QA4EO Daily Report for NOP data: 04/08/2022

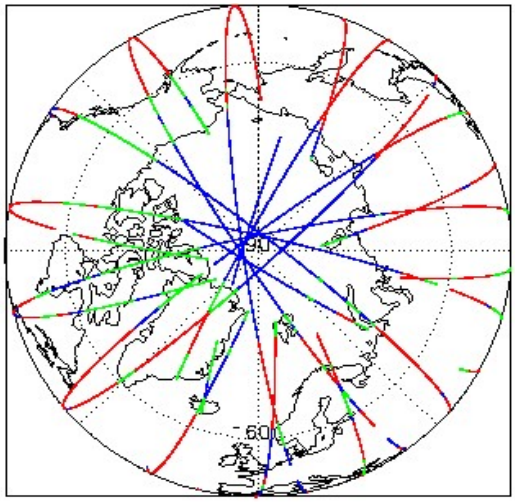
1. Overview

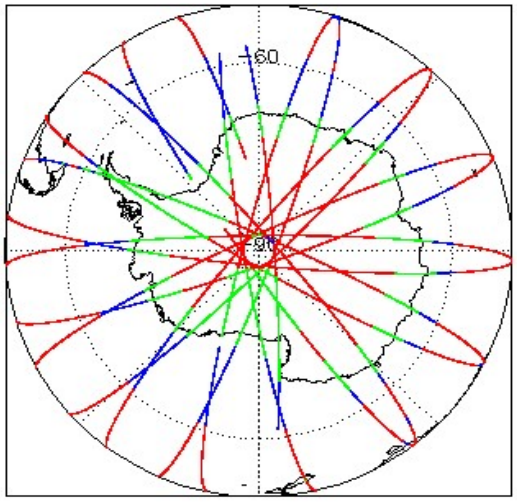
Report Production:	05-Aug-2022
Processor Used:	CryoSat Ocean Processor
Data Used:	Near Real Time Ocean Products (NOP) L1B & L2 Science Data

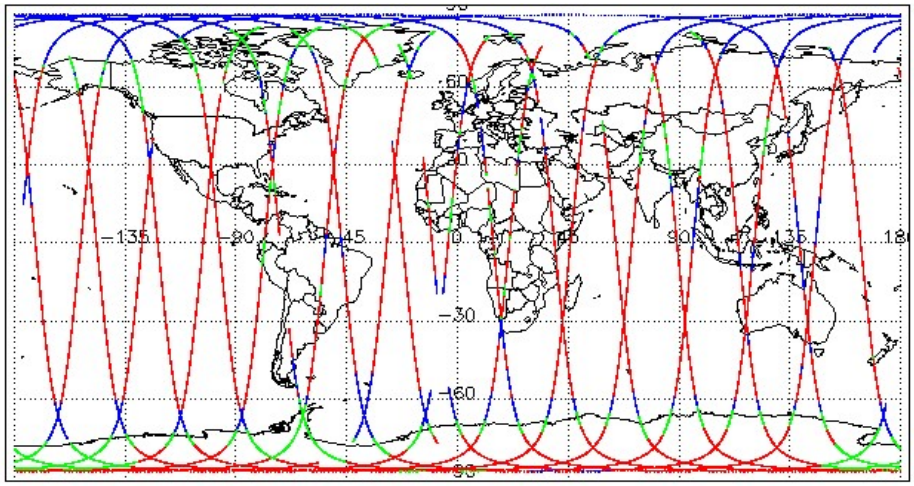
Check	L1 & L2
Server check: science-pds.cryosat.esa.int	Nominal
Server check: calval-pds.cryosat.esa.int	Nominal
Product Software Check	Nominal
Product Format Check	Nominal
Product Header Analysis	Nominal
Auxiliary Data File Usage Check	Nominal
Auxiliary Correction Error Check	See Section 5.4
Measurement Confidence Data Check	See Section 4.5, 4.6 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 7.2

Mission / Instrument News	
03-Aug-2022	SIRAL unavailability due to orbit manoeuvre 16:29:46 - 18:15:58
04-Aug-2022	None
05-Aug-2022	Nothing planned

2. Global Coverage







Mode Coverage

	LRM
	SAR
	SARIn

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 NetCDF product file (.nc).

