

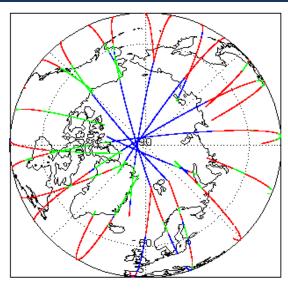
# 1. Overview

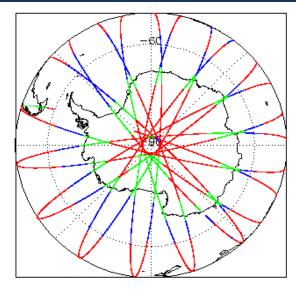
Report Production:	25-Sep-2020	
Processor Used:	CryoSat Ocean Processor	
Data Used:	Near Real Time Ocean Products (NOP) L1B & L2 Science Data	

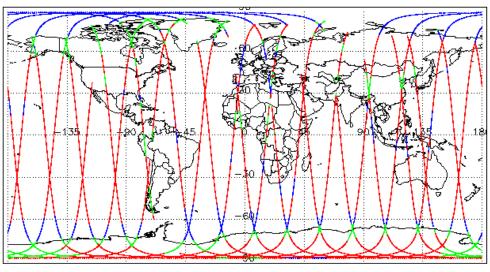
Check	L1 & L2
Server check: science-pds.cryosat.esa.int	Nominal
Server check: calval-pds.cryosat.esa.int	Nominal
Product Software Check	Nominal
Product Format Check	Nominal
Product Header Analysis	Nominal
Auxiliary Data File Usage Check	Nominal
Auxiliary Correction Error Check	See Section 5.4
Measurement Confidence Data Check	See Section 4.5, 4.6
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

Mis	Mission / Instrument News	
2	23-Sep-2020	None
2	4-Sep-2020	None
2	25-Sep-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

#### 4.2 L1B Product Header Analysis

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

L1B Processing Quality HR: The I1b\_proc\_flag\_hr flag is currently set all L1B IOPR and IOPN products because the I1b\_processing\_quality\_hr field is not correctly configured in the OSAR and OSARIn chains. A modification is required in the next release.

Number of products with errors:

# 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.

Dynamic Atmospheric Correction: The DAC is missing in all products because the auxiliary files required are not 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. The bit value of this flag indicates any problems when set.

Number of products with errors:

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#### 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 NOPR products due to a configuration issue. This is being investigated and will be updated in the next SW update.

Number of products with errors:

0

13

### 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.

Number of products with errors:

**Test Failed** Product Description CS\_OFFL\_SIR\_NOPM1B\_20200924T005631\_20200924T011335\_C001 Loss of Echo The tracking echo is missing for one or more records CS OFFL SIR NOPM1B 20200924T050642 20200924T053423 C001 Loss of Echo The tracking echo is missing for one or more records CS\_OFFL\_SIR\_NOPM1B\_20200924T232103\_20200924T234518\_C001 Loss of Echo The tracking echo is missing for one or more records CS\_OFFL\_SIR\_NOPN1B\_20200924T014431\_20200924T014619\_C001 Loss of Echo The tracking echo is missing for one or more records Loss of Echo CS\_OFFL\_SIR\_NOPN1B\_20200924T023030\_20200924T023618\_C001 The tracking echo is missing for one or more records CS OFFL SIR NOPN1B 20200924T055249 20200924T055635 C001 Loss of Echo The tracking echo is missing for one or more records CS\_OFFL\_SIR\_NOPN1B\_20200924T071933\_20200924T072020\_C001 Loss of Echo The tracking echo is missing for one or more records CS\_OFFL\_SIR\_NOPN1B\_20200924T104219\_20200924T104324\_C001 Loss of Echo The tracking echo is missing for one or more records CS OFFL SIR NOPN1B 20200924T122023 20200924T122240 C001 Loss of Echo The tracking echo is missing for one or more records CS\_OFFL\_SIR\_NOPN1B\_20200924T153357\_20200924T153938\_C001 Loss of Echo The tracking echo is missing for one or more records CS\_OFFL\_SIR\_NOPN1B\_20200924T171203\_20200924T171631\_C001 Loss of Echo The tracking echo is missing for one or more records CS\_OFFL\_SIR\_NOPN1B\_20200924T222150\_20200924T222535\_C001 Loss of Echo The tracking echo is missing for one or more records

### 5. NOP Level 2 Data Quality Check

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:

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.

