

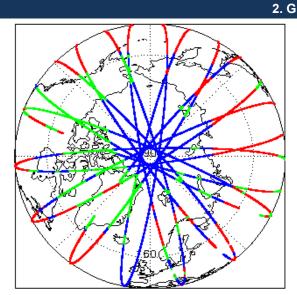
QA4EO Daily Report for OFFLINE data:

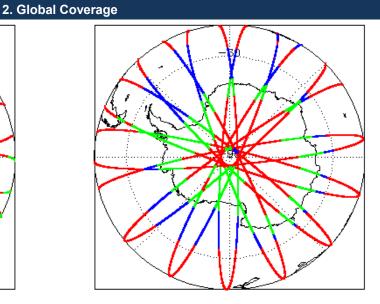
<u>18/12/2020</u>

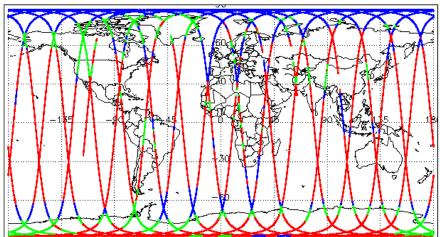
1. Overview

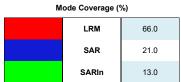
Demant Dreduction Dates	15-Jan-2021	Check	Status
Report Production Date:	15-Jan-2021	Server check: science-pds.cryosat.esa.int	Nominal
Processor Used:	CryoSat Ice Processor	Server check: calval-pds.cryosat.esa.int	Nominal
	CryoSat ice Processor	Product Software Check	Nominal
Data Used:	L1B and L2 OFFLINE 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

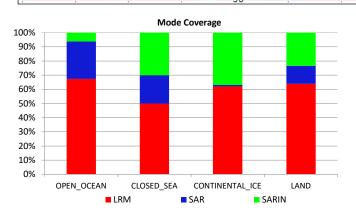
N	lission / Instru	ment News
	17-Dec-2020	None
	18-Dec-2020	None
	19-Dec-2020	Nothing planned
,		

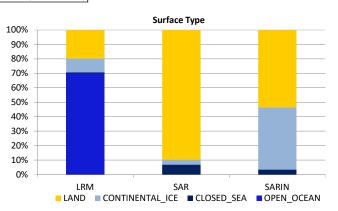












3. Instrument Configuration

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.

143

Number of products with errors:

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20201217T234036_20201218T000207_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T000315_20201218T000519_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T000626_20201218T000950_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T000950_20201218T000951_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T000953_20201218T001146_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T011551_20201218T013517_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T013520_20201218T014353_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T014655_20201218T014709_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T014743_20201218T014924_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T015117_20201218T015208_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T030234_20201218T030632_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T030738_20201218T031101_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T031154_20201218T031253_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T031257_20201218T031305_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T031307_20201218T031413_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T031926_20201218T032050_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T032530_20201218T032554_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T032554_20201218T032627_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T044746_20201218T045355_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T045458_20201218T045513_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T045539_20201218T050020_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T052219_20201218T052249_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T052252_20201218T052306_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T070051_20201218T070130_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T070133_20201218T070134_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T070137_20201218T070139_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T070143_20201218T070158_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T070201_20201218T070205_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T070207_20201218T070218_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T070222_20201218T070230_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T070232_20201218T070253_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T070255_20201218T070257_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T070259_20201218T070316_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T070632_20201218T072138_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T072202_20201218T073728_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T075415_20201218T080416_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T080522_20201218T080809_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T081035_20201218T082257_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T082345_20201218T082410_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T083933_20201218T084258_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T084300_20201218T084351_D001	Loss of echo	The tracking echo is missing for one or more records