Number of products with errors: 0

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 l1b_proc_flag_hr flag is currently set all L1B NOPR and NOPN products because the l1b_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: 0

4.3 L1B Auxilary Data File Usage Check

Each product is checked for missing Data Set Descriptors with respect to a pre-determined baseline and also to 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: 0

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. The attitude correction is not actually missing, This is being investigated and will be updated in the next SW update.

Number of products with errors: 2

Product	Test Failed	Description
CS_OFFL_SIR_NOPM1B_20220804T135151_20220804T135407_C001	Power scaling error	There is an error in the scaling of the L1B waveform for one or more records
CS_OFFL_SIR_NOPM1B_20220804T202712_20220804T202844_C001	Power scaling error	There is an error in the scaling of the L1B waveform for one or more records

4.6 L1B Waveform Group Data Check

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

> Loss of Echo Flag: This flag is currently set for occasional products over land, but this is to be expected.

Number of products with errors: 17

Product	Test Failed	Description
CS_OFFL_SIR_NOPN1B_20220804T022056_20220804T022250_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220804T031627_20220804T032233_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220804T035809_20220804T040228_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220804T071204_20220804T071745_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220804T085335_20220804T085509_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220804T104418_20220804T104448_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220804T140714_20220804T140823_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220804T172019_20220804T172139_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220804T172143_20220804T172507_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220804T195251_20220804T195417_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220804T230035_20220804T230447_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPR1B_20220804T032452_20220804T032733_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPR1B_20220804T035016_20220804T035033_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPR1B_20220804T063808_20220804T064028_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPR1B_20220804T112154_20220804T112545_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPR1B_20220804T202135_20220804T202226_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPR1B_20220804T202336_20220804T202525_C001	Loss of Echo	The tracking echo is missing for one or more records

5. NOP Level 2 Data Quality Check

5.1 L2 Product Format Check

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

Number of products with errors: 0

5.2 L2 Product Header Analysis

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

Number of products with errors: 0

5.3 L2 Auxiliary Data File Usage Check

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

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

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: 128

Product	Test Failed	Description
CS_OFFL_SIR_NOPM_2_20220803T235641_20220804T000052_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T000539_20220804T003143_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T004110_20220804T004316_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T005144_20220804T010611_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T011052_20220804T011228_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T011231_20220804T012354_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T012438_20220804T012751_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T013015_20220804T013534_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T013541_20220804T013547_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T013553_20220804T013756_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T014637_20220804T015911_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T020126_20220804T021934_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T023120_20220804T023657_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T024045_20220804T025015_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T025252_20220804T030645_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T030941_20220804T031446_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T031453_20220804T031504_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T031511_20220804T031626_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T032338_20220804T032420_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T032734_20220804T033043_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T034040_20220804T034120_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T034123_20220804T034150_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T034153_20220804T034227_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T034238_20220804T034503_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T034627_20220804T035016_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T035033_20220804T035333_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T040946_20220804T041659_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T041701_20220804T041719_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records

CS_OFFL_SIR_NOPM_2_20220804T041721_20220804T041728_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T041730_20220804T041844_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T041847_20220804T041858_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T042205_20220804T042207_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T042210_20220804T042317_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T042953_20220804T044543_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T044938_20220804T045403_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T045410_20220804T045419_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T045425_20220804T045601_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T050123_20220804T052515_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T052517_20220804T052519_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T052521_20220804T052525_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T052527_20220804T052534_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T052536_20220804T053500_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T053622_20220804T053703_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T054927_20220804T055043_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T055214_20220804T055533_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T055551_20220804T055638_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T060025_20220804T062450_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T062758_20220804T063318_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T063325_20220804T063650_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T064029_20220804T070725_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T070851_20220804T071203_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T072830_20220804T073452_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T073543_20220804T073739_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T073741_20220804T073844_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T073847_20220804T074451_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T074454_20220804T080425_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T080746_20220804T081557_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T082046_20220804T085334_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records

CS_OFFL_SIR_NOPM_2_20220804T090610_20220804T090740_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T090744_20220804T090843_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T091059_20220804T091450_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T091513_20220804T091544_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T091825_20220804T091946_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T092130_20220804T092623_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T092642_20220804T093129_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T093235_20220804T093459_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T093504_20220804T093516_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T093724_20220804T094250_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T094727_20220804T095247_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T095949_20220804T102058_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T102344_20220804T103521_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T104448_20220804T104917_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T105241_20220804T105247_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T105258_20220804T105414_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T105421_20220804T105432_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T105444_20220804T105504_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T105631_20220804T110134_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T110505_20220804T110950_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T112817_20220804T113148_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T113902_20220804T114347_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220804T114357_20220804T121523_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T000052_20220804T000200_C001	GIM Ionospheric Correction, Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220804T003953_20220804T004110_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T004317_20220804T004429_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220804T012836_20220804T013015_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T013757_20220804T013944_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220804T022056_20220804T022250_C001	GIM Ionospheric Correction, Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction and Mean Dynamic Topography height (solution 1) for one or more records