Loss of Echo

Number of products with errors:

0

### 5.3 L2 Auxiliary Data File Usage Check

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

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

CS OFFL SIR NOPR1B 20200924T112644 20200924T112736 C001

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 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.

Number of products with errors:

36

Product	Test Failed	Description
CS_OFFL_SIR_NOPM_2_20200924T154717_20200924T154943_C001	ilviean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography height for one or more records

CS_OFFL_SIR_NOPM_2_20200924T232103_20200924T234518_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_20200924T005115_20200924T005222_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_20200924T013418_20200924T013620_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_20200924T023030_20200924T023618_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_20200924T031351_20200924T031508_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_20200924T045311_20200924T045431_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_20200924T063301_20200924T063626_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_20200924T073144_20200924T073414_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_20200924T081206_20200924T081527_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_20200924T082044_20200924T082207_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_20200924T090154_20200924T090421_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_20200924T095936_20200924T100051_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_20200924T104219_20200924T104324_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_20200924T113642_20200924T113842_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_20200924T122023_20200924T122240_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_20200924T140041_20200924T140115_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_20200924T145555_20200924T145816_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_20200924T153357_20200924T153938_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_20200924T162529_20200924T162653_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_20200924T171203_20200924T171631_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_20200924T180530_20200924T180654_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_20200924T181452_20200924T181604_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_20200924T185411_20200924T185558_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_20200924T195142_20200924T195445_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_20200924T212500_20200924T212807_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_20200924T213044_20200924T213551_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_20200924T230523_20200924T230757_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_20200924T040546_20200924T041048_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_20200924T054428_20200924T055249_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_20200924T072344_20200924T073144_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_20200924T090421_20200924T091218_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_20200924T104324_20200924T105048_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_20200924T122240_20200924T122948_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_20200924T140115_20200924T140831_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_20200924T204738_20200924T205332_C001	Mean Sea Surface (1), Total Geocentric Ocean Tide (GOT)	There is an error with the MSS height (solution 1) and the Total Geocentric Ocean Tide height (solution 1: GOT) 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:

C

## 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.

lumber of products with errors:

