

1. Overview

Report Production Date:	18-Jan-2023
Processor Used:	CryoSat Ice Processor
Data Used:	L1B and L2 OFFLINE Data

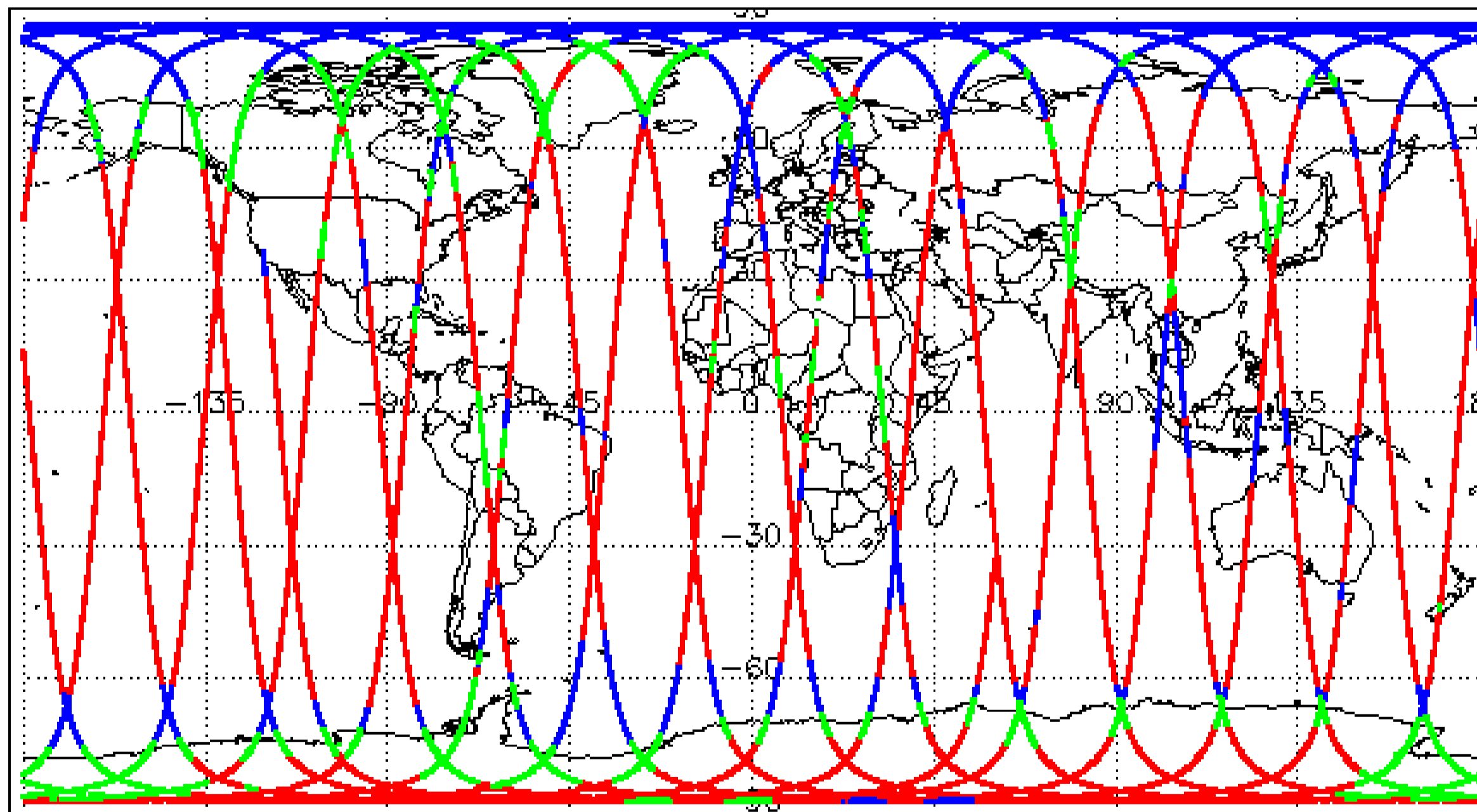
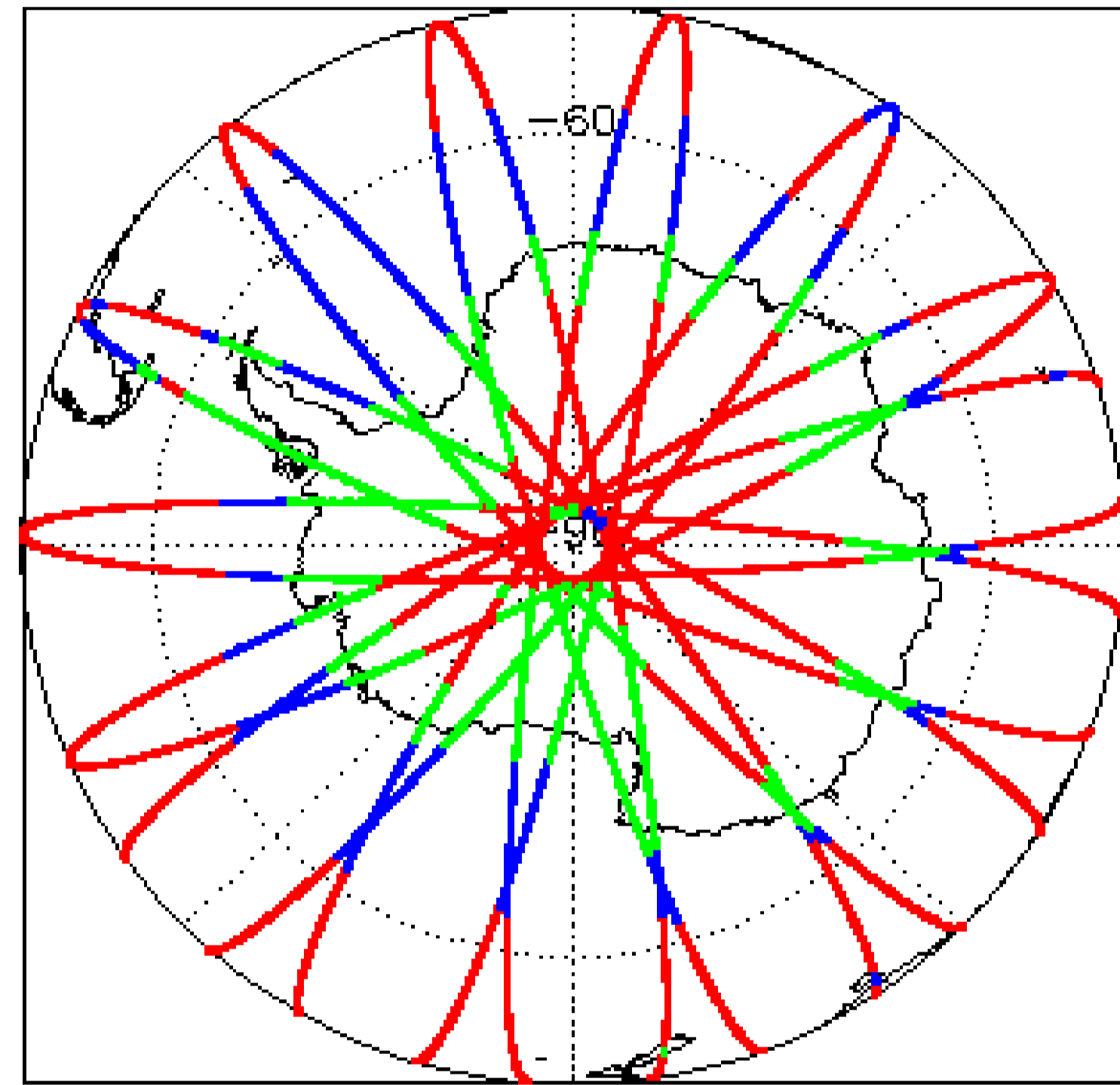
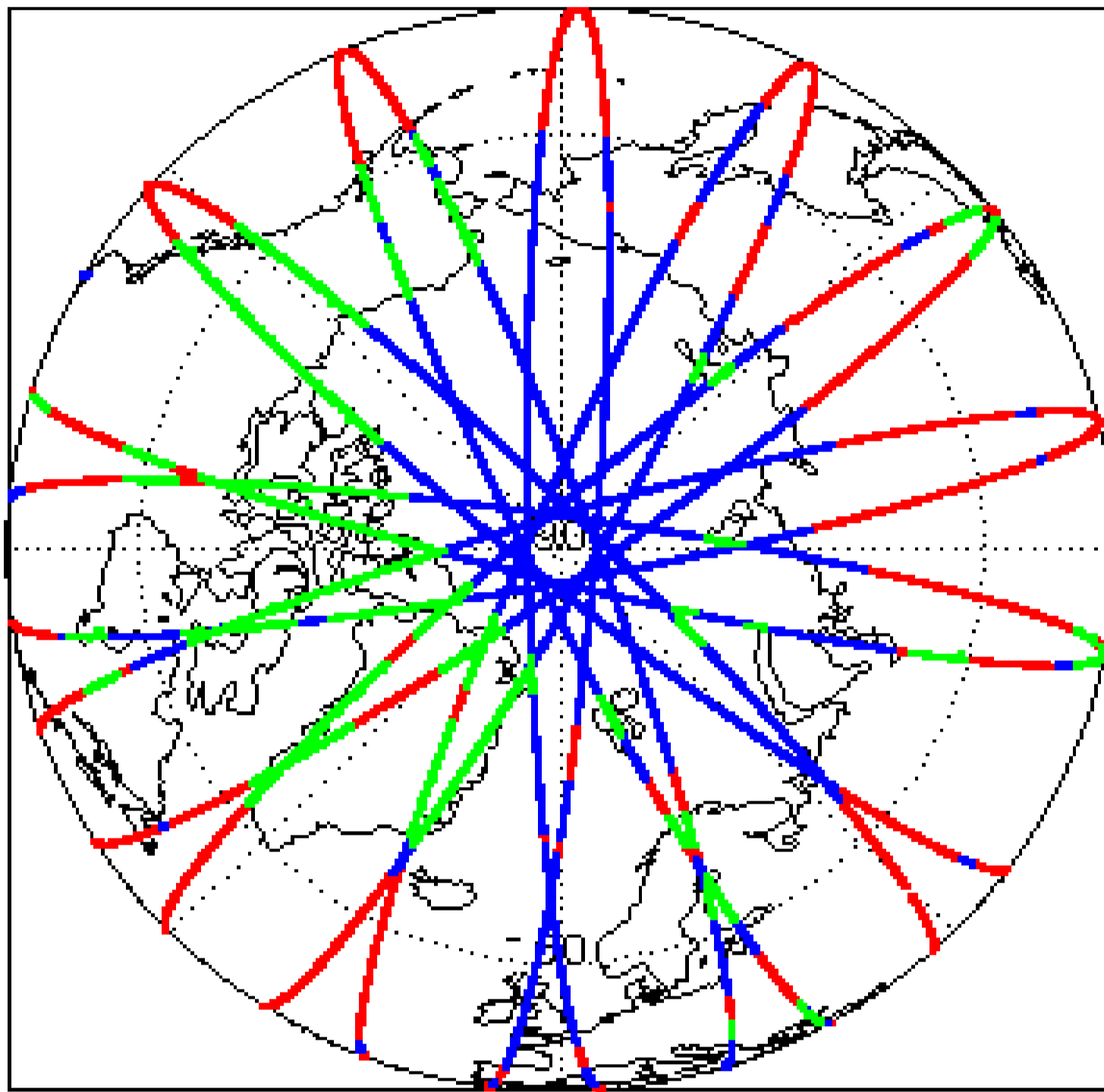
Check	Status
Server check: science-pds.cryosat.esa.int	Nominal
Server check: calval-pds.cryosat.esa.int	Nominal
Product Software Check	Nominal
Product Format Check	Nominal
Product Header Analysis	Nominal
Star Tracker Usage Check	Nominal
L1B Tracking Flag Check	See Section 4.4
L1B Calibration Usage Check	Nominal
L1B & L2 Auxiliary Data File Usage Check	Nominal
L1B & L2 Auxiliary Correction Error Check	See Section 5.4
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