CS_OFFL_SIR_NOPN_2_20220804T022254_20220804T022308_C001	GIM Ionospheric Correction, Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220804T023658_20220804T024044_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T030756_20220804T030941_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T031504_20220804T031510_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T031627_20220804T032233_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220804T032254_20220804T032317_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T032447_20220804T032451_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T034504_20220804T034626_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T035339_20220804T035501_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T035717_20220804T035733_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T035809_20220804T040228_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220804T040925_20220804T040927_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T041859_20220804T042204_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T044702_20220804T044937_C001	GIM Ionospheric Correction, Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220804T045404_20220804T045410_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T045419_20220804T045425_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T045602_20220804T045913_C001	GIM Ionospheric Correction, Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction and Mean Dynamic Topography height (solution 1) for one or more records

CS_OFFL_SIR_NOPN_2_20220804T053500_20220804T053622_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T053703_20220804T054051_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220804T055044_20220804T055124_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T055638_20220804T060025_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T062642_20220804T062758_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T063319_20220804T063325_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T063650_20220804T063807_C001	GIM Ionospheric Correction, Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220804T071204_20220804T071745_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T072525_20220804T072540_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T072652_20220804T072738_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T072813_20220804T072830_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T080622_20220804T080745_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T081557_20220804T081712_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T085335_20220804T085509_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T085544_20220804T085718_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T090741_20220804T090743_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records

CS_OFFL_SIR_NOPN_2_20220804T090913_20220804T091035_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T091451_20220804T091512_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T091544_20220804T091748_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T091953_20220804T091955_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T092121_20220804T092123_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T092625_20220804T092642_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T093129_20220804T093235_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220804T093500_20220804T093503_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction 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: 2

Product	Test Failed	Description
CS_OFFL_SIR_NOPM_2_20220804T135151_20220804T135407_C001	Power scaling error	There is an error in the scaling of the L2 waveform for one or more records
CS_OFFL_SIR_NOPM_2_20220804T202712_20220804T202844_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 (20 Hz)

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

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

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

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

Number of products with errors: 78

Product	Test Failed	Description
CS_OFFL_SIR_NOPM_2_20220804T000539_20220804T003143_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_20220804T004110_20220804T004316_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_20220804T005144_20220804T010611_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_20220804T011052_20220804T011228_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_20220804T011231_20220804T012354_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_20220804T012438_20220804T012751_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_20220804T013015_20220804T013534_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_20220804T014637_20220804T015911_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_20220804T020126_20220804T021934_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_20220804T024045_20220804T025015_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_20220804T025252_20220804T030645_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_20220804T030941_20220804T031446_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_20220804T032338_20220804T032420_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_20220804T034238_20220804T034503_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_20220804T034627_20220804T035016_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_20220804T041730_20220804T041844_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_20220804T042953_20220804T044543_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_20220804T044938_20220804T045403_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_20220804T045425_20220804T045601_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_20220804T050123_20220804T052515_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_20220804T060025_20220804T062450_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_20220804T063325_20220804T063650_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_20220804T064029_20220804T070725_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_20220804T070851_20220804T071203_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_20220804T072830_20220804T073452_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_20220804T073543_20220804T073739_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_20220804T073847_20220804T074451_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_20220804T074454_20220804T080425_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_20220804T080746_20220804T081557_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_20220804T082046_20220804T085334_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_20220804T090610_20220804T090740_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_20220804T093724_20220804T094250_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_20220804T094727_20220804T095247_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_20220804T095949_20220804T102058_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_20220804T102344_20220804T103521_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_20220804T104448_20220804T104917_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_20220804T110505_20220804T110950_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_20220804T113902_20220804T114347_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_20220804T114357_20220804T121523_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_20220804T122809_20220804T125926_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_20220804T130902_20220804T131055_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_20220804T131825_20220804T132348_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_20220804T133959_20220804T134628_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_20220804T140823_20220804T141417_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_20220804T141446_20220804T142400_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_20220804T143019_20220804T144100_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_20220804T144748_20220804T145010_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_20220804T145042_20220804T145504_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_20220804T145746_20220804T150354_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_20220804T150452_20220804T151147_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_20220804T151456_20220804T152818_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_20220804T155503_20220804T155728_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_20220804T155851_20220804T160338_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_20220804T160626_20220804T162144_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_20220804T162535_20220804T163415_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_20220804T163732_20220804T165907_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_20220804T173821_20220804T180112_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_20220804T180454_20220804T180640_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_20220804T180741_20220804T181212_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_20220804T181709_20220804T184247_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_20220804T185309_20220804T185406_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_20220804T191131_20220804T191208_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_20220804T191329_20220804T193926_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_20220804T194658_20220804T195250_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_20220804T195539_20220804T202134_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_20220804T203152_20220804T203320_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_20220804T204519_20220804T211845_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_20220804T212606_20220804T213122_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_20220804T213803_20220804T214025_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_20220804T220851_20220804T221251_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_20220804T222309_20220804T223409_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_20220804T232718_20220804T233429_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_20220804T004317_20220804T004429_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_20220804T142913_20220804T143019_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_NOPR_2_20220804T025016_20220804T025101_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_NOPR_2_20220804T032318_20220804T032337_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_20220804T081712_20220804T082045_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_20220804T231149_20220804T231528_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

