

### 1. Overview

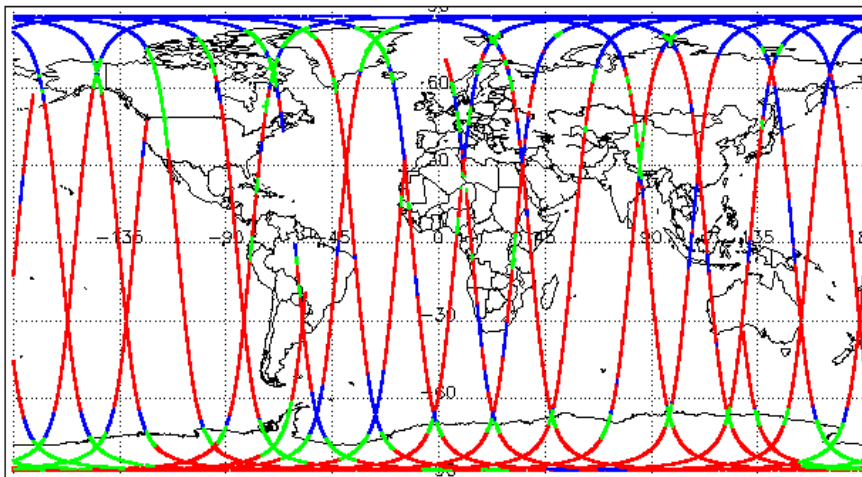
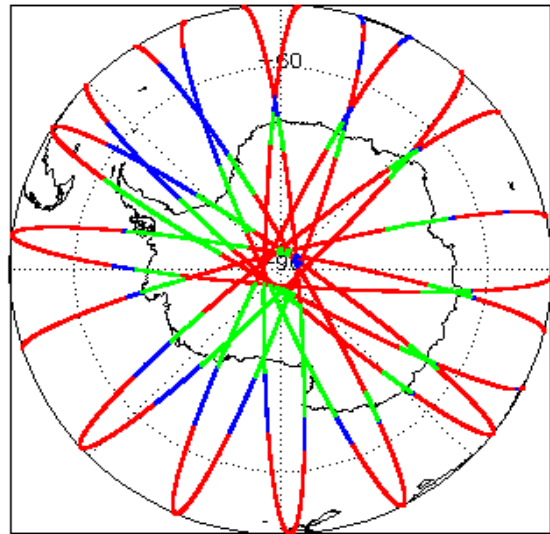
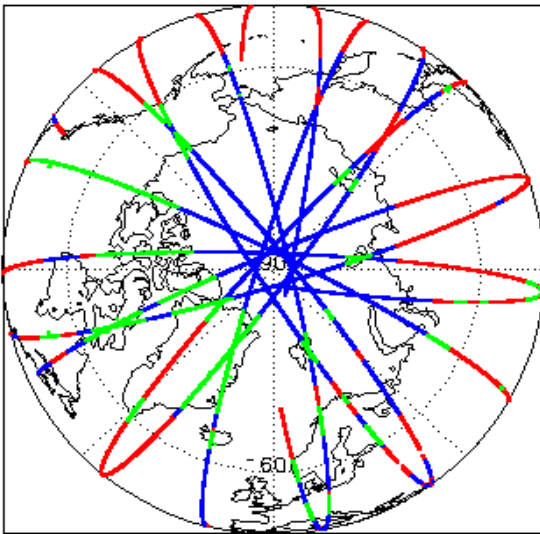
Report Production Date:	18-Feb-2022
Processor Used:	CryoSat Ice Processor
Data Used:	L1B and L2 OFFLINE Data

Check	Status
Server check: science-pds.cryosat.esa.int	Nominal
Server check: calval-pds.cryosat.esa.int	Nominal
Product Software Check	Nominal
Product Format Check	Nominal
Product Header Analysis	Nominal
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

