

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

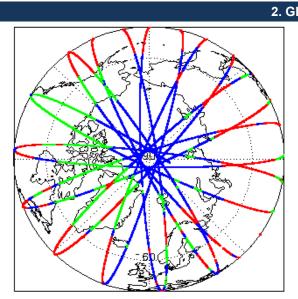
<u>28/01/2021</u>

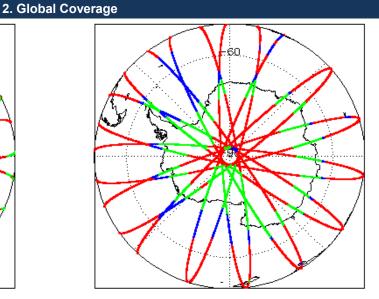
# 1. Overview

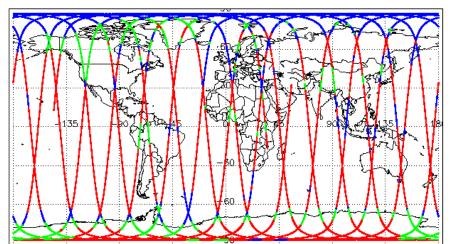
Demant Dreduction Dates	26-Feb-2021	Check	Status	
Report Production Date:	20-Feb-2021	Server check: science-pds.cryosat.esa.int	Nominal	
Processor Used:	CryoSat Ice Processor	Server check: calval-pds.cryosat.esa.int	Nominal	
Processor Useu.	Cryosat ice Processor	Product Software Check	Nominal	
Data Used:	L1B and L2 OFFLINE Data	Product Format Check	Nominal	
Data Oseu.	LIB and L2 OFFLINE Data	Product Header Analysis	Nominal	
		Star Tracker Usage Check	Nominal	
		L1B Tracking Flag Check	See Section 4.4	
		L1B Calibration Usage Check	See Section 4.5	
		L1B & L2 Auxiliary Data File Usage Check	Nominal	
		L1B & L2 Auxiliary Correction Error Check	Nominal	
		L1B & L2 Measurement Confidence Data Check	See Section 4.8 and 5.5	
		QCC Errors/ Warnings	See Section 6.1, 6.2 and 6.3	

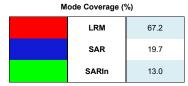
# Mission / Instrument News 27-Jan-2021 None

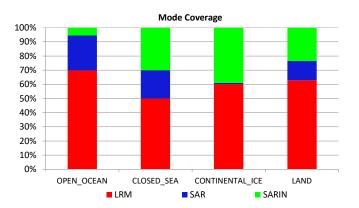
28-Jan-2021	SIRAL unavailability on the 28/01/2021 from 10:25:30 to 10:40:00 UTC
29-Jan-2021	Nothing planned
	·

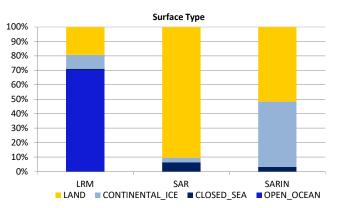












# 3. Instrument Configuration

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

SIRAL instrument(s) in use:

SIRAL - A

0

# 4. 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 product file (.DBL).

Number of products with errors:

## 4.2 L1B Product Header Analysis

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

#### 4.3 Star Tracker Usage Check

# Each product is checked in order to ensure a valid star tracker file has been used in processing. 0

Number of products with errors:

# 4.4 L1B Tracking Flags Check

CryoSat L1B data includes a tracking 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 some products over land, but this is to be expected.

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#### Number of products with errors:

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20210127T235618_20210128T000259_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T000454_20210128T000951_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T001413_20210128T001506_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T001639_20210128T001755_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T001755_20210128T001951_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T014559_20210128T014932_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T014934_20210128T015326_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T015520_20210128T015632_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T022819_20210128T024435_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T025757_20210128T030209_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T035333_20210128T035343_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T035345_20210128T035351_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T035353_20210128T035414_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T035416_20210128T035417_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T035422_20210128T035440_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T041347_20210128T042320_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T042324_20210128T043002_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T043709_20210128T043928_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T044757_20210128T050025_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T053212_20210128T053223_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T053228_20210128T053249_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T053253_20210128T053303_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T053307_20210128T053321_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T053325_20210128T053327_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T053329_20210128T053453_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T053501_20210128T053507_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T053509_20210128T053515_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T053517_20210128T053522_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T053525_20210128T053555_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T053732_20210128T053806_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T054128_20210128T055123_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T055326_20210128T060849_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T062439_20210128T063712_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T064153_20210128T065333_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T065429_20210128T065450_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T065613_20210128T065742_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T071054_20210128T071450_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T071453_20210128T071521_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T071614_20210128T071619_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T071622_20210128T071627_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T071630_20210128T071635_D001	Loss of echo	The tracking echo is missing for one or more records