CS_OFFL_SIR_LRM_1B_20201218T084356_20201218T084401_D001 CS OFFL SIR LRM 1B 20201218T084404 20201218T084413 D001 CS OFFL SIR LRM 1B 20201218T084415 20201218T084425 D001 CS_OFFL_SIR_LRM_1B_20201218T084432_20201218T084439_D001 CS OFFL SIR LRM 1B 20201218T084444 20201218T084444 D001 CS_OFFL_SIR_LRM_1B_20201218T084447_20201218T084502_D001 CS OFFL SIR LRM 1B 20201218T084504 20201218T084645 D001 CS OFFL SIR LRM 1B 20201218T084647 20201218T090025 D001 CS OFFL SIR LRM 1B 20201218T093126 20201218T095413 D001 CS OFFL SIR LRM 1B 20201218T095535 20201218T100346 D001 CS OFFL SIR LRM 1B 20201218T100657 20201218T100713 D001 CS_OFFL_SIR_LRM_1B_20201218T101806_20201218T102157_D001 CS_OFFL_SIR_LRM_1B_20201218T102159_20201218T102308_D001 CS_OFFL_SIR_LRM_1B_20201218T102312_20201218T102404_D001 CS OFFL SIR LRM 1B 20201218T102408 20201218T102413 D001 CS_OFFL_SIR_LRM_1B_20201218T102415_20201218T102431_D001 CS_OFFL_SIR_LRM_1B_20201218T102434_20201218T102445_D001 CS_OFFL_SIR_LRM_1B_20201218T102447_20201218T102450_D001 CS_OFFL_SIR_LRM_1B_20201218T102452_20201218T102505_D001 CS_OFFL_SIR_LRM_1B_20201218T102507_20201218T102535_D001 CS_OFFL_SIR_LRM_1B_20201218T102537_20201218T102608_D001 CS_OFFL_SIR_LRM_1B_20201218T102704_20201218T102741_D001 CS OFFL SIR LRM 1B 20201218T105933 20201218T110309 D001 CS_OFFL_SIR_LRM_1B_20201218T110953_20201218T113548_D001 CS OFFL SIR LRM 1B 20201218T113550 20201218T113624 D001 CS_OFFL_SIR_LRM_1B_20201218T113628_20201218T113635_D001 CS_OFFL_SIR_LRM_1B_20201218T113637_20201218T113646_D001 CS OFFL SIR LRM 1B 20201218T113648 20201218T113653 D001 CS OFFL SIR LRM 1B 20201218T113655 20201218T113813 D001 CS_OFFL_SIR_LRM_1B_20201218T115935_20201218T120049_D001 CS OFFL SIR LRM 1B 20201218T120102 20201218T120758 D001 CS_OFFL_SIR_LRM_1B_20201218T120915_20201218T123447_D001 CS OFFL SIR LRM 1B 20201218T124231 20201218T124558 D001 CS_OFFL_SIR_LRM_1B_20201218T133932_20201218T134238_D001 CS OFFL SIR LRM 1B 20201218T134312 20201218T134458 D001 CS_OFFL_SIR_LRM_1B_20201218T134554_20201218T135333_D001 CS OFFL SIR LRM 1B 20201218T135352 20201218T135803 D001 CS_OFFL_SIR_LRM_1B_20201218T135809_20201218T140409_D001 CS_OFEL_SIR_LRM_1B_20201218T142932_20201218T150216_D001 CS OFFL SIR LRM 1B 20201218T151747 20201218T151757 D001 CS OFFL SIR LRM 1B 20201218T152147 20201218T152257 D001 CS OFFL SIR LRM 1B 20201218T152308 20201218T152410 D001 CS_OFFL_SIR_LRM_1B_20201218T153039_20201218T153508_D001 CS_OFFL_SIR_LRM_1B_20201218T153529_20201218T155154_D001 CS OFFL SIR LRM 1B 20201218T164343 20201218T164406 D001 CS_OFFL_SIR_LRM_1B_20201218T164409_20201218T164429_D001 CS_OFFL_SIR_LRM_1B_20201218T170627_20201218T171103_D001 CS_OFFL_SIR_LRM_1B_20201218T171144_20201218T172919_D001 CS_OFFL_SIR_LRM_1B_20201218T182211_20201218T182240_D001 CS_OFFL_SIR_LRM_1B_20201218T182242_20201218T182325_D001 CS_OFFL_SIR_LRM_1B_20201218T182329_20201218T182333_D001 CS_OFFL_SIR_LRM_1B_20201218T182336_20201218T182426_D001 CS OFFL SIR LRM 1B 20201218T185611 20201218T190935 D001 CS_OFFL_SIR_LRM_1B_20201218T191807_20201218T192005 D001 CS OFFL SIR LRM 1B 20201218T192708 20201218T194226 D001 CS_OFFL_SIR_LRM_1B_20201218T194428_20201218T195350_D001 CS OFFL SIR LRM 1B 20201218T195708 20201218T195806 D001 CS_OFFL_SIR_LRM_1B_20201218T195809_20201218T195819_D001 CS_OFFL_SIR_LRM_1B_20201218T195822_20201218T195848_D001 CS OFFL SIR LRM 1B 20201218T195852 20201218T195909 D001 CS_OFFL_SIR_LRM_1B_20201218T195912_20201218T195920_D001 CS_OFFL_SIR_LRM_1B_20201218T195924_20201218T195939_D001 CS OFFL SIR LRM 1B 20201218T195941 20201218T200001 D001 CS_OFFL_SIR_LRM_1B_20201218T200003_20201218T200004_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

