

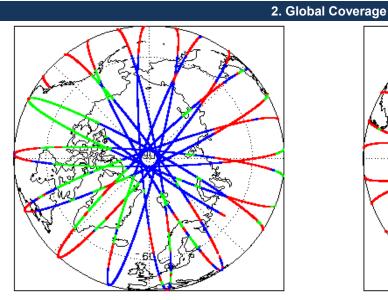
# **QA4EO Daily Report for OFFLINE data:**

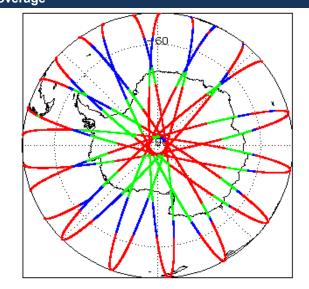
<u>30/12/2020</u>

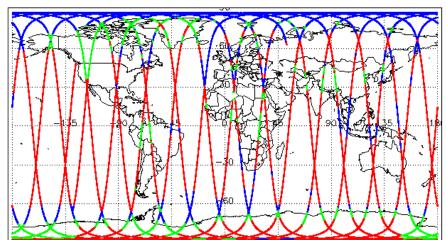
# 1. Overview

Report Production Date:	28-Jan-2021	Check	Status
Report Production Date:	28-Jan-2021	Server check: science-pds.cryosat.esa.int	Nominal
Processor Used:	CryoSat Ice Processor	Server check: calval-pds.cryosat.esa.int	Nominal
	CryoSal 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

	Mission / Instrument News						
20 Dec 2020	SIRAL unavailability from 29-12-2020 10:55:06 to 12:26:39 missing all SIRAL data						
29-Dec-2020	SIRAL unavailability from 29-12-2020 10:55:06 to 12:26:39 missing all SIRAL data SIRAL unavailability from 29-12-2020 07:46:45 to 09:56:05 missing SARIN-1 and SAR data						
30-Dec-2020	None						
31-Dec-2020	Nothing planned						





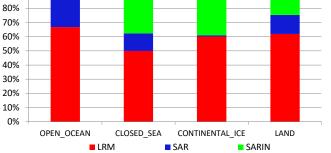


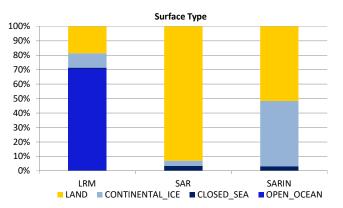
### Mode Coverage (%)

LRM	65.1
SAR	22.2
SARIn	12.8



100% 90%





## 3. Instrument Configuration

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

SIRAL instrument(s) in use:

SIRAL - A

## 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.

149

#### Number of products with errors:

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20201229T235742_20201230T000005_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T011136_20201230T012713_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T012811_20201230T012946_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T013127_20201230T013220_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T013222_20201230T013231_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T013512_20201230T013716_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T025703_20201230T030123_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T030200_20201230T030612_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T030755_20201230T031041_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T031318_20201230T031443_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T034602_20201230T040734_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T042403_20201230T044337_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T051038_20201230T051045_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T051050_20201230T051108_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T051113_20201230T051120_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T051122_20201230T051141_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T051350_20201230T051350_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T051354_20201230T051357_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T051402_20201230T051844_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T052023_20201230T054651_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T055428_20201230T055656_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T060512_20201230T061740_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T064924_20201230T064947_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T064949_20201230T065017_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T065020_20201230T065037_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T065039_20201230T065131_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T065134_20201230T065141_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T065144_20201230T065149_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T065151_20201230T065209_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T065211_20201230T065226_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T065229_20201230T065232_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T065234_20201230T065237_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T065443_20201230T065532_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T065903_20201230T070838_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T071042_20201230T072549_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T074208_20201230T075427_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T075908_20201230T081103_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T081218_20201230T081252_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T081326_20201230T081405_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T082805_20201230T083156_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T083158_20201230T083203_D001	Loss of echo	The tracking echo is missing for one or more records

