075628_20201203T075726_C001         CS_OFFL_SIR_NOPN1B_20201203T143831_20201203T143855_C001         CS_OFFL_SIR_NOPN1B_20201203T211445_20201203T215533_C001         CS_OFFL_SIR_NOPN1B_20201203T211445_20201203T215218_C001	I. The bit value of this flag indicates a is to be expected. <b>Test Failed</b> Loss of Echo Loss of Echo	Description         The tracking echo is missing for one or more records
4.6 L1B Waveform Group Data Check         CryoSat L1B data includes a waveform data flag for each measurement record         > Loss of Echo Flag: This flag is currently set for products over land, but this         Number of products with errors:       17         Product       17         CS_OFFL_SIR_NOPM1B_20201203T190658_20201203T190909_C001         CS_OFFL_SIR_NOPM1B_20201203T204819_20201203T205741_C001         CS_OFFL_SIR_NOPM1B_20201203T215218_20201203T215027_C001         CS_OFFL_SIR_NOPM1B_20201203T215218_20201203T215530_C001         CS_OFFL_SIR_NOPM1B_20201203T061239_20201203T061330_C001         CS_OFFL_SIR_NOPN1B_20201203T061414_20201203T061824_C001         CS_OFFL_SIR_NOPN1B_20201203T061414_20201203T075726_C001         CS_OFFL_SIR_NOPN1B_20201203T143831_20201203T143855_C001         CS_OFFL_SIR_NOPN1B_20201203T2154257_20201203T21553_C001         CS_OFFL_SIR_NOPN1B_20201203T215027_20201203T21553_C001         CS_OFFL_SIR_NOPN1B_20201203T215027_20201203T21553_C001         CS_OFFL_SIR_NOPN1B_20201203T215027_20201203T21553_C001	The bit value of this flag indicates a is to be expected.     Test Failed     Loss of Echo	Description         The tracking echo is missing for one or more records
4.6 L1B Waveform Group Data Check         CryoSat L1B data includes a waveform data flag for each measurement record         P Loss of Echo Flag: This flag is currently set for products over land, but this         Number of products with errors:       17         Product         CS_OFFL_SIR_NOPM1B_20201203T190658_20201203T190909_C001         CS_OFFL_SIR_NOPM1B_20201203T204819_20201203T205741_C001         CS_OFFL_SIR_NOPM1B_20201203T214251_20201203T215027_C001         CS_OFFL_SIR_NOPM1B_20201203T215218_20201203T061330_C001         CS_OFFL_SIR_NOPM1B_20201203T061239_20201203T061824_C001         CS_OFFL_SIR_NOPN1B_20201203T075628_20201203T075726_C001         CS_OFFL_SIR_NOPN1B_20201203T143831_20201203T143855_C001         CS_OFFL_SIR_NOPN1B_20201203T215401_20201203T215518_C001         CS_OFFL_SIR_NOPN1B_20201203T215401_20201203T215524_C001         CS_OFFL_SIR_NOPN1B_20201203T215027_20201203T215524_C001         CS_OFFL_SIR_NOPN1B_20201203T225401_20201203T225954_C001         CS_OFFL_SIR_NOPN1B_20201203T071413_20201203T072035_C001	<ul> <li>I. The bit value of this flag indicates a is to be expected.</li> <li>Test Failed</li> <li>Loss of Echo</li> </ul>	There is an error in the scaling of the L1B waveform for one or more records         Description         The tracking echo is missing for one or more records         The tra
