# *IDEAS+ Daily Report for OFFLINE and GOP data:* *26/05/2015*

## 1. Overview

| Report Production Date: |
|---|
| 14-Jul-2015 |

| Data Used: | OFFLINE L1B and L2 Science Data | Geophysical Ocean Products (GOP) L1B and L2 Science Data |
|---|---|---|
| **Check** | **Status** | **Status** |
| Server check: science-pds.cryosat.esa.int | Nominal | Nominal |
| Server check: calval-pds.cryosat.esa.int | Nominal | Nominal |
| Product Software Check | Nominal | Nominal |
| Product Format Check | Nominal | Nominal |
| Product Header Analysis | Nominal | Nominal |
| Auxiliary Data File Usage Check | Nominal | Nominal |
| Auxiliary Correction Data Check | Nominal | Nominal |
| Measurement Confidence Data Check | See Section 4.5 and 5.5 | See Section 7.5, 7.6, 8.5 and 8.6 |

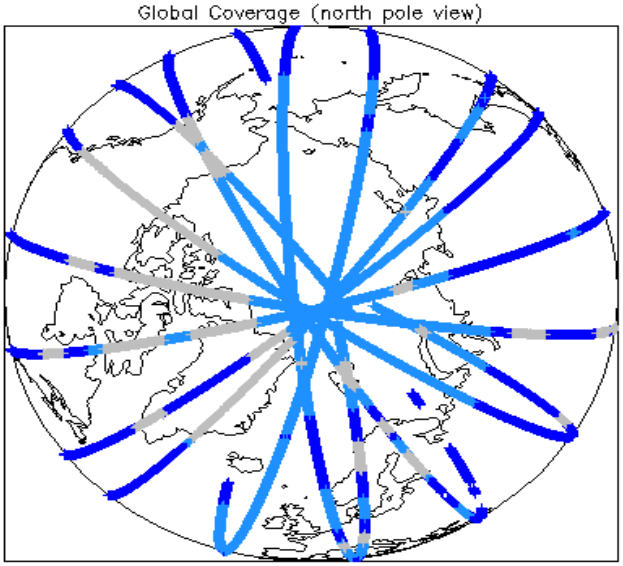
| Mission / Instrument News | |
|---|---|
| 25-May-2015 | SIRAL unavailability on 25-May-2015 from 06:17:21 to 08:03:29 due to a planned orbit manoeuvre. |
| 26-May-2015 | L0 data missing on 26-May-2015 from 10:16:08 to 16:56:51 due to an unplanned ground segment anomaly. |
| 27-May-2015 | Nothing planned |

## Report Contents

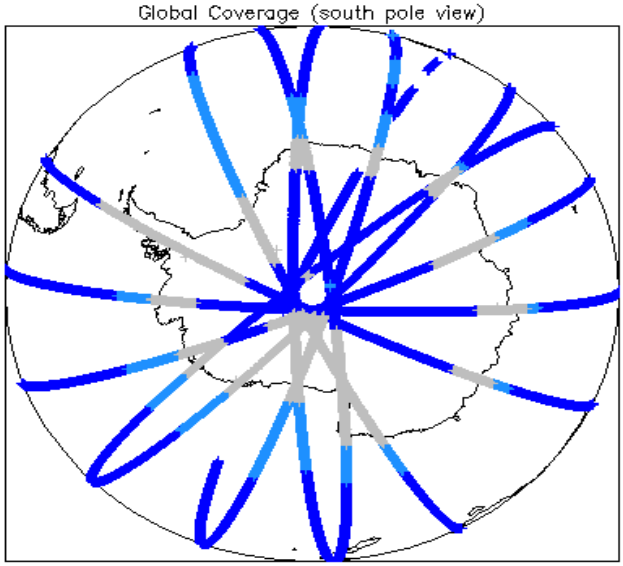


## 2. Global Coverage

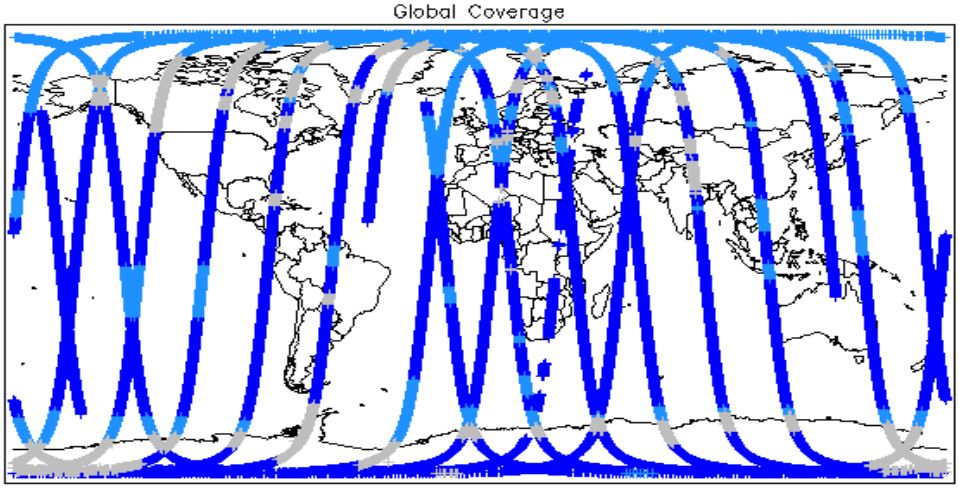
Global Coverage (north pole view)