We would love to hear from you! Please let us know your feedback about these daily quality reports: What do you like/ dislike? What quality information do you need? Send your feedback to cs2_qc_team@telespazio.com

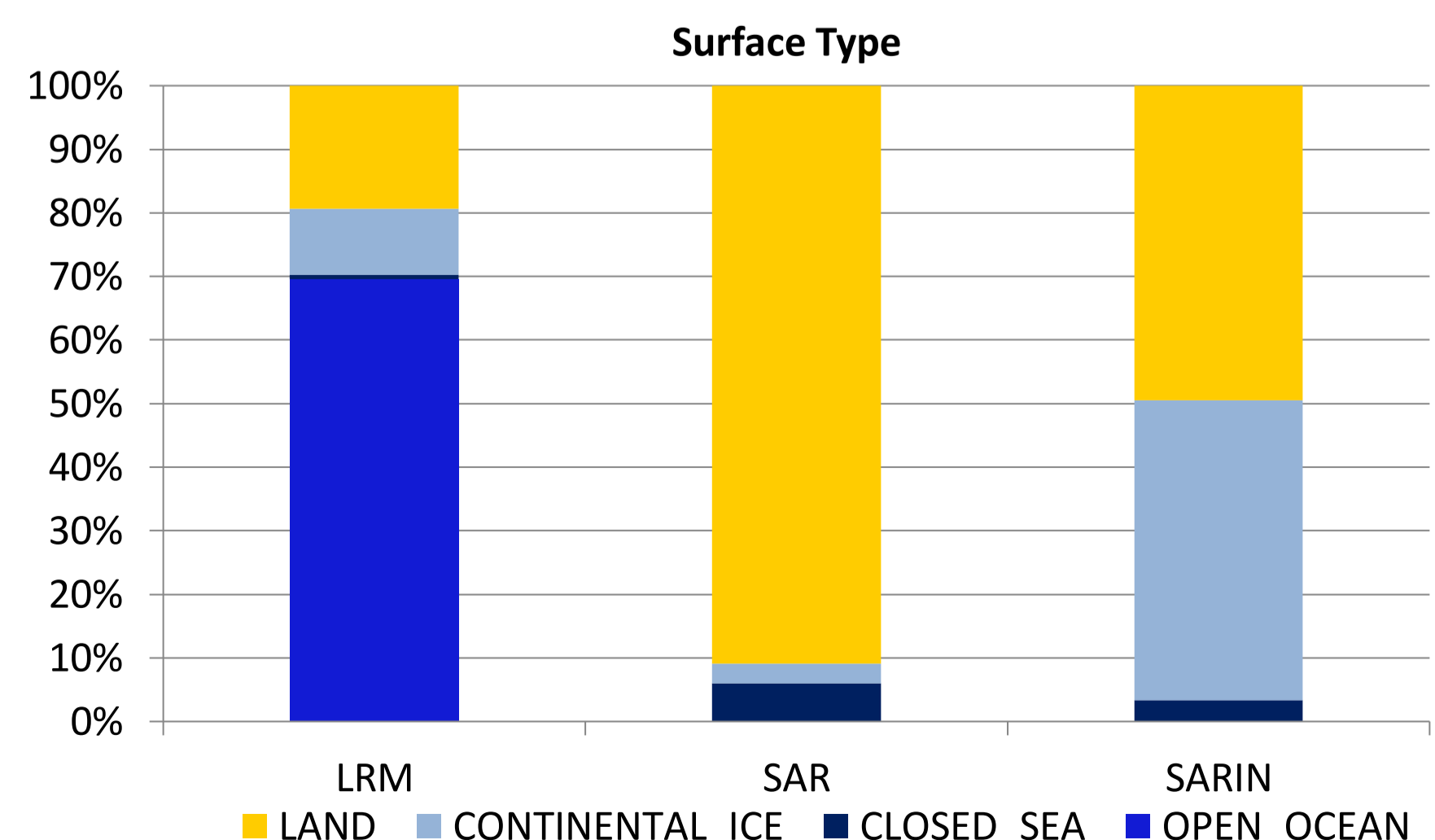
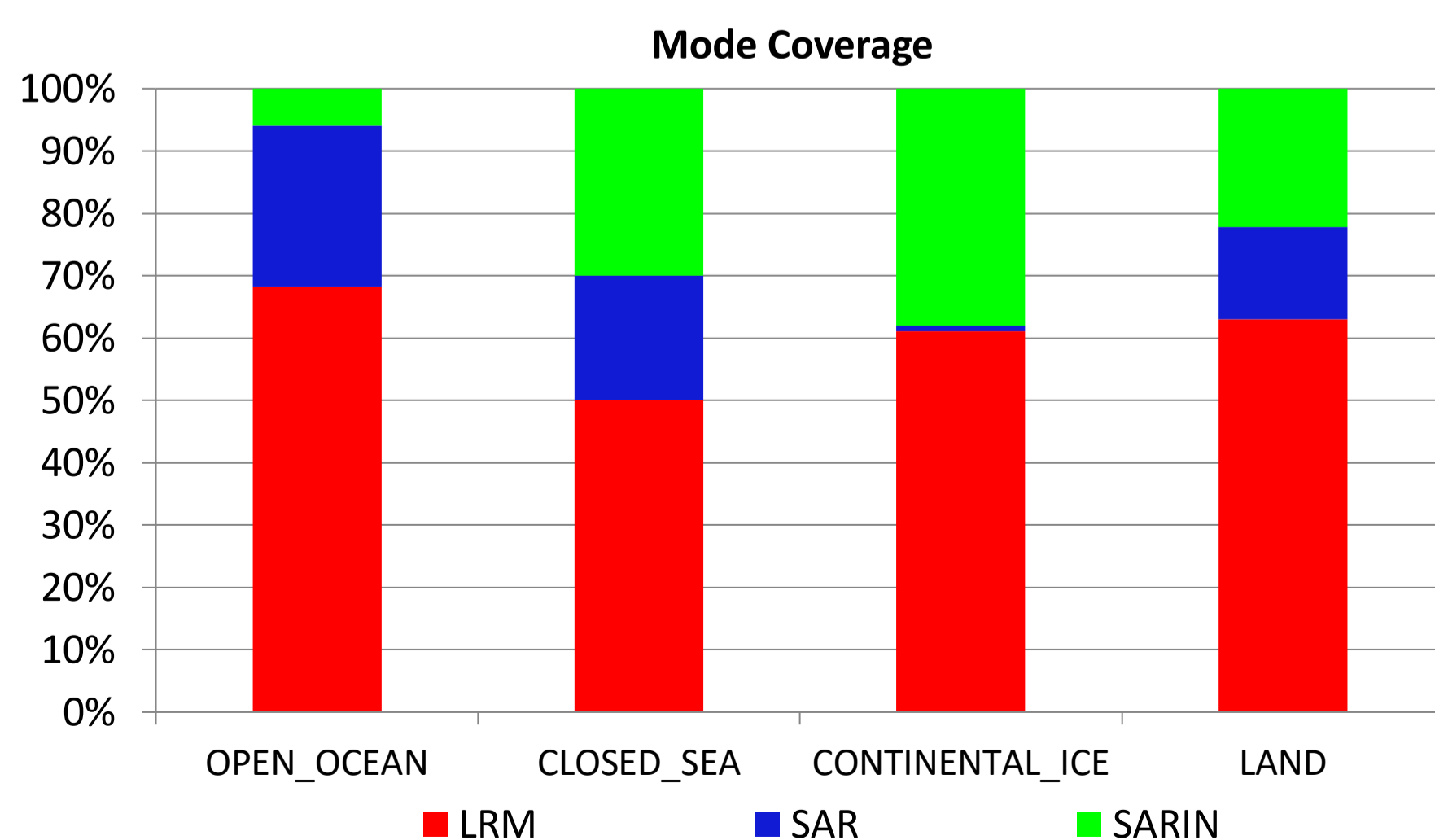
Mission / Instrument News