L2 Quality Flags (20 Hz PLRM)

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

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

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

Number of products with errors: 76

Product	Test Failed	Description
CS_OFFL_SIR_NOPN_2_20220804T023658_20220804T024044_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_20220804T031627_20220804T032233_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_20220804T035339_20220804T035501_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_20220804T035809_20220804T040228_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_20220804T053500_20220804T053622_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_20220804T053703_20220804T054051_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_20220804T055638_20220804T060025_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_20220804T071204_20220804T071745_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_20220804T072652_20220804T072738_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_20220804T085335_20220804T085509_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_20220804T085544_20220804T085718_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_20220804T090913_20220804T091035_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_20220804T110135_20220804T110504_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_20220804T112545_20220804T112817_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_20220804T113148_20220804T113521_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_20220804T131055_20220804T131346_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_20220804T131530_20220804T131720_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_20220804T142913_20220804T143019_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_20220804T144158_20220804T144747_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_20220804T145011_20220804T145042_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_20220804T145505_20220804T145644_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_20220804T154105_20220804T154316_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_20220804T154857_20220804T155018_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_20220804T160339_20220804T160626_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_20220804T170056_20220804T170408_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_20220804T170502_20220804T170627_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_20220804T172143_20220804T172507_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_20220804T180641_20220804T180741_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_20220804T184452_20220804T184557_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_20220804T202942_20220804T203010_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_20220804T204224_20220804T204326_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_20220804T212253_20220804T212606_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_20220804T213123_20220804T213233_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_20220804T215345_20220804T215528_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_20220804T220724_20220804T220851_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_20220804T222301_20220804T222309_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_20220804T230035_20220804T230447_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_20220804T231023_20220804T231148_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_20220804T233430_20220804T233513_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_20220804T234812_20220804T234900_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_20220804T000200_20220804T000538_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_20220804T013945_20220804T014607_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_20220804T015932_20220804T020125_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_20220804T022344_20220804T023119_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_20220804T025016_20220804T025101_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_20220804T040927_20220804T040945_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_20220804T045913_20220804T050123_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_20220804T054051_20220804T054926_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_20220804T062450_20220804T062642_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_20220804T063808_20220804T064028_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_20220804T080426_20220804T080622_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_20220804T081712_20220804T082045_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_20220804T094251_20220804T094601_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_20220804T095556_20220804T095948_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_20220804T104918_20220804T105240_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_20220804T112154_20220804T112545_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_20220804T125927_20220804T130626_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_20220804T134628_20220804T134655_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_20220804T135408_20220804T135930_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_20220804T135930_20220804T140135_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_20220804T142400_20220804T142613_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_20220804T145644_20220804T145746_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_20220804T150354_20220804T150452_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_20220804T153510_20220804T153601_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_20220804T154700_20220804T154753_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_20220804T180112_20220804T180329_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_20220804T181433_20220804T181709_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_20220804T193927_20220804T194303_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_20220804T211846_20220804T212252_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_20220804T214026_20220804T214309_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_20220804T214310_20220804T214314_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_20220804T220038_20220804T220343_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_20220804T221252_20220804T222154_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_20220804T225808_20220804T230035_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_20220804T231149_20220804T231528_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_20220804T232530_20220804T232717_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