A.6 L1B Waveform Group Data Check           CryoSat L1B data includes a waveform data flag for each measurement record           > Loss of Echo Flag: This flag is currently set for products over land, but this           Number of products with errors:         17           Product         17           CS_OFFL_SIR_NOPM1B_20201203T190658_20201203T190909_C001         0.5           CS_OFFL_SIR_NOPM1B_20201203T204819_20201203T205741_C001         0.5           CS_OFFL_SIR_NOPM1B_20201203T215218_20201203T215027_C001         0.5           CS_OFFL_SIR_NOPM1B_20201203T215218_20201203T061330_C001         0.5           CS_OFFL_SIR_NOPM1B_20201203T061239_20201203T061330_C001         0.5           CS_OFFL_SIR_NOPN1B_20201203T061239_20201203T075726_C001         0.5           CS_OFFL_SIR_NOPN1B_20201203T143831_20201203T075726_C001         0.5           CS_OFFL_SIR_NOPN1B_20201203T215027_20201203T21553_C001         0.5           CS_OFFL_SIR_NOPN1B_20201203T215027_20201203T21553_C001         0.5           CS_OFFL_SIR_NOPN1B_20201203T215027_20201203T255954_C001         0.5           CS_OFFL_SIR_NOPN1B_20201203T071413_20201203T075035_C001         0.5           CS_OFFL_SIR_NOPR1B_20201203T071413_20201203T0780436_C001         0.5	The bit value of this flag indicates a is to be expected.      Test Failed     Loss of Echo	There is an error in the scaling of the L1B waveform for one or more records         any problems when set.         Description         The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPM1B_20201203T023411_20201203T023714_C001           4.6 L1B Waveform Group Data Check           CryoSat L1B data includes a waveform data flag for each measurement record           > Loss of Echo Flag: This flag is currently set for products over land, but this           Number of products with errors:         17           Product         17           CS_OFFL_SIR_NOPM1B_20201203T190658_20201203T190909_C001         CS_OFFL_SIR_NOPM1B_20201203T214251_20201203T205741_C001           CS_OFFL_SIR_NOPM1B_20201203T214251_20201203T215027_C001         CS_OFFL_SIR_NOPM1B_20201203T215218_20201203T015330_C001           CS_OFFL_SIR_NOPM1B_20201203T061239_20201203T061824_C001         CS_OFFL_SIR_NOPN1B_20201203T075628_20201203T075726_C001           CS_OFFL_SIR_NOPN1B_20201203T143831_20201203T143855_C001         CS_OFFL_SIR_NOPN1B_20201203T215027_20201203T215538_C001           CS_OFFL_SIR_NOPN1B_20201203T215027_20201203T215538_C001         CS_OFFL_SIR_NOPN1B_20201203T215027_20201203T215538_C001           CS_OFFL_SIR_NOPN1B_20201203T215027_20201203T215538_C001         CS_OFFL_SIR_NOPN1B_20201203T25504_C001           CS_OFFL_SIR_NOPN1B_20201203T2550401_20201203T225954_C001         CS_OFFL_SIR_NOPN1B_20201203T225401_20201203T225954_C001           CS_OFFL_SIR_NOPN1B_20201203T071413_20201203T02035_C001         CS_OFFL_SIR_NOPR1B_20201203T080349_20201203T080436_C001           CS_OFFL_SIR_NOPR1B_20201203T080349_20201203T080436_C001         CS_OFFL_SIR_NOPR1B_20201203T082357_20201203T080436_C001	<ul> <li>I. The bit value of this flag indicates a is to be expected.</li> <li>Test Failed</li> <li>Loss of Echo</li> </ul>	There is an error in the scaling of the L1B waveform for one or more records         Description         The tracking echo is missing for one or more records         The tra