Global Coverage (south pole view)

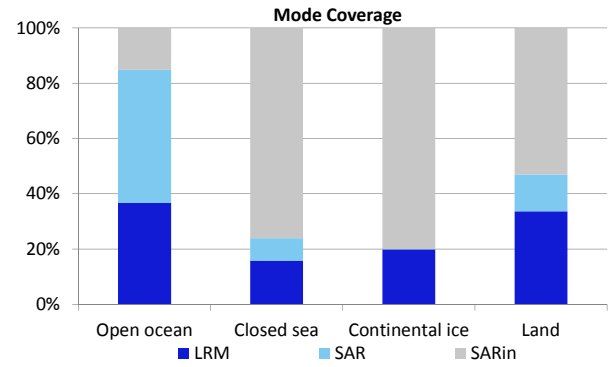


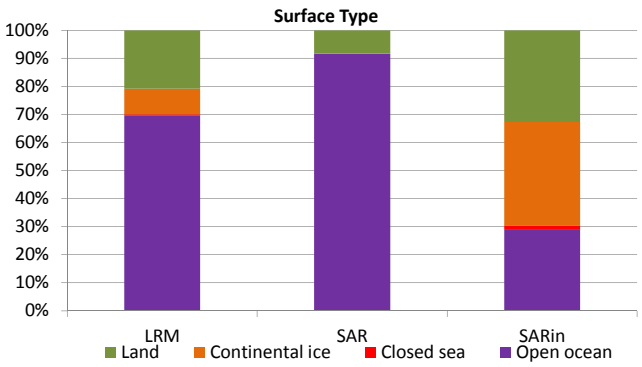
Global Coverage



**Mode Coverage (%)**

| | | |
|---|---|---|
| | LRM | 69.68 |
| | SAR | 19.91 |
| | SIN | 10.23 |




## 3. Instrument Configuration

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

| SIRAL instrument(s) in use: | SIRAL - A |
|---|---|

## 4. OFFLINE 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 performed 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 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

### 4.4 L1B Auxiliary Correction Error Check

Each product is checked for auxiliary corrections flagged by the ground-station processing chain as missing or containing errors.

**Number of products with errors:** 0

### 4.5 L1B Measurement Confidence Data Check

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

**Number of products with errors:** 5

| Product | Test Failed | Description |
|---|---|---|
| CS_OFFL_SIR_LRM_1B_20150526T014925_20150526T015723_C001 | Echo error | The tracking echo has returned an error |
| CS_OFFL_SIR_LRM_1B_20150526T035613_20150526T041329_C001 | Echo error | The tracking echo has returned an error |
| CS_OFFL_SIR_LRM_1B_20150526T050955_20150526T051944_C001 | Echo error | The tracking echo has returned an error |
| CS_OFFL_SIR_LRM_1B_20150526T170731_20150526T171300_C001 | Echo error | The tracking echo has returned an error |
| CS_OFFL_SIR_LRM_1B_20150526T190754_20150526T191423_C001 | Echo error | The tracking echo has returned an error |

## 5. OFFLINE 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 performed 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

Each product is checked for auxiliary corrections flagged by the ground-station processing chain as missing or containing errors.

**Number of products with errors:** 0

## 5.5 L2 Measurement Quality Flag Check

CryoSat L2 data includes a quality flag word (field 50) for each 20-Hz measurement record. The bit value of this flag is an assessment of the measurement quality by the processing chain.

**There are several common Quality Flag errors raised in the L2 products which are either expected due to operational mode or surface type, or are under investigation. These known issues are summarised 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.

**SARin x-track angle error:** This flag is set when the difference between the computed surface elevation and the DEM is >50m. The DEM is only available over Greenland and Antarctica and therefore this flag is set for L2 SIN products in all other locations.

**Height error and Backscatter errors:** The height error and backscatter error flags are set for a number of products over land areas, but this is to be expected.

**SSHA interpolation error:** This flag is currently set for a number of products in all modes. This issue is under investigation.