Product	Test Failed	Description
CS OFFE SIR NOPM 2 202009241000121 202009241000528 C001	3	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.
CS_OFFL_SIR_NOPM_2_20200924T000810_20200924T002041_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_NOPM_2_20200924T005413_20200924T005557_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags set for one or more records.  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags set for one or more records.  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags set for one or more records.  The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags set for one or more records.  The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags set for one or more records.	lity Flags nave been
CS_OFFL_SIR_NOPM_2_20200924T005631_20200924T011335_C001  and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality set for one or more records.  Ocean Altimeter Range, SSHA, SWH  The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags	nave been
Altimeter Range and Backscatter Quality set for one or more records.	
CS_OFFL_SIR_NOPM_2_20200924T012756_20200924T013140_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags set for one or more records.	
CS_OFFL_SIR_NOPM_2_20200924T013620_20200924T014431_C001  OCOG Altimeter Range Quality, OCOG Backscatter Quality  The OCOG Altimeter Range and Backscatter Quality Flags have for one or more records.	e been set
CS_OFFL_SIR_NOPM_2_20200924T014750_20200924T020241_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags and Backscatter Quality Flags set for one or more records.	
CS_OFFL_SIR_NOPM_2_20200924T020727_20200924T021054_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags and Backscatter Quality Flags set for one or more records.	
CS_OFFL_SIR_NOPM_2_20200924T023618_20200924T024458_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags set for one or more records.	
CS_OFFL_SIR_NOPM_2_20200924T024534_20200924T031124_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags set for one or more records.	
CS_OFFL_SIR_NOPM_2_20200924T031509_20200924T031712_C001  OCOG Altimeter Range Quality, OCOG Backscatter Quality  The OCOG Altimeter Range and Backscatter Quality Flags have for one or more records.	e been set
CS_OFFL_SIR_NOPM_2_20200924T031749_20200924T032307_C001  OCOG Altimeter Range Quality, OCOG Backscatter Quality  The OCOG Altimeter Range and Backscatter Quality Flags have for one or more records.	e been set
CS_OFFL_SIR_NOPM_2_20200924T032809_20200924T035100_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags set for one or more records.	
CS_OFFL_SIR_NOPM_2_20200924T042343_20200924T045010_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags set for one or more records.	
CS_OFFL_SIR_NOPM_2_20200924T045717_20200924T050321_C001  OCOG Altimeter Range Quality, OCOG Backscatter Quality  The OCOG Altimeter Range and Backscatter Quality Flags have for one or more records.	e been set
CS_OFFL_SIR_NOPM_2_20200924T050642_20200924T053423_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags set for one or more records.	
CS_OFFL_SIR_NOPM_2_20200924T055635_20200924T062823_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags set for one or more records.	
CS_OFFL_SIR_NOPM_2_20200924T063627_20200924T064153_C001  OCOG Altimeter Range Quality, OCOG Backscatter Quality  The OCOG Altimeter Range and Backscatter Quality Flags have for one or more records.	e been set
CS_OFFL_SIR_NOPM_2_20200924T072038_20200924T072344_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags set for one or more records.	
CS_OFFL_SIR_NOPM_2_20200924T073530_20200924T074432_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags set for one or more records.	
CS_OFFL_SIR_NOPM_2_20200924T074717_20200924T080834_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags set for one or more records.	
CS_OFFL_SIR_NOPM_2_20200924T081527_20200924T081631_C001  OCOG Altimeter Range Quality, OCOG Backscatter Quality  The OCOG Altimeter Range and Backscatter Quality Flags have for one or more records.	e been set
CS_OFFL_SIR_NOPM_2_20200924T081635_20200924T082043_C001  OCOG Altimeter Range Quality, OCOG Backscatter Quality  The OCOG Altimeter Range and Backscatter Quality Flags have for one or more records.	e been set
CS_OFFL_SIR_NOPM_2_20200924T082611_20200924T084221_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags set for one or more records.	
CS_OFFL_SIR_NOPM_2_20200924T091218_20200924T094720_C001  Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags set for one or more records.	
CS_OFFL_SIR_NOPM_2_20200924T095055_20200924T095530_C001  OCOG Altimeter Range Quality, OCOG Backscatter Quality  The OCOG Altimeter Range and Backscatter Quality Flags have for one or more records.	e been set