# 5. NOP Level 2 Data Quality Check

The tracking echo is missing for one or more records

The tracking echo is missing for one or more records

#### 5.1 L2 Product Format Check

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

Number of products with errors:

## 5.2 L2 Product Header Analysis

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

Loss of Echo

Loss of Echo

# 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.

Wind Model File Usage: This file is currently not included in all L2 products.

CS\_OFFL\_SIR\_NOPR1B\_20201203T183319\_20201203T184018\_C001

CS\_OFFL\_SIR\_NOPR1B\_20201203T215530\_20201203T215747\_C001

Number of products with errors:

## 5.4 L2 Auxiliary Correction Error Check

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

0

0

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

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

> 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_NOPM_2_20201203T204819_20201203T205741_C001	Mean Sea Surface (1), Total Geocentric Ocean Tide (GOT)	There is an error with the MSS height (solution 1) and the Total Geocentr Ocean Tide height (solution 1: GOT) for one or more records
CS_OFFL_SIR_NOPM_2_20201203T212035_20201203T213646_C001	Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT)	There is an error with the Mean Dynamic Topography (solution 1) and the Total Geocentric Ocean Tide (solution 1: GOT) for one or more records
CS_OFFL_SIR_NOPN_2_20201203T003635_20201203T003902_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) for one or more records
CS_OFFL_SIR_NOPN_2_20201203T020732_20201203T021124_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Perioc Ocean Tide	There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1) and the tidal corrections for one or more records
CS_OFFL_SIR_NOPN_2_20201203T025756_20201203T025853_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height for one or more records
CS_OFFL_SIR_NOPN_2_20201203T034718_20201203T035031_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) for one or more records
CS_OFFL_SIR_NOPN_2_20201203T035546_20201203T035658_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height for one or more records
CS_OFFL_SIR_NOPN_2_20201203T052445_20201203T052907_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) for one or more records
CS_OFFL_SIR_NOPN_2_20201203T053449_20201203T053610_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) for one or more records
CS_OFFL_SIR_NOPN_2_20201203T061414_20201203T061824_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 height (solution 1) and the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records
CS_OFFL_SIR_NOPN_2_20201203T071225_20201203T071413_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height for one or more records
CS_OFFL_SIR_NOPN_2_20201203T075628_20201203T075726_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) for one or more records
CS_OFFL_SIR_NOPN_2_20201203T134951_20201203T135129_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height for one or more records
CS_OFFL_SIR_NOPN_2_20201203T143831_20201203T143855_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height for one or more records
CS_OFFL_SIR_NOPN_2_20201203T151958_20201203T152116_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height for one or more records
CS_OFFL_SIR_NOPN_2_20201203T152648_20201203T153006_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) for one or more records
CS_OFFL_SIR_NOPN_2_20201203T161758_20201203T161848_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height for one or more records
CS_OFFL_SIR_NOPN_2_20201203T165920_20201203T170036_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) for one or more records
CS_OFFL_SIR_NOPN_2_20201203T170545_20201203T170858_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Perioc Ocean Tide	There is an error with the MSS height (solution 1), the Mean Dynamic
CS_OFFL_SIR_NOPN_2_20201203T184018_20201203T184253_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) for one or more records
CS_OFFL_SIR_NOPN_2_20201203T193536_20201203T194040_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) for one or more records
CS_OFFL_SIR_NOPN_2_20201203T201910_20201203T202157_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) for one or more records
CS_OFFL_SIR_NOPN_2_20201203T211445_20201203T211553_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) for one or more records
CS_OFFL_SIR_NOPN_2_20201203T215027_20201203T215218_C001	Mean Dynamic Topography (1), Total Geocentric Ocean Tide (FES), Non- Equilibrium Long Period Ocean Tide	There is an error with the Mean Dynamic Topography (solution 1), the Total Geocentric Ocean Tide (solution 2: FES) and the Non-Equilibrium Long Period Ocean Tide for one or more records
CS_OFFL_SIR_NOPN_2_20201203T215747_20201203T220000_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height for one or more records
CS_OFFL_SIR_NOPN_2_20201203T225401_20201203T225954_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 height (solution 1) and the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records
CS_OFFL_SIR_NOPN_2_20201203T234649_20201203T234916_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height for one or more records
CS_OFFL_SIR_NOPR_2_20201203T011531_20201203T012519_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) for one or more records
CS_OFFL_SIR_NOPR_2_20201203T024800_20201203T024937_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height for one or more records
CS_OFFL_SIR_NOPR_2_20201203T025854_20201203T030643_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) for one or more records
CS_OFFL_SIR_NOPR_2_20201203T043705_20201203T044821_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) for one or more records
CS_OFFL_SIR_NOPR_2_20201203T061824_20201203T062540_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) for one or more records