**Number of products with errors:** 32

| Product | Test Failed | Description |
|---|---|---|
| CS_OFFL_SIR_SAR_2__20150526T002352_20150526T003023_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T014037_20150526T014216_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T014556_20150526T014924_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T015723_20150526T015752_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T020541_20150526T020959_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T021206_20150526T021304_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T021534_20150526T021615_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T034125_20150526T034910_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T043008_20150526T043215_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T051944_20150526T052941_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T060923_20150526T061153_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T065855_20150526T065938_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T070313_20150526T071101_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T071205_20150526T071249_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T074800_20150526T075137_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T080118_20150526T080258_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T084045_20150526T084238_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T084243_20150526T085411_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T170259_20150526T170440_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T170457_20150526T170731_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T183321_20150526T183404_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T183514_20150526T184144_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T202043_20150526T202209_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T202255_20150526T202352_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T203156_20150526T203211_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T210130_20150526T210332_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T211310_20150526T211602_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T214939_20150526T215136_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T215230_20150526T220400_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T223729_20150526T224428_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T232736_20150526T232955_C001 | Peakiness error | There is an error in the peakiness derivation |
| CS_OFFL_SIR_SAR_2__20150526T233400_20150526T233944_C001 | Peakiness error | There is an error in the peakiness derivation |

# 6. OFFLINE QCC Check

The QCC is a CryoSat facility that 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.

NB. There is currently a discrepancy between the number of QCC reports and the number of products reported. This is a known issue and investigation is on-going.

| Product type | Nb. Products | Nb. QCC Reports | Nb. Valid | Nb. Warnings | Nb. Errors |
|---|---|---|---|---|---|
| SIR_GDR_2A | 14 | 0 | 0 | 0 | 0 |
| SIR_LRM_1B | 91 | 0 | 0 | 0 | 0 |
| SIR_LRM_2 | 91 | 0 | 0 | 0 | 0 |
| SIR_SAR_1B | 68 | 0 | 0 | 0 | 0 |
| SIR_SAR_2A | 68 | 0 | 0 | 0 | 0 |
| SIR_SIN_1B | 58 | 0 | 0 | 0 | 0 |
| SIR_SIN_2 | 57 | 0 | 0 | 0 | 0 |

## 6.1 QCC Errors

**Number of products with QCC errors:** 0

## 6.2 Missing QCC Reports

**Number of products with missing QCC reports:** All

# 7. GOP Level 1B Data Quality Check

## 7.1 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

## 7.2 L1B Product Header Analysis

For all products, a series of pre-defined checks are performed 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

## 7.3 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

## 7.4 L1B Auxiliary Correction Error Check

Each product is checked for auxiliary corrections flagged by the ground-station processing chain as missing or containing errors.

**Number of products with errors:** 0

## 7.5 L1B Measurement Confidence Data Check

CryoSat L1B data includes a measurement confidence flag (field 12) for each measurement record. The bit value of this flag indicates any problems when set.

**Number of products with errors:** 5

| Product | Test Failed | Description |
|---|---|---|
| CS_OFFL_SIR_GOP_1B_20150526T014925_20150526T015723_B001 | Power scaling error | There has been an error in the scaling of the L1B waveform |
| CS_OFFL_SIR_GOP_1B_20150526T035613_20150526T041329_B001 | Power scaling error | There has been an error in the scaling of the L1B waveform |
| CS_OFFL_SIR_GOP_1B_20150526T050955_20150526T051944_B001 | Power scaling error | There has been an error in the scaling of the L1B waveform |
| CS_OFFL_SIR_GOP_1B_20150526T170731_20150526T171300_B001 | Power scaling error | There has been an error in the scaling of the L1B waveform |
| CS_OFFL_SIR_GOP_1B_20150526T190754_20150526T191423_B001 | Power scaling error | There has been an error in the scaling of the L1B waveform |

## 7.6 L1B Waveform Group Data Check

CryoSat L1B data includes a waveform data flag (field 65) 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 a large number of products over land, indicating that the tracking echo is missing.

**Number of products with errors:** 23

# 8. GOP Level 2 Data Quality Check

## 8.1 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

## 8.2 L2 Product Header Analysis

For all products, a series of pre-defined checks are performed 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

## 8.3 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

## 8.4 L2 Measurement Confidence Data Check

CryoSat L2 data includes a quality flag (field 14) for each 20-Hz measurement record. The bit value of this flag is an assessment of the measurement quality by the processing chains.

**Number of products with errors:** 0

## 8.5 L2 Range Measurement Check

Each product is checked to detect range measurements flagged by the processing chain as missing or containing errors.

**Ocean Range Averaging Status Flag:** This flag is currently set for products over land and sea ice, but this is to be expected.

**Ice Range Averaging Status Flag:** This flag is currently set for some products over land and continental ice.

**Number of products with errors:** 141

## 8.6 L2 SWH and Backscatter Measurement Check

Each product is checked to detect parameters related to SWH and sigma0 that are flagged by the processing chain as missing or containing errors.

**SWH Averaging Status Flag:** This flag is currently set for products over land and sea ice, but this is to be expected.

**Ocean Backscatter Averaging Status Flag:** This flag is currently set for products over land and sea ice, but this is to be expected.

**Ice Backscatter Averaging Status Flag:** This flag is currently set for some products over land and continental ice.

**Number of products with errors:** 131