18-Dec-2022	None
19-Dec-2022	None
20-Dec-2022	Nothing planned

2. Global Coverage



Mode Coverage (%)		
	LRM	66.2
	SAR	20.7
	SARIn	13.1



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 product file (.DBL).

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: 133

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20221219T001509_20221219T001835_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T011153_20221219T011515_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T011549_20221219T011741_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T011745_20221219T011903_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T011907_20221219T011914_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T011916_20221219T012551_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T012553_20221219T013154_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T013158_20221219T013208_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T013210_20221219T013659_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T014948_20221219T015537_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T020212_20221219T022431_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T022437_20221219T023450_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T025000_20221219T025030_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T025417_20221219T025546_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T025630_20221219T025658_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T025700_20221219T025712_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T030642_20221219T031008_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T031033_20221219T031224_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T041633_20221219T041658_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T043616_20221219T043749_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T043855_20221219T044346_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T044524_20221219T050356_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T051108_20221219T051333_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T052033_20221219T055338_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T055500_20221219T055533_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T055536_20221219T055546_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T055548_20221219T055551_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T055554_20221219T055701_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T062846_20221219T064131_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T065046_20221219T065242_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T065428_20221219T065745_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T065944_20221219T071506_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T071708_20221219T072700_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T073015_20221219T073151_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T073153_20221219T073156_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T073159_20221219T073648_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T075222_20221219T080548_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T080910_20221219T081006_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T081029_20221219T081734_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T082915_20221219T083204_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T090224_20221219T090342_E001	Loss of echo	The tracking echo is missing for one or more records

CS_OFFL_SIR_LRM_1B_20221219T210047_20221219T210506_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T210508_20221219T210509_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T210513_20221219T210525_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T210528_20221219T210535_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T210538_20221219T210541_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T210623_20221219T210636_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T210639_20221219T210642_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T210645_20221219T210656_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T210659_20221219T210710_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T210713_20221219T210720_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T210723_20221219T210727_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T210731_20221219T211057_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T211059_20221219T211113_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T211116_20221219T211122_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T211124_20221219T211126_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T211129_20221219T211130_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T211133_20221219T211134_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T211136_20221219T211137_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T211140_20221219T211142_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T211145_20221219T211227_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T211315_20221219T211430_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T214542_20221219T214659_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T215152_20221219T221815_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T222050_20221219T222609_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T222732_20221219T222821_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T224020_20221219T224708_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20221219T224850_20221219T224937_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 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 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 Applied 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: 1

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20221219T163457_20221219T164013_E001	Echo error, TRK echo error	The tracking echo has returned an error and the Rx1 Echo Error flag is set, indicating a degraded echo

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: 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 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 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.

Sea State Bias error: This flag is currently set in all L2 LRM products over ocean, indicating a problem with the sea state bias. Due to a known anomaly, the sea state bias field is currently unfilled in all Baseline-E L2 LRM products. This anomaly will be resolved in the next IPF update.

Snow Depth Model error: This flag is currently set in all L2 SAR products over ocean, which fall outside of the extent of the current snow depth model. Currently the snow depth model is only available over the high-latitude Arctic. There is no model currently provided for the Antarctic or marginal Arctic regions. An updated model will be provided in the next IPF update.