CS_OFFL_SIR_NOPM_2_20200924T100631_20200924T103816_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_20200924T105048_20200924T110512_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_20200924T111304_20200924T112644_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_20200924T112913_20200924T113429_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_20200924T114447_20200924T115808_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_20200924T120022_20200924T120155_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_20200924T120217_20200924T121740_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_20200924T121805_20200924T121956_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_20200924T123951_20200924T124731_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_20200924T125153_20200924T130527_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_20200924T130840_20200924T131341_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_20200924T131419_20200924T131520_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_20200924T132821_20200924T133441_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_20200924T133928_20200924T134402_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_20200924T135357_20200924T135601_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_20200924T141221_20200924T141410_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_20200924T142342_20200924T144355_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_20200924T144908_20200924T145259_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_20200924T145305_20200924T145314_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_20200924T145320_20200924T145554_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_20200924T150030_20200924T152745_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_20200924T155958_20200924T162321_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_20200924T162653_20200924T163214_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_20200924T163220_20200924T163546_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_20200924T163935_20200924T171203_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_20200924T172533_20200924T172643_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_20200924T173518_20200924T174507_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_20200924T175845_20200924T180244_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_20200924T180655_20200924T181452_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_20200924T182035_20200924T185204_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_20200924T190415_20200924T190629_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_20200924T191751_20200924T191845_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_20200924T192504_20200924T192507_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_20200924T193329_20200924T194054_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_20200924T194628_20200924T195142_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_20200924T195904_20200924T201955_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_20200924T202240_20200924T203407_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_20200924T204327_20200924T204738_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_20200924T210247_20200924T210851_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_20200924T211038_20200924T212034_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_20200924T212807_20200924T213044_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_20200924T213812_20200924T220721_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_20200924T220829_20200924T221148_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_20200924T222641_20200924T225821_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_20200924T230757_20200924T230952_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_20200924T231158_20200924T231457_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_20200924T231726_20200924T232029_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_20200924T232103_20200924T234518_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_20200924T000026_20200924T000121_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_NOPN_2_20200924T014431_20200924T014619_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_20200924T153357_20200924T153938_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_20200924T163546_20200924T163708_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_20200924T071005_20200924T071339_C001	0 3.	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.
CS_OFFL_SIR_NOPR_2_20200924T225822_20200924T230523_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.

### L2 Quality Flags (20Hz PLRM)

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

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

Number of products with errors:

	Test Failed	Description
CS_OFFL_SIR_NOPN_2_20200924T000528_20200924T000704_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_20200924T003406_20200924T003625_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_20200924T013418_20200924T013620_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.
CS_OFFL_SIR_NOPN_2_20200924T021124_20200924T021509_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.
CS_OFFL_SIR_NOPN_2_20200924T023030_20200924T023618_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.
CS_OFFL_SIR_NOPN_2_20200924T031351_20200924T031508_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.
CS_OFFL_SIR_NOPN_2_20200924T032307_20200924T032542_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.
CS_OFFL_SIR_NOPN_2_20200924T045311_20200924T045431_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.
CS_OFFL_SIR_NOPN_2_20200924T055249_20200924T055635_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.
CS_OFFL_SIR_NOPN_2_20200924T063301_20200924T063626_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_20200924T071933_20200924T072020_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.
CS_OFFL_SIR_NOPN_2_20200924T084221_20200924T084548_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.
CS_OFFL_SIR_NOPN_2_20200924T090154_20200924T090421_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_20200924T122023_20200924T122240_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.
CS_OFFL_SIR_NOPN_2_20200924T123655_20200924T123951_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.
CS_OFFL_SIR_NOPN_2_20200924T130652_20200924T130840_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.
CS_OFFL_SIR_NOPN_2_20200924T132320_20200924T132537_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.
CS_OFFL_SIR_NOPN_2_20200924T132550_20200924T132820_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.
CS_OFFL_SIR_NOPN_2_20200924T133453_20200924T133912_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.
CS_OFFL_SIR_NOPN_2_20200924T134402_20200924T134525_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_20200924T135601_20200924T135938_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records.

