## 1. Overview

| Report Production Date: | 05-May-2016 |
|---|---|
| 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 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 4.7 and 5.5 |

**Mission / Instrument News**

| | |
|---|---|
| 05-Apr-2016 | SIRAL unavailability on 05-April-2016 from 22:11:20 to 06-April 2016 11:32:22 due to a collision avoidance manoeuvre. |
| 06-Apr-2016 | SIRAL unavailability on 05-April-2016 from 22:11:20 to 06-April 2016 11:32:22 due to a collision avoidance manoeuvre. |
| 07-Apr-2016 | Nothing planned |

## 2. Global Coverage

**Global Coverage - North Pole**
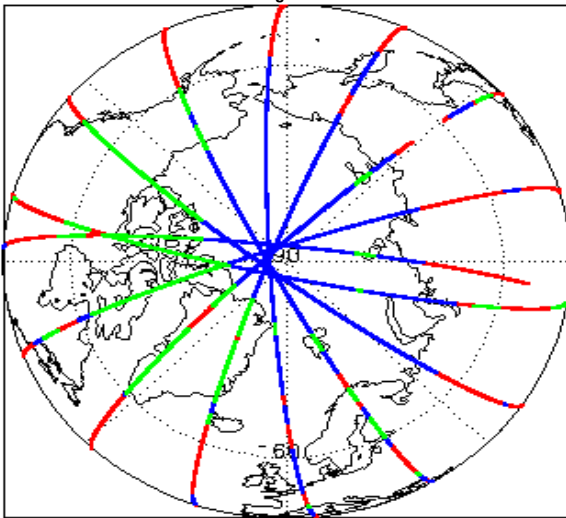
**Global Coverage - South Pole**
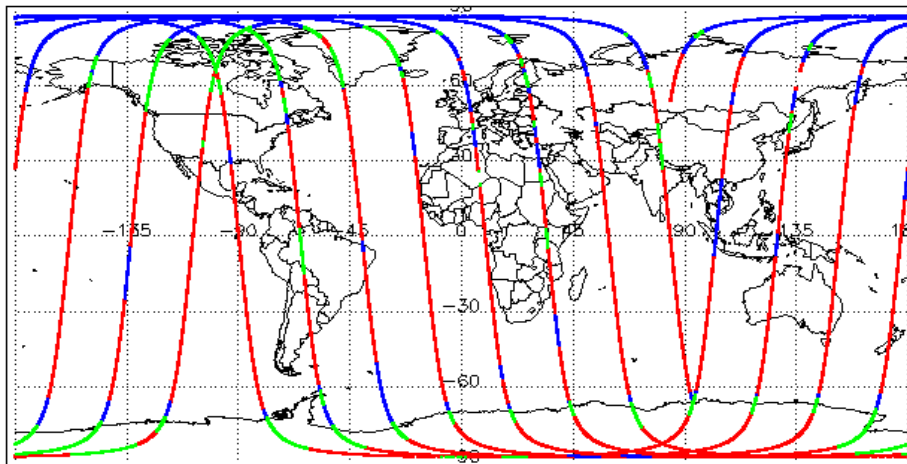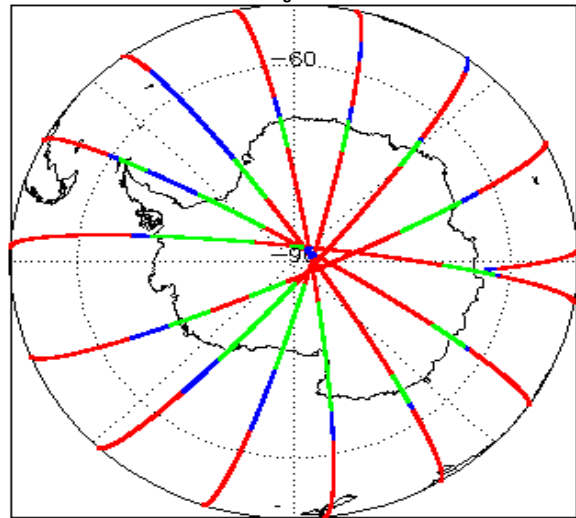


**Mode Coverage (%)**

| | | |
|---|---|---|
| (red) | LRM | 19.3 |
| (blue) | SAR | 13.1 |
| (green) | SARIn | 0.0 |