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CS_OFFL_SIR_LRM_1B_20201218T200007_20201218T200037_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T200039_20201218T200044_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T200051_20201218T200413_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T201940_20201218T203312_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T203840_20201218T204031_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T204034_20201218T204119_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T204123_20201218T204230_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T204235_20201218T204553_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T204556_20201218T204820_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T205626_20201218T210410_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T212946_20201218T213048_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T213408_20201218T213412_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T213414_20201218T213417_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T213422_20201218T213600_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T213602_20201218T213634_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T213636_20201218T213639_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T213642_20201218T213705_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T213708_20201218T213724_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T213726_20201218T213738_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T213740_20201218T213939_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T213941_20201218T214001_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T214003_20201218T214008_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T214011_20201218T214016_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T214018_20201218T214357_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T215930_20201218T223140_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T223444_20201218T223659_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T223706_20201218T224305_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T224625_20201218T231128_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T231452_20201218T231927_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T233431_20201218T233513_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T233635_20201218T233959_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T234002_20201218T234017_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T234234_20201218T234314_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T234317_20201218T234318_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T234320_20201218T234322_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T234328_20201218T234330_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T234333_20201218T234409_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201218T234414_20201219T000955_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: 0

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.

49

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_220201217T234036_20201218T000207_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_220201218T003435_20201218T005955_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_220201218T011551_20201218T013517_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_220201218T013520_20201218T014353_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_220201218T015117_20201218T015208_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_220201218T020605_20201218T023944_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_220201218T032934_20201218T033208_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_220201218T034538_20201218T035440_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_220201218T035726_20201218T041914_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_220201218T043544_20201218T044559_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_220201218T044746_20201218T045355_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_220201218T045539_20201218T050020_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_220201218T052448_20201218T055807_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_220201218T061640_20201218T064722_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_220201218T070632_20201218T072138_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_220201218T072202_20201218T073728_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_220201218T075415_20201218T080416_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_220201218T081035_20201218T082257_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_220201218T084647_20201218T090025_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_220201218T090205_20201218T091617_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_220201218T093126_20201218T095413_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_220201218T095535_20201218T100346_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_220201218T103314_20201218T105535_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_220201218T110953_20201218T113548_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_220201218T120915_20201218T123447_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_220201218T125015_20201218T132313_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_220201218T134554_20201218T135333_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_220201218T135809_20201218T140409_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_220201218T142932_20201218T150216_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_220201218T151549_20201218T151648_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_220201218T152308_20201218T152410_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_220201218T153529_20201218T155154_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_220201218T160815_20201218T164216_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_220201218T164409_20201218T164429_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201218T170627_20201218T171103_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_220201218T171144_20201218T172919_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_220201218T174803_20201218T182030_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_220201218T183650_20201218T185521_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_220201218T185611_20201218T190935_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_220201218T192708_20201218T194226_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_220201218T194428_20201218T195350_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_220201218T201553_20201218T201845_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_220201218T201940_20201218T203312_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_220201218T201940_20201218T203312_D001 CS_OFFL_SIR_LRM_220201218T204034_20201218T204119_D001	(Retracker 3), Backscatter Error	
	(Retracker 3), Backscatter Error (Retracker 2)	for Retracker 3 for one or more records

CS_OFFL_SIR_LRM_220201218T213422_20201218T213600_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201218T215930_20201218T223140_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_220201218T224625_20201218T231128_D001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 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	122	122	122	0	0
SIR_SIN_1B	114	114	114	0	0
SIR_LRM_2	193	193	189	4	0
SIR_SAR_2	112	121	121	0	0
SIR_SIN_2	121	112	108	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			

14

2

Test Description Key:	st 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 report	ts with warnings	9							
Total number of occurrences of each warning									
Product Type	AXDME	AXSMMEOCI	AXSMEOOO	AXWMMEOOO	-	-	-		
SIR_LRM_2_	0	3	1	1					
SIR_SIN_2_	4	0	0	0					
				·	•	'			
Test Description Key:									
Abbreviation	Test name			Details					
AXDME	AttributeXrefDemMustExis	it		The xref_dem attribute	The xref_dem attribute is mandatory in SIN products over continental ice				
AXSMMEOCI	AttributeXrefSlopeModelM	ustExistOverContinentalIc	9	The xref_slope_model	The xref_slope_model is mandatory in LRM products over continental ice				
AXSMEOOO	The xref_ssb is manda	tory in LRM produc	ts over open ocean						
AXWMMEOOO	AttributeXrefWindModelMu	ustExistOverOpenOcean		The xref_wind_model a	attribute is mandato	ry in LRM products over oper	nocean		

6.2 Missing QCC Reports

Number of products with missing QCC reports:

Product name CS_OFFL_SIR_SAR_1B_20201218T132656_20201218T133434_D001

CS_OFFL_SIR_GDR_2_20201218T230253_20201219T004208_D002