CS OFFL SIR LRM 1B 20210128T071640 20210128T071707 D001 CS OFFL SIR LRM 1B 20210128T071711 20210128T071945 D001 CS OFFL SIR LRM 1B 20210128T071950 20210128T072300 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T072310\_20210128T072431\_D001 CS OFFL SIR LRM 1B 20210128T075541 20210128T075656 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T080115\_20210128T082422\_D001 CS OFFL SIR LRM 1B 20210128T082424 20210128T082826 D001 CS OFFL SIR LRM 1B 20210128T083044 20210128T083611 D001 CS OFFL SIR LRM 1B 20210128T083734 20210128T083826 D001 CS OFFL SIR LRM 1B 20210128T085002 20210128T085642 D001 CS OFFL SIR LRM 1B 20210128T085645 20210128T085709 D001 CS OFFL SIR LRM 1B 20210128T085848 20210128T085946 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T090202\_20210128T092227\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T104001\_20210128T110656\_D001 CS OFFL SIR LRM 1B 20210128T111340 20210128T111709 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T120802\_20210128T120933\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T121433\_20210128T121521\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T121707\_20210128T121813\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T122041\_20210128T122915\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T123001\_20210128T123736\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T124838\_20210128T125404\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T135318\_20210128T135337\_D001 CS OFFL SIR LRM 1B 20210128T135400 20210128T135437 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T135729\_20210128T140317\_D001 CS OFFL SIR LRM 1B 20210128T142802 20210128T143303 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T143907\_20210128T151204\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T151448\_20210128T151521\_D001 CS OFFL SIR LRM 1B 20210128T151525 20210128T151537 D001 CS OFFL SIR LRM 1B 20210128T151541 20210128T151542 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T151546\_20210128T151605\_D001 CS OFFL SIR LRM 1B 20210128T161015 20210128T161208 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T161851\_20210128T163425\_D001 CS OFFL SIR LRM 1B 20210128T163427 20210128T163443 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T163446\_20210128T163631\_D001 CS OFFL SIR LRM 1B 20210128T164113 20210128T164939 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T164942\_20210128T164950\_D001 CS OFFL SIR LRM 1B 20210128T165247 20210128T165249 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T165251\_20210128T165257\_D001 CS\_OFEL\_SIR\_LRM\_1B\_20210128T165304\_20210128T165313\_D001 CS OFFL SIR LRM 1B 20210128T165316 20210128T165323 D001 CS OFFL SIR LRM 1B 20210128T165326 20210128T165353 D001 CS OFFL SIR LRM 1B 20210128T165401 20210128T165404 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T165408\_20210128T165409\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T165413\_20210128T165422\_D001 CS OFFL SIR LRM 1B 20210128T165425 20210128T165430 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T165436\_20210128T165443\_D001 CS OFFL SIR LRM 1B 20210128T165448 20210128T165515 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T165517\_20210128T165537\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T172728\_20210128T174203\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T174911\_20210128T175121\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T175807\_20210128T181034\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T181048\_20210128T181336\_D001 CS OFFL SIR LRM 1B 20210128T181537 20210128T182459 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T182638\_20210128T182656\_D001 CS OFFL SIR LRM 1B 20210128T182658 20210128T183017 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T183019\_20210128T183023\_D001 CS OFFL SIR LRM 1B 20210128T183025 20210128T183125 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T183127\_20210128T183128\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T183130\_20210128T183526\_D001 CS OFFL SIR LRM 1B 20210128T184930 20210128T185120 D001 CS OFFL SIR LRM 1B 20210128T185217 20210128T185248 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T185317\_20210128T190252\_D001 CS OFFL SIR LRM 1B 20210128T190257 20210128T190429 D001 CS\_OFFL\_SIR\_LRM\_1B\_20210128T200124\_20210128T200210\_D001

Loss of echo l oss of echo Loss of echo l oss of echo Loss of echo l oss of echo Loss of echo l oss of echo Loss of echo

The tracking echo is missing for one or more records The tracking echo is missing for one or more records

