

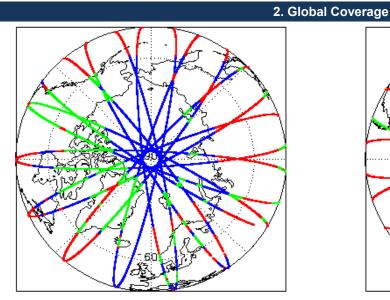
# **QA4EO Daily Report for OFFLINE data:**

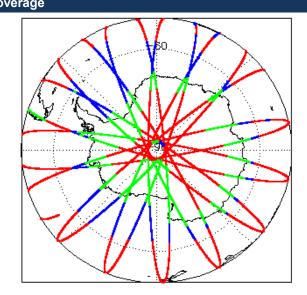
26/12/2020

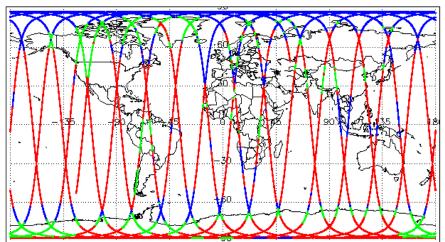
# 1. Overview

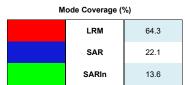
Demant Draduation Data	26-Jan-2021	Check	Status
Report Production Date:	20-Jan-2021	Server check: science-pds.cryosat.esa.int	Nominal
Processor Used:	Crive Cet Les Dressesser	Server check: calval-pds.cryosat.esa.int	Nominal
	CryoSat Ice Processor	Product Software Check	Nominal
Data Used:	L1B and L2 OFFLINE Data	Product Format Check	Nominal
	LID and LZ OFFLINE Data	Product Header Analysis	Nominal
		Star Tracker Usage Check	Nominal
		L1B Tracking Flag Check	See Section 4.4
		L1B Calibration Usage Check	Nominal
		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

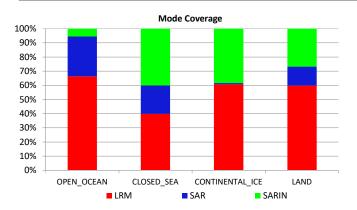
Mi	Mission / Instrument News							
2	25-Dec-2020	None						
2	26-Dec-2020	None						
2	27-Dec-2020	Nothing planned						

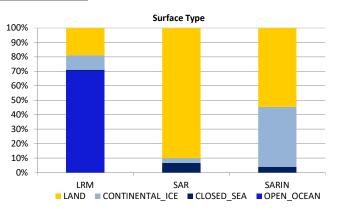












### 3. Instrument Configuration

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

SIRAL - A

SIRAL instrument(s) in use:

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_20201225T235611_20201226T000144_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T000144_20201226T000358_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T002220_20201226T002457_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T010817_20201226T012248_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T012251_20201226T012812_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T012817_20201226T013103_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T013109_20201226T013338_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T013516_20201226T013629_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T013807_20201226T013906_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T014334_20201226T014419_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T025935_20201226T030105_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T030107_20201226T030246_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T030308_20201226T031002_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T031146_20201226T031430_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T031721_20201226T031806_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T034950_20201226T041124_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T044008_20201226T044725_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T051431_20201226T051432_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T051435_20201226T051459_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T051501_20201226T051528_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T051733_20201226T055041_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T055819_20201226T060055_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T060900_20201226T062129_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T065313_20201226T065333_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T065336_20201226T065342_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T065344_20201226T065358_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T065403_20201226T065409_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T065411_20201226T065418_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T065421_20201226T065442_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T065444_20201226T065502_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T065508_20201226T065537_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T065539_20201226T065540_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T0655544_20201226T065551_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T065555_20201226T065606_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T065853_20201226T065912_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T065916_20201226T065931_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T070039_20201226T071224_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T071428_20201226T072941_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T074609_20201226T075426_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T075744_20201226T075954_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T080256_20201226T081500_D001	Loss of echo	The tracking echo is missing for one or more records