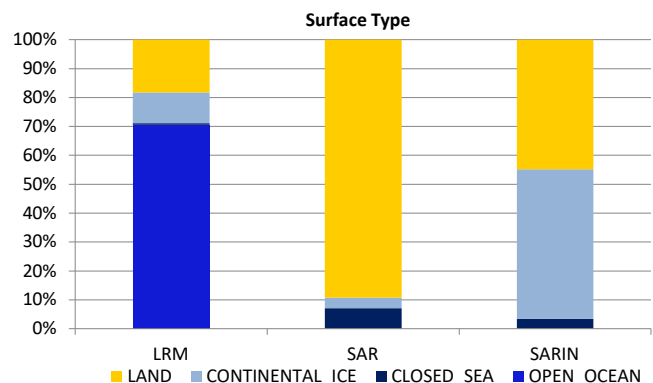
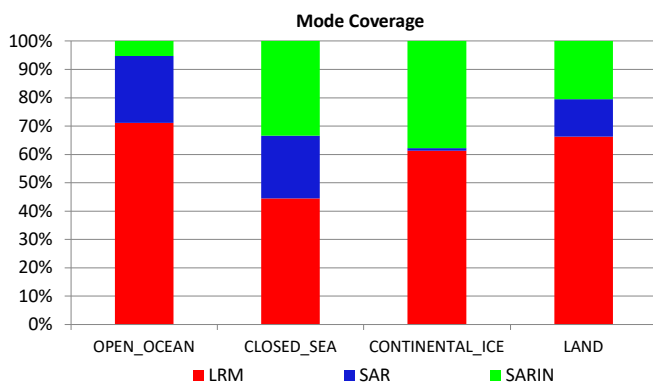
#### Mission / Instrument News

20-Jan-2022	None
21-Jan-2022	Due to a planned Orbit Control Manoeuvre, SIRAL was unavailable on 21/01/2022 from 03:03:17 to 04:54:25 UTC.
22-Jan-2022	Nothing planned

### 2. Global Coverage



Mode Coverage (%)		
	LRM	68.9
	SAR	18.8
	SARIn	12.3



### 3. Instrument Configuration

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

SIRAL instrument(s) in use:	SIRAL - A
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### 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 NetCDF product file (.nc).

Number of products with errors: 0

#### 4.2 L1B Product Header Analysis

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

Number of products with errors: 0

#### 4.3 Star Tracker Usage Check

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

Number of products with errors: 0

#### 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.

Number of products with errors: 122

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20220121T001501_20220121T002642_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T003228_20220121T003453_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T004842_20220121T005629_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T005809_20220121T011236_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T011239_20220121T011303_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T011305_20220121T011326_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T011402_20220121T011411_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T011413_20220121T011418_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T011421_20220121T011431_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T011433_20220121T011434_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T011436_20220121T011442_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T011444_20220121T011951_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T013222_20220121T013336_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T013459_20220121T013812_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T014331_20220121T014819_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T024421_20220121T024459_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T024845_20220121T024940_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T025109_20220121T025112_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T025114_20220121T025133_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T025137_20220121T025208_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T025210_20220121T025432_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T045425_20220121T045644_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T053908_20220121T060003_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T060028_20220121T060549_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T060707_20220121T060817_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T061002_20220121T061059_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T061530_20220121T061611_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T061634_20220121T061724_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T062959_20220121T070454_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T072946_20220121T073443_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T073510_20220121T074154_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T074337_20220121T074529_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T074541_20220121T074624_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T074942_20220121T074949_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T075019_20220121T075030_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T075327_20220121T075557_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T082136_20220121T084339_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T091159_20220121T091916_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T091959_20220121T092432_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T093341_20220121T093400_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T094631_20220121T094642_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T094644_20220121T094702_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T094705_20220121T094729_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T095020_20220121T102251_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T104051_20220121T105320_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T112500_20220121T112522_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T112525_20220121T112532_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220121T112535_20220121T112545_E001	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

## 4.6 L1B 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

## 4.7 L1B Auxiliary Correction Error Check

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

Number of products with errors: 0

## 4.8 L1B Measurement Confidence Data Check

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

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

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

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

Number of products with errors: 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 NetCDF product file (.nc).

Number of products with errors: 0

## 5.2 L2 Product Header Analysis

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

Number of products with errors: 0

## 5.3 L2 Auxiliary Data File Usage Check

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

Number of products with errors: 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: 0

## 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: 227

Product	Test Failed	Description
CS_OFFL_SIR_LRM_2__20220121T001501_20220121T002642_E001	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_2__20220121T004842_20220121T005629_E001	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_2__20220121T005809_20220121T011236_E001	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_2__20220121T013222_20220121T013336_E001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_2__20220121T013459_20220121T013812_E001	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_2__20220121T013907_20220121T014208_E001	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_2__20220121T014331_20220121T014819_E001	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_2__20220121T015046_20220121T020731_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records

