CS_OFFL_SIR_LRM_1B_20210128T200558_20210128T200636_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T200727_20210128T200823_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T200828_20210128T200932_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T200935_20210128T201423_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T202929_20210128T203512_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T203627_20210128T203947_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T203950_20210128T210334_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T211641_20210128T214212_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T214414_20210128T215102_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T215102_20210128T215200_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T215203_20210128T215234_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T221405_20210128T224124_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T225543_20210128T232430_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T232433_20210128T232439_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T232534_20210128T232751_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T232829_20210128T233036_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20210128T233206_20210128T233403_D001	Loss of echo	The tracking echo is missing for one or more records

#### 4.5 L1B Calibration Usage Check

Each product is checked in order to ensure that the necessary calibration files have been used in processing. Number of products with errors: 2

# Product Test Failed

CS_OFEL_SIR_SIN_1B_20210128T061620_20210128T061627_D001 Cal1 corr. missing The Cal1 correction has not been applied	CS_OFFL_SIR_SIN_1B_20210128T024435_20210128T024445_D001	Cal1 corr. missing	The Cal1 correction has not been applied
	CS_OFFL_SIR_SIN_1B_20210128T061620_20210128T061627_D001	Cal1 corr. missing	The Cal1 correction has not been applied

Description

# 4.6 L1B Auxilary Data File Usage Check

Each product is checked for missing Data Set Descriptors with respect to a pre-determined baseline and also to check the validity of Auxiliary Data Files is correct.
Number of products with errors:
0

#### 4.7 L1B Auxiliary Correction Error Check

CryoSat L1B data includes a correction error flag (field 54) for each measurement record. The bit value of this flag indicates any problems when set.
Number of products with errors:
0

# 4.8 L1B Measurement Confidence Data Check

CryoSat L1B data includes a measurement confidence flag (field 18) for each measurement record. The bit value of this flag indicates any problems when set.

Currently, there are several common error flags raised in the Level 1B products which are expected due to operational mode or surface type. All common flags are summarised in the list below, followed by a table of any additional issues arising from this test.

Block Degraded Flag: This flag is currently set for a number of individual records generally at the start or end of products (all modes), but this is to be expected.

Phase Perturbation Flag: This flag is currently set for all L1B SARIn products, indicating that the ADC correction application is deactivated, but this is in line with the current configuration.

Number of products with errors: 2		
Product	Test Failed	Description
CS_OFFL_SIR_SIN_1B_20210128T024435_20210128T024445_D001	Echo error, Cal1 Correction Missing	The Rx1 Echo Error flag is set, indicating a degraded raw echo and Cal1 Correction has not been applied
CS_OFFL_SIR_SIN_1B_20210128T061620_20210128T061627_D001	Cal1 Correction missing,	The Cal1 Correction has not been applied

# 5. 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 product file (.DBL).

## 5.2 L2 Product Header Analysis

For all products, a series of pre-defined checks are carried out 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.

# Number of products with errors:

# 5.4 L2 Auxiliary Correction Error Check

CryoSat L2 data includes a correction error flag (field 30) for each measurement record. The bit value of this flag indicates any problems when set.

# Number of products with errors:

#### 5.5 L2 Measurement Quality Flag Check

CryoSat L2 data includes a quality flag (field 50) for each 20-Hz measurement record. The bit value of this flag indicates any problems when set.

Currently, there are several common error flags raised in the Level 2 products which are expected due to operational mode or surface type. All common flags are summarised in the list below, followed by a table of any additional issues arising from this test.

Freeboard error: This flag is correctly set in all L2 SAR products that are not discriminated as sea-ice, and for which freeboard cannot be calculated.

Height and Backscatter errors: These flags are currently set for products over land, but this is to be expected. Retracker 1 Height and Backscatter error flags are also set for products over sea-ice, but this is to be expected.

Peakiness error: This flag is currently set for products over sea-ice, but this is to be expected.

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SARIN X-Track Angle Error: This flag is set when the difference between the computed surface elevation and the DEM is >50 m. The DEM is only available over Greenland and Antarctica and as a result this flag is set for L2 SARIn products in all other locations as expected.

SSHA interpolation error: This flag is currently set for a number of SAR products occurring at surface type boundaries, but this is to be expected.