CS_OFFL_SIR_NOPR_2_20201203T075726_20201203T080300_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) for one or more records
CS_OFFL_SIR_NOPR_2_20201203T144743_20201203T144938_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height for one or more records
CS_OFFL_SIR_NOPR_2_20201203T201417_20201203T201910_C001	Mean Sea Surface (1)	There is an error with the MSS height (solution 1) for one or more records
CS_OFFL_SIR_NOPR_2_20201203T210809_20201203T210903_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height for one or more records
CS_OFFL_SIR_NOPR_2_20201203T210906_20201203T211042_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height for one or more records

### 5.5 L2 Measurement Confidence Data Check

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

Number of products with errors: 1		
Product	Test Failed	Description
CS_OFFL_SIR_NOPM_2_20201203T023411_20201203T023714_C001	Power scaling error	There is an error in the scaling of the L2 waveform for one or more records

### 5.6 L2 Measurement Quality Flag Check

# L2 Quality Flags (20Hz)

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

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

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

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

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#### Number of products with errors:

Product	Test Failed	Description
CS_OFFL_SIR_NOPM_2_20201203T000220_20201203T002515_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_NOPM_2_20201203T004121_20201203T010732_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_NOPM_2_20201203T010736_20201203T010749_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_NOPM_2_20201203T013344_20201203T013628_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_NOPM_2_20201203T013724_20201203T020315_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_NOPM_2_20201203T021125_20201203T021714_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_NOPM_2_20201203T022039_20201203T023407_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_NOPM_2_20201203T024650_20201203T024759_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_NOPM_2_20201203T030948_20201203T034327_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_NOPM_2_20201203T035032_20201203T035546_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_NOPM_2_20201203T040230_20201203T040600_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_NOPM_2_20201203T041231_20201203T041413_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_NOPM_2_20201203T043259_20201203T043705_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_NOPM_2_20201203T044821_20201203T045835_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_NOPM_2_20201203T050121_20201203T052238_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_NOPM_2_20201203T053040_20201203T053449_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_NOPM_2_20201203T053955_20201203T054956_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_NOPM_2_20201203T055143_20201203T055900_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_NOPM_2_20201203T062905_20201203T063410_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_NOPM_2_20201203T063543_20201203T070139_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_NOPM_2_20201203T070405_20201203T070933_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_NOPM_2_20201203T070952_20201203T071225_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_NOPM_2_20201203T072035_20201203T073304_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_NOPM_2_20201203T073329_20201203T075050_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_NOPM_2_20201203T080757_20201203T080901_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_NOPM_2_20201203T081216_20201203T082357_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_NOPM_2_20201203T082600_20201203T084109_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_NOPM_2_20201203T084333_20201203T084831_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_NOPM_2_20201203T131430_20201203T133749_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_NOPM_2_20201203T134117_20201203T134615_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_NOPM_2_20201203T134623_20201203T134951_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_NOPM_2_20201203T135457_20201203T142748_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_NOPM_2_20201203T144005_20201203T144230_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_NOPM_2_20201203T151304_20201203T151426_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_NOPM_2_20201203T152116_20201203T152648_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_NOPM_2_20201203T153406_20201203T160728_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_NOPM_2_20201203T161944_20201203T162104_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_NOPM_2_20201203T163910_20201203T165502_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_NOPM_2_20201203T170036_20201203T170545_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_NOPM_2_20201203T171239_20201203T174648_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_NOPM_2_20201203T174809_20201203T174818_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_NOPM_2_20201203T175941_20201203T180005_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_NOPM_2_20201203T181022_20201203T181459_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_NOPM_2_20201203T181538_20201203T183319_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_NOPM_2_20201203T184253_20201203T184450_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_NOPM_2_20201203T185221_20201203T190214_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_NOPM_2_20201203T190216_20201203T190537_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_NOPM_2_20201203T190658_20201203T190909_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_NOPM_2_20201203T191350_20201203T192059_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_NOPM_2_20201203T192101_20201203T192239_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_NOPM_2_20201203T192304_20201203T192513_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_NOPM_2_20201203T194047_20201203T195825_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_NOPM_2_20201203T200006_20201203T201416_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_NOPM_2_20201203T202158_20201203T202401_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_NOPM_2_20201203T202501_20201203T202903_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_NOPM_2_20201203T203105_20201203T204538_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_NOPM_2_20201203T204819_20201203T205741_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_NOPM_2_20201203T210441_20201203T210616_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_NOPM_2_20201203T211553_20201203T211653_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_NOPM_2_20201203T212035_20201203T213646_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_NOPM_2_20201203T214251_20201203T215027_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_NOPM_2_20201203T215218_20201203T215530_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_NOPM_2_20201203T220000_20201203T220806_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_NOPM_2_20201203T221102_20201203T222541_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_NOPM_2_20201203T230125_20201203T233457_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_NOPM_2_20201203T234120_20201203T234649_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_NOPM_2_20201203T235104_20201204T001435_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_NOPN_2_20201203T170545_20201203T170858_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_NOPN_2_20201203T211653_20201203T211804_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_NOPR_2_20201203T025250_20201203T025312_C001	0 0	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.
CS_OFFL_SIR_NOPR_2_20201203T142921_20201203T142952_C001	<b>o b</b>	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.
CS_OFFL_SIR_NOPR_2_20201203T201417_20201203T201910_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 (20Hz PLRM)