Number of products with errors: 124

Product	Test Failed	Description
CS_OFFL_SIR_SAR_2__20221219T000722_20221219T000810_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T002000_20221219T002238_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T010736_20221219T011153_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T013659_20221219T014137_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T014617_20221219T014822_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T015852_20221219T020212_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T023450_20221219T023504_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T023558_20221219T023628_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T024521_20221219T024819_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T025031_20221219T025100_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T025150_20221219T025417_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T025712_20221219T030031_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T031225_20221219T031406_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T032434_20221219T032752_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T033732_20221219T034057_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T040243_20221219T040527_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T041502_20221219T041559_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T041602_20221219T041610_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T041611_20221219T041633_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T042422_20221219T042609_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T042723_20221219T042826_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T042851_20221219T043616_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T043750_20221219T043855_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T050356_20221219T050806_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T051848_20221219T052033_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T055338_20221219T055417_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T055422_20221219T055437_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T055439_20221219T055450_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T055457_20221219T055500_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T060834_20221219T060922_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T062832_20221219T062845_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T064131_20221219T064811_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T065913_20221219T065943_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T071506_20221219T071708_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T075215_20221219T075222_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T080548_20221219T080732_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T081734_20221219T082123_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T082202_20221219T082213_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T083830_20221219T083917_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T085334_20221219T085513_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T085603_20221219T090027_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T090027_20221219T090223_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model

CS_OFFL_SIR_SAR_2__20221219T194124_20221219T194523_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T195828_20221219T195912_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T200551_20221219T200556_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T200603_20221219T200609_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T201022_20221219T201230_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T201402_20221219T201433_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T201908_20221219T202007_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T204648_20221219T204829_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T204911_20221219T204923_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T210547_20221219T210612_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T210619_20221219T210623_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T211430_20221219T211512_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T211513_20221219T211848_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T211851_20221219T212239_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T213749_20221219T213836_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T214505_20221219T214507_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T215026_20221219T215152_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T221815_20221219T222050_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T231211_20221219T231242_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T231700_20221219T231804_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T232943_20221219T233123_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20221219T235802_20221219T235958_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SIN_2__20221219T033431_20221219T033732_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2__20221219T050806_20221219T051108_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2__20221219T051333_20221219T051848_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2__20221219T064811_20221219T065045_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2__20221219T082312_20221219T082915_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2__20221219T132456_20221219T132844_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2__20221219T150435_20221219T150750_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2__20221219T182925_20221219T183110_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2__20221219T200746_20221219T201021_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2__20221219T214659_20221219T215026_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records

5.5 L2 Measurement Quality Flag Check

CryoSat L2 data includes a quality flag 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.

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.

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.

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.

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.

Number of products with errors: 239

Product	Test Failed	Description
CS_OFFL_SIR_LRM_2__20221218T234223_20221219T000722_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__20221219T002239_20221219T005517_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__20221219T011916_20221219T012551_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__20221219T013210_20221219T013659_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__20221219T020212_20221219T022431_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_SIN_2__20221219T223720_20221219T223757_E001	Backscatter Error (Retracker 2), Backscatter Error (Retracker 3), SARIn X-track Angle Error, Surface model unavailable	There is a backscatter error for Retracker 2 and 3, an ambiguous angle was detected for SARIn mode, and no DEM or Slope Model was used for the location for one or more records
CS_OFFL_SIR_SIN_2__20221219T224709_20221219T224850_E001	SARIn X-track Angle Error, Surface model unavailable	An ambiguous angle was detected for SARIn mode and no DEM or Slope Model was used for one or more records
CS_OFFL_SIR_SIN_2__20221219T224939_20221219T225147_E001	SARIn X-track Angle Error, Surface model unavailable	An ambiguous angle was detected for SARIn mode and no DEM or Slope Model was used for one or more records
CS_OFFL_SIR_SIN_2__20221219T231805_20221219T232030_E001	Backscatter Error (Retracker 2), Backscatter Error (Retracker 3), SARIn X-track Angle Error	There is a backscatter error for Retracker 2 and 3 and an ambiguous angle was detected for SARIn mode for one or more records
CS_OFFL_SIR_SIN_2__20221219T232807_20221219T232942_E001	Backscatter Error (Retracker 2), Backscatter Error (Retracker 3), SARIn X-track Angle Error	There is a backscatter error for Retracker 2 and 3 and an ambiguous angle was detected for SARIn mode for one or more records