CS OFFL SIR LRM 1B 20201230T083206 20201230T083229 D001 CS OFFL SIR LRM 1B 20201230T083254 20201230T083314 D001 CS OFFL SIR LRM 1B 20201230T083317 20201230T083329 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T083331\_20201230T083336\_D001 CS OFFL SIR LRM 1B 20201230T083340 20201230T083343 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T083348\_20201230T083349\_D001 CS OFFL SIR LRM 1B 20201230T083354 20201230T083401 D001 CS OFFL SIR LRM 1B 20201230T083404 20201230T083405 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T083408 20201230T084149 D001 CS OFFL SIR LRM 1B 20201230T091301 20201230T091412 D001 CS OFFL SIR LRM 1B 20201230T091911 20201230T094538 D001 CS OFFL SIR LRM 1B 20201230T094620 20201230T095310 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T095447\_20201230T095543\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T100653\_20201230T101246\_D001 CS OFFL SIR LRM 1B 20201230T101251 20201230T101256 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T101303\_20201230T101318\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T101320\_20201230T101327\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T101403\_20201230T101408\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T101410\_20201230T101414\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T101416\_20201230T101430\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T101943\_20201230T104047\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T105828\_20201230T112644\_D001 CS OFFL SIR LRM 1B 20201230T112646 20201230T112652 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T114801\_20201230T115328\_D001 CS OFFL SIR LRM 1B 20201230T115434 20201230T115555 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T115602\_20201230T115754\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T115757\_20201230T115758\_D001 CS OFFL SIR LRM 1B 20201230T115802 20201230T115806 D001 CS OFFL SIR LRM 1B 20201230T115808 20201230T115811 D001 CS OFFL SIR LRM 1B 20201230T115814 20201230T115820 D001 CS OFFL SIR LRM 1B 20201230T115822 20201230T122315 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T123059\_20201230T123427\_D001 CS OFFL SIR LRM 1B 20201230T132458 20201230T132700 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T132839\_20201230T133114\_D001 CS OFFL SIR LRM 1B 20201230T133148 20201230T133224 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T133417\_20201230T133530\_D001 CS OFFL SIR LRM 1B 20201230T133711 20201230T133846 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T133952\_20201230T134253\_D001 CS\_OFEL\_SIR\_LRM\_1B\_20201230T134432\_20201230T134448\_D001 CS OFFL SIR LRM 1B 20201230T134822 20201230T135452 D001 CS OFFL SIR LRM 1B 20201230T140555 20201230T141124 D001 CS OFFL SIR LRM 1B 20201230T150724 20201230T150749 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T151024\_20201230T151125\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T151446\_20201230T151735\_D001 CS OFFL SIR LRM 1B 20201230T151918 20201230T152123 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T154515\_20201230T155021\_D001 CS OFFL SIR LRM 1B 20201230T155643 20201230T163020 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T163217\_20201230T163320\_D001 CS OFFL SIR LRM 1B 20201230T173640 20201230T174900 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T175021\_20201230T175101\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T175111\_20201230T175346\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T175827\_20201230T180554\_D001 CS OFFL SIR LRM 1B 20201230T180556 20201230T180719 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T181018\_20201230T181024\_D001 CS OFFL SIR LRM 1B 20201230T181026 20201230T181057 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T181059\_20201230T181059\_D001 CS OFFL SIR LRM 1B 20201230T181103 20201230T181152 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T181156\_20201230T181157\_D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T181159\_20201230T181225\_D001 CS OFFL SIR LRM 1B 20201230T181229 20201230T181300 D001 CS OFFL SIR LRM 1B 20201230T184446 20201230T185905 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T190633\_20201230T190838\_D001 CS OFFL SIR LRM 1B 20201230T191533 20201230T192901 D001 CS\_OFFL\_SIR\_LRM\_1B\_20201230T193254\_20201230T194217\_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_20201230T194438_20201230T194442_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194444_20201230T194450_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194453_20201230T194706_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194710_20201230T194727_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194731_20201230T194737_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194740_20201230T194745_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194747_20201230T194748_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194753_20201230T194800_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194802_20201230T194809_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194813_20201230T194822_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194824_20201230T194832_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194836_20201230T194837_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194841_20201230T194851_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194854_20201230T194856_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194859_20201230T194903_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194906_20201230T194914_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T194916_20201230T195248_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T200930_20201230T202146_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T211603_20201230T211936_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T212320_20201230T212404_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T212434_20201230T212451_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T212455_20201230T212459_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T212501_20201230T212504_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T212506_20201230T212507_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T212510_20201230T212513_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T212516_20201230T212604_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T212611_20201230T212623_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T212629_20201230T212632_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T212634_20201230T212643_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T212646_20201230T213146_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T214706_20201230T215313_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T215345_20201230T222011_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T222600_20201230T223119_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T223433_20201230T225911_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T230137_20201230T230148_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T230243_20201230T230833_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T230834_20201230T230952_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T233044_20201230T233052_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T233054_20201230T233100_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T233103_20201230T233114_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T233118_20201230T233141_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T233143_20201230T233155_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T233157_20201230T233159_D001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20201230T233201_20201230T235807_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.