Number of products with errors:

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.

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

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

Number of products with errors: 62		
Product	Test Failed	Description
CS_OFFL_SIR_NOPN_2_20201203T002754_20201203T002922_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_NOPN_2_20201203T003103_20201203T003208_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_NOPN_2_20201203T020732_20201203T021124_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_NOPN_2_20201203T025312_20201203T025435_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_NOPN_2_20201203T025756_20201203T025853_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_NOPN_2_20201203T041413_20201203T041430_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_NOPN_2_20201203T052445_20201203T052907_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_NOPN_2_20201203T055900_20201203T055956_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_NOPN_2_20201203T061414_20201203T061824_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_NOPN_2_20201203T075345_20201203T075430_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_NOPN_2_20201203T081059_20201203T081216_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_NOPN_2_20201203T130847_20201203T130953_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_NOPN_2_20201203T133948_20201203T134117_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_NOPN_2_20201203T134951_20201203T135129_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_NOPN_2_20201203T142952_20201203T143100_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_NOPN_2_20201203T145406_20201203T145511_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_NOPN_2_20201203T150008_20201203T150342_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_NOPN_2_20201203T151958_20201203T152116_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_NOPN_2_20201203T161758_20201203T161848_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_NOPN_2_20201203T163711_20201203T163910_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_NOPN_2_20201203T170545_20201203T170858_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_NOPN_2_20201203T184018_20201203T184253_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_NOPN_2_20201203T193536_20201203T194040_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_NOPN_2_20201203T202903_20201203T203040_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_NOPN_2_20201203T205741_20201203T210017_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_NOPN_2_20201203T211445_20201203T211553_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_NOPN_2_20201203T211653_20201203T211804_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_NOPN_2_20201203T213706_20201203T214251_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_NOPN_2_20201203T223712_20201203T223846_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_NOPN_2_20201203T225401_20201203T225954_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_NOPN_2_20201203T233655_20201203T233842_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_NOPN_2_20201203T234649_20201203T234916_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_NOPR_2_20201203T002515_20201203T002754_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_NOPR_2_20201203T003902_20201203T004120_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_NOPR_2_20201203T011531_20201203T012519_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_NOPR_2_20201203T020315_20201203T020732_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_NOPR_2_20201203T025435_20201203T025505_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_NOPR_2_20201203T025719_20201203T025756_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_NOPR_2_20201203T025854_20201203T030643_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_NOPR_2_20201203T030811_20201203T030829_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_NOPR_2_20201203T035658_20201203T040230_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_NOPR_2_20201203T043705_20201203T044821_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_NOPR_2_20201203T061824_20201203T062540_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_NOPR_2_20201203T071413_20201203T072035_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_NOPR_2_20201203T075726_20201203T080300_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_NOPR_2_20201203T082357_20201203T082600_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_NOPR_2_20201203T135129_20201203T135457_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_NOPR_2_20201203T144743_20201203T144938_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_NOPR_2_20201203T151426_20201203T151958_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_NOPR_2_20201203T153006_20201203T153406_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_NOPR_2_20201203T162244_20201203T162532_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_NOPR_2_20201203T165502_20201203T165920_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_NOPR_2_20201203T170859_20201203T171239_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_NOPR_2_20201203T183319_20201203T184018_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Attimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Attimeter Range and Backscatter Quality Flags have been set for one or more records.
CS_OFFL_SIR_NOPR_2_20201203T185026_20201203T185221_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_NOPR_2_20201203T190537_20201203T190658_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_NOPR_2_20201203T201417_20201203T201910_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_NOPR_2_20201203T204538_20201203T204818_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_NOPR_2_20201203T210809_20201203T210903_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_NOPR_2_20201203T210906_20201203T211042_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_NOPR_2_20201203T222541_20201203T223341_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_NOPR_2_20201203T224707_20201203T224729_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 & 1Hz PLRM)		