L2 Quality Flags (1 Hz & 1 Hz PLRM)

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

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

Number of products with errors: 209

5.7 L2 Ocean Retracking Quality Check

L2 Retracking Flags (20 Hz)

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

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

Number of products with errors: 63

L2 Retracking Flags (20 Hz PLRM)

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

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

Number of products with errors: 148

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	158	158	5	153	0
SIR_NOPR1B	118	118	0	118	0
SIR_NOPN1B	113	113	8	105	0
SIR_NOPM_2	158	158	101	57	0
SIR_NOPR_2	118	118	37	81	0
SIR_NOPN_2	113	113	40	73	0

7.1 QCC Errors

Number of QCC reports with errors: 0

7.2 QCC Warnings

Number of QCC reports with warnings 1698

Total number of occurrences of each warning

Product Type	BCSHNCDF	MVIOEPFDNCDF	MVIOEPNCDF	MVIONCDF	RBSZOPOEPFDNCDF	RBSZOPOEPFDPLRMNCDF	RBSZOPOEPNCDF
SIR_NOPM1B	153	0	0	0	0	0	0
SIR_NOPM_2	0	42	40	31	33	0	25
SIR_NOPN1B	103	0	0	0	0	0	0
SIR_NOPN_2	0	12	32	37	27	26	20
SIR_NOPR1B	116	0	0	0	0	0	0
SIR_NOPR_2	0	34	40	48	33	31	19

Product Type	RPEPOPFDLRMNCDF	RPEPOPFDPLRMSARNCDF	RPEPOPFDPLRMSINNCDF	RPEPOPFDSARNCDF	RPEPOPFDSINNCDF	RPEPOPLRMNCDF	RPEPOPSARNCDF
SIR_NOPM1B	0	0	0	0	0	0	0
SIR_NOPM_2	38	0	0	0	0	27	0
SIR_NOPN1B	0	0	0	0	0	0	0
SIR_NOPN_2	0	0	22	0	33	0	0
SIR_NOPR1B	0	0	0	0	0	0	0
SIR_NOPR_2	0	45	0	52	0	0	43

Product Type	RPEPOPSINNCDF	RSSBCONCDF	RSSHAOFDNCDF	RSSHAOFDPLRMNCDF	RSSHAONCDF	RSWHOEPFDNCDF	RSWHOEPFDPLRMNCDF
SIR_NOPM1B	0	0	0	0	0	0	0
SIR_NOPM_2	0	4	13	0	1	36	0
SIR_NOPN1B	0	0	0	0	0	0	0
SIR_NOPN_2	27	19	25	30	18	30	28
SIR_NOPR1B	0	0	0	0	0	0	0
SIR_NOPR_2	0	1	27	15	2	33	48

Product Type	RSWHOEPNCDF	SOOHHIFHD	SCSTODHRNCDF	SCSTODNCDF	-	-	-
SIR_NOPM1B	0	0	0	0			
SIR_NOPM_2	0	0	0	0			
SIR_NOPN1B	0	0	43	0			
SIR_NOPN_2	13	1	0	0			
SIR_NOPR1B	0	0	117	4			
SIR_NOPR_2	1	0	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
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
RBSZOPOEPFDPLRMNCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2PLRMNetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RBSZOPOEPNCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarNetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEPOPFDLRMNCDF	RangePeakinessExcludingPolarOPFD2LRMNetCDF	The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEPOPFDPLRMSARNCDF	RangePeakinessExcludingPolarOPFD2PLRMSARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEPOPFDPLRMSINNCDF	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
RSSHAOFDPLRMNCDF	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
RSWHOEPFDPLRMNCDF	RangeSignificantWaveHeightOceanExcludingPolarFD2PLRMNetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RSWHOEPNCDF	RangeSignificantWaveHeightOceanExcludingPolarNetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
SOOHHIFHD	SameOrOneHigher1HzIndexFor20HzData	The 1 Hz index of a 20 Hz sample should be the same or 1 higher than its previous sample

SCSTODHRNCDF	SequenceCounterStepTODHRNetCDF	The sequence counter should be modulo 4 higher with regard to the previous sequence counter
SCSTODNCDF	SequenceCounterStepTODNetCDF	The sequence counter should be one higher (modulo 16384) with regard to the previous sequence counter

7.3 Missing QCC Reports

Number of products with missing QCC reports: 0