**Mode Coverage**
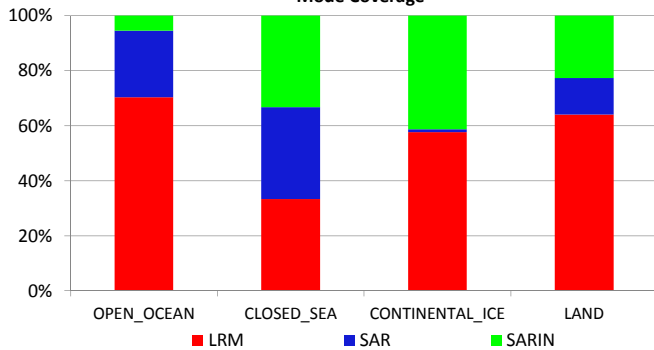
**Surface Type**
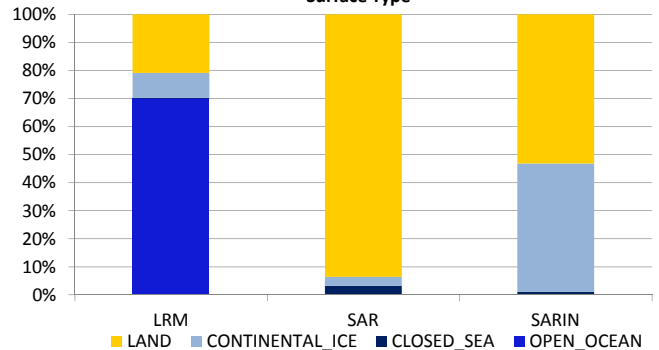


## 3. Instrument Configuration

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:**                         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 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

## 4.5 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

## 4.6 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

## 4.7 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:**                         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:**                         46

| Product | Test Failed | Description |
|---|---|---|
| CS_OFFL_SIR_LRM_2__20160406T113253_20160406T115739_C001 | 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__20160406T122943_20160406T125758_C001 | 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__20160406T131153_20160406T134138_C001 | 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 |

| File | Error Type | Description |
|---|---|---|
| CS_OFFL_SIR_LRM_2__20160406T140506_20160406T142013_C001 | 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__20160406T142546_20160406T143715_C001 | 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__20160406T150002_20160406T150726_C001 | 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__20160406T152805_20160406T152854_C001 | 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__20160406T154146_20160406T161607_C001 | 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__20160406T163335_20160406T165323_C001 | 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__20160406T172125_20160406T173023_C001 | 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__20160406T173308_20160406T175450_C001 | 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__20160406T180847_20160406T183601_C001 | 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__20160406T190203_20160406T193404_C001 | 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__20160406T195222_20160406T200449_C001 | 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__20160406T200546_20160406T202238_C001 | 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__20160406T204421_20160406T205544_C001 | 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__20160406T205747_20160406T211319_C001 | 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__20160406T212908_20160406T214136_C001 | 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__20160406T214616_20160406T215757_C001 | 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__20160406T223708_20160406T225212_C001 | 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__20160406T230006_20160406T230120_C001 | Surface Model Unavailable | No DEM or Slope Model was used for the location of one or more records |
| CS_OFFL_SIR_LRM_2__20160406T230543_20160406T233247_C001 | 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__20160406T121643_20160406T122127_C001 | 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__20160406T125941_20160406T130113_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T130247_20160406T130400_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T130822_20160406T131100_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T143923_20160406T144313_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T144901_20160406T145022_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T152959_20160406T153039_C001 | 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__20160406T161904_20160406T162218_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T162732_20160406T162848_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T175621_20160406T180041_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T180637_20160406T180752_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T184550_20160406T184828_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T184845_20160406T185009_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T193428_20160406T193552_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T194358_20160406T194545_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T202244_20160406T202655_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T202813_20160406T202916_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T211336_20160406T211518_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T212046_20160406T212052_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T212212_20160406T212443_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T220605_20160406T220815_C001 | 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__20160406T225231_20160406T225447_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T230120_20160406T230455_C001 | SARIn X-track Angle Error | An ambiguous angle was detected for SARIn mode for one or more records |
| CS_OFFL_SIR_SIN_2__20160406T235145_20160406T235221_C001 | 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 |