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

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

145

57

104

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

Number of products with errors:

### 5.7 L2 Ocean Retracking Quality Check

## L2 Retracking Flags (20Hz)

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

Ocean Retracking Quality Flag: This flag is currently set for products falling at ocean/ land boundaries, but this is expected.

Number of products with errors:

# L2 Retracking Flags (20Hz, PLRM)

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

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

#### Number of products with errors:

# 7. NOP 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_NOPM1B	161	161	5	156	0
SIR_NOPR1B	77	77	0	77	0
SIR_NOPN1B	74	74	4	70	0
SIR_NOPM_2	161	161	105	52	4
SIR_NOPR_2	77	77	19	55	3
SIR_NOPN_2	74	74	29	44	1

# 7.1 QCC Errors

# Number of QCC reports with errors:

Number of QCC	reports with e	rrors:	17								
Total number of occurrences of each error											
Product Type	EOVSNCDF	MPHSVSNCDF	RLOBOPNCDF	RL	RL	RLOBOPNCDF	RL	RL	-	-	-
SIR_NOPM_2	4	4	0	0	0	0	0	0			
SIR_NOPN_2	1	1	0	0	0	0	0	0			1
SIR_NOPR_2	0	0	3	2	3	3	2	3			

Test Description Key:	ast Description Key:						
Abbreviation	Test name	Details					
EOVSNCDF	EnumOrbitVectorSourceNetCDF	Orbit vector source should match one of the allowed enumeration values - NetCDF					
MPHSVSNCDF	MPH_State_Vector_Source_NetCDF	State_Vector_Source mismatch					
RLOBOPNCDF	RangeLatitudeOrBlankOP_7NetCDF	Latitude should be between -90E7 and 90E7 - NetCDF					
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 - NetCDF					
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