CS OFFL SIR LRM 1B 20201226T083154 20201226T083333 D001 CS OFFL SIR LRM 1B 20201226T083337 20201226T083337 D001 CS OFFL SIR LRM 1B 20201226T083340 20201226T083521 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T083528\_20201226T083529\_D001 CS OFFL SIR LRM 1B 20201226T083535 20201226T083540 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T083551\_20201226T083728\_D001 CS OFFL SIR LRM 1B 20201226T083732 20201226T083740 D001 CS OFFL SIR LRM 1B 20201226T083742 20201226T083815 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T083817 20201226T084538 D001 CS OFFL SIR LRM 1B 20201226T091651 20201226T091800 D001 CS OFFL SIR LRM 1B 20201226T092302 20201226T095643 D001 CS OFFL SIR LRM 1B 20201226T101036 20201226T101625 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T101628\_20201226T101703\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T101705\_20201226T101803\_D001 CS OFFL SIR LRM 1B 20201226T101939 20201226T102034 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T102406\_20201226T102409\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T102416\_20201226T104526\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T110213\_20201226T112959\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T113002\_20201226T113050\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T113055\_20201226T113058\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T115250\_20201226T115716\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T115822\_20201226T122706\_D001 CS OFFL SIR LRM 1B 20201226T123450 20201226T123817 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T132847\_20201226T133048\_D001 CS OFFL SIR LRM 1B 20201226T133215 20201226T133501 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T133812\_20201226T133916\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T134049\_20201226T134130\_D001 CS OFFL SIR LRM 1B 20201226T134134 20201226T134740 D001 CS OFFL SIR LRM 1B 20201226T134820 20201226T134836 D001 CS OFFL SIR LRM 1B 20201226T135211 20201226T135341 D001 CS OFFL SIR LRM 1B 20201226T135345 20201226T135821 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T140942\_20201226T141514\_D001 CS OFFL SIR LRM 1B 20201226T151046 20201226T151059 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T151439\_20201226T151508\_D001 CS OFFL SIR LRM 1B 20201226T151518 20201226T151530 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T151847\_20201226T151907\_D001 CS OFFL SIR LRM 1B 20201226T151925 20201226T152122 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T152305\_20201226T152557\_D001 CS\_OFEL\_SIR\_LRM\_1B\_20201226T154903\_20201226T155411\_D001 CS OFFL SIR LRM 1B 20201226T160031 20201226T163420 D001 CS OFFL SIR LRM 1B 20201226T163603 20201226T163627 D001 CS OFFL SIR LRM 1B 20201226T163631 20201226T163633 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T163635\_20201226T163654\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T163657\_20201226T163703\_D001 CS OFFL SIR LRM 1B 20201226T165850 20201226T170318 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T173118\_20201226T173316\_D001 CS OFFL SIR LRM 1B 20201226T174028 20201226T175453 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T180215\_20201226T181052\_D001 CS OFFL SIR LRM 1B 20201226T181416 20201226T181433 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T181435\_20201226T181436\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T181440\_20201226T181500\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T181503\_20201226T181507\_D001 CS OFFL SIR LRM 1B 20201226T181509 20201226T181511 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T181515\_20201226T181532\_D001 CS OFFL SIR LRM 1B 20201226T181536 20201226T181551 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T181555\_20201226T181600\_D001 CS OFFL SIR LRM 1B 20201226T181604 20201226T181648 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T184834\_20201226T190237\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T191025\_20201226T191227\_D001 CS OFFL SIR LRM 1B 20201226T191924 20201226T193444 D001 CS OFFL SIR LRM 1B 20201226T193645 20201226T194608 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T194849\_20201226T194902\_D001 CS OFFL SIR LRM 1B 20201226T194905 20201226T195101 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201226T195107\_20201226T195139\_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

	Level of the	
CS_OFFL_SIR_LRM_1B_20201226T195142_20201226T195147_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T195149_20201226T195159_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T195202_20201226T195204_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T195206_20201226T195233_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T195235_20201226T195255_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T195257_20201226T195636_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T201309_20201226T202514_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T203209_20201226T203414_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T203417_20201226T203453_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T203456_20201226T203545_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T204830_20201226T205631_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T212207_20201226T212339_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T212715_20201226T212747_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T212749_20201226T212756_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T212800_20201226T212804_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T212816_20201226T212825_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T212830_20201226T212837_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T212840_20201226T212847_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T212852_20201226T212933_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T212936_20201226T212937_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T212939_20201226T212957_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T213000_20201226T213007_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T213010_20201226T213012_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T213017_20201226T213018_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T213022_20201226T213032_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T213034_20201226T213101_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T213104_20201226T213114_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T213116_20201226T213606_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T215111_20201226T222403_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T222945_20201226T223517_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T223833_20201226T230302_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T230706_20201226T231215_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T231335_20201226T231338_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T233437_20201226T233438_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T233440_20201226T233443_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T233449_20201226T233451_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T233453_20201226T233459_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201226T233501_20201227T000202_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: 0

0

### 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:

### 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: 0

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). Number of products with errors: 0

#### 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:

### 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.

0

60

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.