CS_OFFL_SIR_NOPN_2_20200924T141710_20200924T142109_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_20200924T153357_20200924T153938_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_20200924T154943_20200924T155026_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_20200924T162529_20200924T162653_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_20200924T171203_20200924T171631_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_20200924T172415_20200924T172451_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_20200924T190629_20200924T190701_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_20200924T190813_20200924T190936_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_20200924T191345_20200924T191356_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_20200924T210045_20200924T210246_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_20200924T212500_20200924T212807_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_20200924T213044_20200924T213551_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_20200924T222150_20200924T222535_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_20200924T234519_20200924T234746_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_20200924T002242_20200924T002429_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_20200924T002431_20200924T002443_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_20200924T031125_20200924T031351_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_20200924T032542_20200924T032808_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_20200924T045010_20200924T045311_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_20200924T054428_20200924T055249_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_20200924T062823_20200924T063300_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_20200924T064311_20200924T064559_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_20200924T071005_20200924T071339_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_20200924T071638_20200924T071919_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_20200924T072344_20200924T073144_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_20200924T080834_20200924T081206_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_20200924T082207_20200924T082611_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_20200924T090421_20200924T091218_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_20200924T100052_20200924T100631_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_20200924T104324_20200924T105048_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_20200924T113842_20200924T114447_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_20200924T115808_20200924T120022_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_20200924T120156_20200924T120216_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_20200924T121956_20200924T122023_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_20200924T122240_20200924T122948_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_20200924T140115_20200924T140831_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_20200924T142207_20200924T142341_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_20200924T163708_20200924T163935_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_20200924T175524_20200924T175845_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_20200924T180244_20200924T180530_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_20200924T181604_20200924T182035_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_20200924T190936_20200924T191041_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_20200924T194054_20200924T194502_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_20200924T195445_20200924T195904_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_20200924T204738_20200924T205332_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_20200924T212034_20200924T212500_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_20200924T221407_20200924T221541_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_20200924T225822_20200924T230523_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_20200924T231619_20200924T231726_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.

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

 $\label{lem:currently} \textbf{Currently, there are several common flags raised in the Level 2 products, which are summarised below.}$ 

> 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:

170

## 5.7 L2 Ocean Retracking Quality Check

### L2 Retracking Flags (20Hz)

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:

120

# 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	147	147	6	141	0
SIR_NOPR1B	78	78	0	78	0
SIR_NOPN1B	101	101	1	99	1
SIR_NOPM_2	147	147	92	55	0
SIR_NOPR_2	78	78	20	58	0
SIR_NOPN_2	101	101	40	61	0

### 7.1 QCC Errors

### Number of QCC reports with errors:

					i otal mamber	or occurrences	or cacin circi				
<b>Product Type</b>	EOVSNCDF	MPHSVSNCDF	-	-	-	-	-	-	-	-	-
SIR NOPN1B	1	1									

Test 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			

### 7.2 QCC Warnings

#### Number of QCC reports with warnings

1622

				i Otal Iluliik	der of occurrences of ea	acii waiiiiig		
	Product Type	BCSHNCDF	MVIOEPFDNCDF	MVIOEPNCDF	MVIONCDF	RBSZOPOEPFDNCDF	RBSZOPOEPFDPLRMNC	RBSZOPOEPNCDF
Ī	SIR_NOPM1B	141	0	0	0	0	0	0
	SIR_NOPM_2	0	42	43	0	40	0	32
	SIR_NOPN1B	96	0	0	0	0	0	0
	SIR_NOPN_2	0	8	33	2	21	26	17
	SIR_NOPR1B	75	0	0	0	0	0	0
	SIR NOPR 2	0	36	41	1	32	28	19

Product Type	RNELPOTONCDF	RPEPOPFDLRMNCDF	RPEPOPFDPLRMSARNC	RPEPOPFDPLRMSINNCD	RPEPOPFDSARNCDF	RPEPOPFDSINNCDF	RPEPOPLRMNCDF
SIR_NOPM1B	0	0	0	0	0	0	0
SIR_NOPM_2	0	36	0	0	0	0	28
SIR_NOPN1B	0	0	0	0	0	0	0
SIR_NOPN_2	0	0	0	22	0	33	0
SIR_NOPR1B	0	0	0	0	0	0	0
SIR NOPR 2	3	0	42	0	48	0	0

Product Type	RPEPOPSARNCDF	RPEPOPSINNCDF	RSSBCONCDF	RSSHAOFDNCDF	RSSHAOFDPLRMNCDF	RSSHAONCDF	RSWHOEPFDNCDF
SIR_NOPM1B	0	0	0	0	0	0	0
SIR_NOPM_2	0	0	3	25	0	2	36
SIR_NOPN1B	0	0	0	0	0	0	0
SIR_NOPN_2	0	28	22	51	49	30	29
SIR_NOPR1B	0	0	0	0	0	0	0
SIR_NOPR_2	43	0	0	53	37	8	39