1442

	Total number of occurrences of each warning								
Product Type	BCSHNCDF	IOHHMOOR	MVIOEPFDNCDF	MVIOEPNCDF	MVIONCDF	RBSZOPOEPFDNCDF	RBSZOPOEPFDPLRMNCD		
SIR_NOPM1B	156	0	0	0	0	0	0		
SIR_NOPM_2	0	0	41	43	2	40	0		
SIR_NOPN1B	69	0	0	0	0	0	0		
SIR_NOPN_2	0	0	7	25	5	18	19		
SIR_NOPR1B	73	0	0	0	0	0	0		
SIR_NOPR_2	0	3	32	37	0	24	20		
		·							
Product Type	RBSZOPOEPNCDF	RNELPOTONCDF	RPEPOPFDLRMNCDF	RPEPOPFDPLRMSARNC	RPEPOPFDPLRMSINNCD	RPEPOPFDSARNCDF	RPEPOPFDSINNCDF		
SIR_NOPM1B	0	0	0	0	0	0	0		
SIR_NOPM_2	28	1	34	0	0	0	0		
SIR_NOPN1B	0	0	0	0	0	0	0		
SIR_NOPN_2	12	0	0	0	16	0	24		
SIR_NOPR1B	0	0	0	0	0	0	0		
SIR_NOPR_2	10	1	0	46	0	48	0		
		·							
Product Type	RPEPOPLRMNCDF	RPEPOPSARNCDF	RPEPOPSINNCDF	RSSBCONCDF	RSSHAOFDNCDF	RSSHAOFDPLRMNCDF	RSSHAONCDF		
SIR_NOPM1B	0	0	0	0	0	0	0		
SIR_NOPM_2	30	0	0	5	27	0	4		
SIR_NOPN1B	0	0	0	0	0	0	0		
SIR_NOPN_2	0	0	21	17	30	39	16		
SIR_NOPR1B	0	0	0	0	0	0	0		
SIR_NOPR_2	0	41	0	3	49	28	7		

Product Type	RSWHOEPFDNCDF	RSWHOEPFDPLRMNCDF	RSWHOEPNCDF	SOOHHIFHD	SCSTODHRNCDF	SCSTODNCDF	-
SIR_NOPM1B	0	0	0	0	0	1	
SIR_NOPM_2	33	0	4	0	0	0	
SIR_NOPN1B	0	0	0	0	35	2	
SIR_NOPN_2	18	19	8	0	0	0	
SIR_NOPR1B	0	0	0	0	77	9	
SIR_NOPR_2	33	42	3	7	0	0	

Test Description Key:							
Abbreviation	Test name	Details					
BCSHNCDF	BurstCounterStep20HzNetCDF	The burst counter should be one higher with regard to the previous burst counter					
IOHHMOOR	IndexOf1Hzin20HzMappingOutOfRange	The mapping of 20 Hz to 1 Hz measurements should be in the range 0 to (number of 1 Hz samples - 1)					
MVIOEPFDNCDF	MissingValueIntOceanExcludingPolarFD2NetCDF	The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees					
MVIOEPNCDF	MissingValueIntOceanExcludingPolarNetCDF	The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees					
MVIONCDF	MissingValueIntOceanNetCDF	The value should not be a 'missing value' for surface type 0 only					
RBSZOPOEPFDNCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2NetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees					
RBSZOPOEPFDPLRM	RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2PLRMNetCDF	The backscatter signa 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	RangePeakinessExcludingPolarOPFD2PLRMSARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees					
RPEPOPFDPLRMSINN	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	RangeSeaSurfaceHeightAnomalyOceanFD3PLRMNetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean					
RSSHAONCDF	RangeSeaSurfaceHeightAnomalyOceanNetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean					
RSWHOEPFDNCDF	RangeSignificantWaveHeightOceanExcludingPolarFD2NetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees					
RSWHOEPFDPLRMNC	RangeSignificantWaveHeightOceanExcludingPolarFD2PLRMNetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees					
RSWHOEPNCDF	RangeSignificantWaveHeightOceanExcludingPolarNetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees					
SOOHHIFHD	SameOrOneHigher1HzIndexFor20HzData	The 1 Hz index of a 20 Hz sample should be the same or 1 higher than its previous sample					

SCSTODHRNCDF	SequenceCounterStepTODHRNetCDF		The sequence counter should be modulo 4 higher with regard to the previous sequence counter
SCSTODNCDF	SequenceCounterStepTODNetCDF		The sequence counter should be one higher (modulo 16384) with regard to the previous sequence counter
7.3 Missing QCC	Reports		
Number of products wi	ith missing QCC reports:	0	