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:

Product	Test Failed	Description
CS_OFFL_SIR_LRM_220201226T002220_20201226T002457_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_220201226T002622_20201226T005218_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_220201226T010817_20201226T012248_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_220201226T013109_20201226T013338_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_220201226T015814_20201226T023211_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_220201226T031146_20201226T031430_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_220201226T033744_20201226T034703_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2), Surface model unavailable	There is a height and backscatter error for Retracker 2 and no DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201226T034950_20201226T041124_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_220201226T042802_20201226T043821_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_220201226T044008_20201226T044725_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_220201226T044815_20201226T045242_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_220201226T050042_20201226T050104_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_220201226T051733_20201226T055041_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_220201226T060900_20201226T062129_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_220201226T062145_20201226T063914_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_220201226T065344_20201226T065358_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201226T065403_20201226T065409_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201226T065421_20201226T065442_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records

CS_0FFL_SIR_LRM_2_20201226T070039_20201226T071224_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error	There is a height and backscatter error for Retracker 2 and a height error
CS_0FFL_SIR_LRM_2_20201226T071428_20201226T072941_D001	(Retracker 2) Height Error (Retracker 2), Backscatter	for Retracker 3 for one or more records There is a height and backscatter error for Retracker 2 for one or more
63_0112_511_L1001	Error (Retracker 2)	records
CS_OFFL_SIR_LRM_220201226T074609_20201226T075426_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_220201226T080256_20201226T081500_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_220201226T081651_20201226T081738_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201226T085407_20201226T090847_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_220201226T092302_20201226T095643_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_220201226T101705_20201226T101803_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_0FFL_SIR_LRM_220201226T102416_20201226T104526_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_0FFL_SIR_LRM_2_20201226T110213_20201226T112959_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_220201226T115822_20201226T122706_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_0FFL_SIR_LRM_2_20201226T124251_20201226T131609_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_220201226T132847_20201226T133048_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_220201226T134134_20201226T134740_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_220201226T140132_20201226T140512_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_220201226T142156_20201226T145501_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_220201226T152744_20201226T154414_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_220201226T160031_20201226T163420_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_220201226T165850_20201226T170318_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_220201226T170407_20201226T172146_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_220201226T174028_20201226T175453_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_220201226T175614_20201226T175735_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_220201226T180215_20201226T181052_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_220201226T181416_20201226T181433_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201226T181440_20201226T181500_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201226T181515_20201226T181532_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201226T181536_20201226T181551_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201226T181555_20201226T181600_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records

CS_OFFL_SIR_LRM_220201226T182919_20201226T184702_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_220201226T184834_20201226T190237_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_220201226T191924_20201226T193444_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_220201226T193645_20201226T194608_D001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2), Surface model unavailable	There is a height and backscatter error for Retracker 2, a height error for Retracker 3 and no DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201226T194849_20201226T194902_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201226T201159_20201226T201244_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_220201226T201309_20201226T202514_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_220201226T203209_20201226T203414_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_220201226T203417_20201226T203453_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_220201226T203456_20201226T203545_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_220201226T205911_20201226T211352_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_220201226T215111_20201226T222403_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_220201226T223833_20201226T230302_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_220201226T233501_20201227T000202_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

# 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	201	201	201	0	0
SIR_SAR_1B	132	132	132	0	0
SIR_SIN_1B	108	108	108	0	0
SIR_LRM_2	201	201	196	5	0
SIR_SAR_2	108	131	131	0	0
SIR_SIN_2	131	108	104	4	0
SIR_GDR_2	14	14	0	0	14

# 6.1 QCC Errors

Number of products with QCC errors:

Product Type	MPHDUTNCDF	MPHXPFNCDF	MPHXVFNCDF	MPHYPFNCDF	MPHYVFNCDF	MPHZPFNCDF	MPHZVFNCDF	STRUCTURESIZ EANDREAD	-	-	-
SIR_GDR_2_	14	14	14	14	14	14	14	14			

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Test Description Key:	est 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

Number of QCC reports with warnings 9									
Total number of occurrences of each warning									
Product Type	AXDME	AXSMMEOCI	-	· · · · ·					
SIR_LRM_2_	0	5							
SIR_SIN_2_	4	0							
Test Description Key:									
Abbreviation	Test name			Details					
AXDME	AttributeXrefDemMustExist The xref_dem attribute is mandatory in SIN products over continental ice								
AXSMMEOCI	AttributeXrefSlopeModelMu	stExistOverContinentalIce		The xref_slope_model is mandatory in LRM products over continental ice					

## 6.2 Missing QCC Reports

Number of products with missing QCC reports:

0