Number of products with errors:

Number of products with errors: 57		
Product	Test Failed	Description
CS_OFFL_SIR_LRM_220210128T001413_20210128T001506_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T003726_20210128T011156_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T012826_20210128T014412_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_220210128T014934_20210128T015326_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T021643_20210128T022600_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T022819_20210128T024435_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_220210128T024445_20210128T025032_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_220210128T030411_20210128T032622_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T032658_20210128T033136_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T035837_20210128T041212_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T041347_20210128T042320_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_220210128T042324_20210128T043002_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T044757_20210128T050025_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T050131_20210128T051825_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T054128_20210128T055123_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_220210128T055326_20210128T060849_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_220210128T062439_20210128T063712_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T064153_20210128T065333_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_220210128T065613_20210128T065742_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220210128T073247_20210128T074752_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T080115_20210128T082422_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T082424_20210128T082826_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T090202_20210128T092227_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T094031_20210128T100807_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records

CS_OFFL_SIR_LRM_220210128T104001_20210128T110656_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T112111_20210128T115514_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_220210128T120802_20210128T120933_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T121707_20210128T121813_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T123001_20210128T123736_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T124347_20210128T124637_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T125958_20210128T132220_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T140609_20210128T142555_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T143907_20210128T151204_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T153748_20210128T160041_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T161851_20210128T163425_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_220210128T163446_20210128T163631_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T164113_20210128T164939_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T170849_20210128T172514_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T172728_20210128T174203_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T175807_20210128T181034_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T181048_20210128T181336_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T181537_20210128T182459_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_220210128T183635_20210128T183638_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220210128T184930_20210128T185120_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220210128T185317_20210128T190252_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_220210128T190938_20210128T192411_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T193742_20210128T195430_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T195656_20210128T195908_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T200828_20210128T200932_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220210128T203627_20210128T203947_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T203950_20210128T210334_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_220210128T211641_20210128T214212_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records

CS_OFFL_SIR_LRM_220210128T221405_20210128T224124_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_220210128T225543_20210128T232430_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_220210128T233206_20210128T233403_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_SIN_220210128T024435_20210128T024445_D001	Calibration Warning	The Calibration correction is missing or has been taken from the IPFDB instead of the Calibration products for one or more records
CS_OFFL_SIR_SIN_220210128T061620_20210128T061627_D001		The Calibration correction is missing or has been taken from the IPFDB instead of the Calibration products for one or more records

# 6. 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_LRM_1B	185	185	185	0	0
SIR_SAR_1B	147	147	147	0	0
SIR_SIN_1B	95	95	95	0	0
SIR_LRM_2	185	185	184	1	0
SIR_SAR_2	95	144	144	0	0
SIR_SIN_2	144	95	95	0	0
SIR_GDR_2	15	15	0	0	15

# 6.1 QCC Errors

Number of products with QCC errors:

Product Type	MPHDUTNCDF	MPHXPFNCDF	MPHXVFNCDF	MPHYPFNCDF	MPHYVFNCDF	MPHZPFNCDF	MPHZVFNCDF	STRUCTURESIZ EANDREAD	•	-	-
SIR_GDR_2_	15	15	15	15	15	15	15	15			
0											

15

1

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Test Description Key:	Test Description Key:						
Abbreviation	Test name	Details					
MPHDUTNCDF	MPH_Delta_UT1_NetCDF	Delta_UT1 mismatch					
MPHXPFNCDF	MPH_X_Position_Float_v2_NetCDF	X_Position mismatch (DBL float (GDR), rounded to 100)					
MPHXVFNCDF	MPH_X_Velocity_Float_v2_NetCDF	X_Velocity mismatch (DBL float (GDR), rounded to 1)					
MPHYPFNCDF	MPH_Y_Position_Float_v2_NetCDF	Y_Position mismatch (DBL float (GDR), rounded to 100)					
MPHYVFNCDF	MPH_Y_Velocity_Float_v2_NetCDF	Y_Velocity mismatch (DBL float (GDR), rounded to 1)					
MPHZPFNCDF	MPH_Z_Position_Float_v2_NetCDF	Z_Position mismatch (DBL float (GDR), rounded to 100)					
MPHZVFNCDF	MPH_Z_Velocity_Float_v2_NetCDF	Z_Velocity mismatch (DBL float (GDR), rounded to 1)					
STRUCTURESIZEAND	STRUCTURE_SIZE_AND_READ	Under investigation.					

# 6.2 QCC Warnings

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Number of QCC reports with warnings

Total number of occurrences of each warning

Product Type	AXSMMEOCI	-	-	-	-	-	-
SIR_LRM_2_	1						
			·		·		
Test Description Key:							
Abbreviation	Test name			Details			
AXSMMEOCI	AttributeXrefSlopeModelMustExistOverContinentalIce			The xref_slope_model is mandatory in LRM products over continental ice			

# 6.2 Missing QCC Reports

Number of products with missing QCC reports:

## Product name

CS\_OFFL\_SIR\_GDR\_2\_20210128T000356\_20210128T014310\_D002