Product Type	RSWHOEPFDPLRMNCDF	RSWHOEPNCDF	SPHRTASCNSNCDF	SOOHHIFHD	SCSTODHRNCDF	SCSTODNCDF	•
SIR_NOPM1B	0	0	0	0	0	0	
SIR_NOPM_2	0	3	0	0	0	0	
SIR_NOPN1B	0	0	0	0	44	0	
SIR_NOPN_2	30	14	1	0	0	0	
SIR_NOPR1B	0	0	0	0	78	3	
SIR_NOPR_2	43	4	0	2	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				
MVIOEPNCDF	MissingValueIntOceanExcludingPolarFD2NetCDF	The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees				
MVIONCDF	MissingValueIntOceanExcludingPolarNetCDF	The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees				
RBSZOPOEPFDNCDF	MissingValueIntOceanNetCDF	The value should not be a 'missing value' for surface type 0 only				
RBSZOPOEPFDPLRM NCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2NetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees				
RBSZOPOEPNCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2PLRMNetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees				
RNELPOTONCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarNetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees				
RPEPOPFDLRMNCDF	RangeNELPOceanTideOceanNetCDF	The Non-equilibrium long period ocean loading tide height should be between -40mm and 40mm (or missing) for surface type = ocean				
RPEPOPFDPLRMSAR NCDF	RangePeakinessExcludingPolarOPFD2LRMNetCDF	The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees				
	RangePeakinessExcludingPolarOPFD2PLRMSARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees				
RPEPOPFDSARNCDF	RangePeakinessExcludingPolarOPFD2PLRMSINNetCDF	The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees				
RPEPOPFDSINNCDF	RangePeakinessExcludingPolarOPFD2SARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees				
RPEPOPLRMNCDF	RangePeakinessExcludingPolarOPFD2SINNetCDF	The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees				
RPEPOPSARNCDF	RangePeakinessExcludingPolarOPLRMNetCDF	The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees				
RPEPOPSINNCDF	RangePeakinessExcludingPolarOPSARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees				
RSSBCONCDF	RangePeakinessExcludingPolarOPSINNetCDF	The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees				

RSSHAOFDNCDF	RangeSeaStateBiasCorrectionOceanNetCDF	The sea state bias correction should be between -500mm and 0mm (or missing) for surface type = ocean
RSSHAOFDPLRMNCD	RangeSeaSurfaceHeightAnomalyOceanFD3NetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean
RSSHAONCDF	RangeSeaSurfaceHeightAnomalyOceanFD3PLRMNetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean
RSWHOEPFDNCDF	RangeSeaSurfaceHeightAnomalyOceanNetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean
RSWHOEPFDPLRMNC	RangeSignificantWaveHeightOceanExcludingPolarFD2NetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
	RangeSignificantWaveHeightOceanExcludingPolarFD2PLRMNetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
SPHRTASCNSNCDF	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	SPH_Rel_Time_ASC_Node_Start_v2_NetCDF	Rel_Time_ASC_Node_Start mismatch (DBL ASC, rounded up to 0.1)
SCSTODHRNCDF	SameOrOneHigher1HzIndexFor20HzData	The 1 Hz index of a 20 Hz sample should be the same or 1 higher than its previous sample
SCSTODNCDF	SequenceCounterStepTODHRNetCDF	The sequence counter should be modulo 4 higher with regard to the previous sequence counter
0	SequenceCounterStepTODNetCDF	The sequence counter should be one higher (modulo 16384) with regard to the previous sequence counter

# 7.3 Missing QCC Reports

Number of products with missing QCC reports:

0