0

Number of products with errors:

#### 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. 0

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. 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:

#### 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. 0

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.

58

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_220201230T001811_20201230T004837_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_220201230T010431_20201230T011043_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_220201230T011136_20201230T012713_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_220201230T012811_20201230T012946_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_220201230T015433_20201230T022824_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_220201230T025134_20201230T025149_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_220201230T025703_20201230T030123_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_220201230T030755_20201230T031041_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_220201230T031738_20201230T032016_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_220201230T034602_20201230T040734_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_220201230T042403_20201230T044337_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_220201230T044433_20201230T044838_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_220201230T044845_20201230T044852_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_220201230T045631_20201230T045720_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_220201230T051354_20201230T051357_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records

CS_OFFL_SIR_LRM_220201230T051402_20201230T051844_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_220201230T052023_20201230T054651_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_220201230T060512_20201230T061740_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_220201230T061820_20201230T063532_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_220201230T065903_20201230T070838_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_220201230T071042_20201230T072549_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_220201230T074208_20201230T075427_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_220201230T075908_20201230T081103_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_220201230T081326_20201230T081405_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201230T085005_20201230T090501_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_220201230T091911_20201230T094538_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_220201230T101943_20201230T104047_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_220201230T105828_20201230T112644_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_220201230T115822_20201230T122315_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_220201230T123906_20201230T131235_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_220201230T132458_20201230T132700_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_220201230T133711_20201230T133846_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_220201230T134822_20201230T135452_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_220201230T141802_20201230T145123_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_220201230T150412_20201230T150550_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_220201230T152342_20201230T154023_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_220201230T155643_20201230T163020_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_220201230T165517_20201230T171758_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_220201230T173640_20201230T174900_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_220201230T175021_20201230T175101_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_220201230T175111_20201230T175346_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_220201230T175827_20201230T180554_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_220201230T180556_20201230T180719_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_220201230T181103_20201230T181152_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201230T181159_20201230T181225_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201230T182535_20201230T184253_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_220201230T184446_20201230T185905_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_220201230T191533_20201230T192901_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_220201230T193022_20201230T193053_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_220201230T193254_20201230T194217_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_220201230T200930_20201230T202146_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_220201230T202718_20201230T203556_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_220201230T205521_20201230T211048_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_220201230T211603_20201230T211936_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_220201230T212434_20201230T212451_D001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_220201230T215345_20201230T222011_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_220201230T223433_20201230T225911_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_220201230T233201_20201230T235807_D001	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	209	209	209	0	0
SIR_SAR_1B	138	138	138	0	0
SIR_SIN_1B	101	101	101	0	0
SIR_LRM_2	209	209	206	3	0
SIR_SAR_2	101	136	136	0	0
SIR_SIN_2	136	101	97	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

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)
STRUCTURESIZEAN	DESTRUCTURE_SIZE_AND_READ	Under investigation.

## 6.2 QCC Warnings

Number of QCC report	s with warnings	7					
Total number of occurrences of each warning							
Product Type	AXDME	AXSMMEOCI	-	•	-	-	-
SIR_LRM_2_	0	3					
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	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: 1				
Product name CS_OFFL_SIR_GDI	R_220201230T111643_20201230T125558_D002			