

## 1. Overview

<b>Report Production Date:</b>
20-Apr-2015

Data Used:	OFFLINE L1B and L2 Science Data	Geophysical Ocean Products (GOP) L1B and L2 Science Data
<b>Check</b>	<b>Status</b>	<b>Status</b>
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	See Section 5.3	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

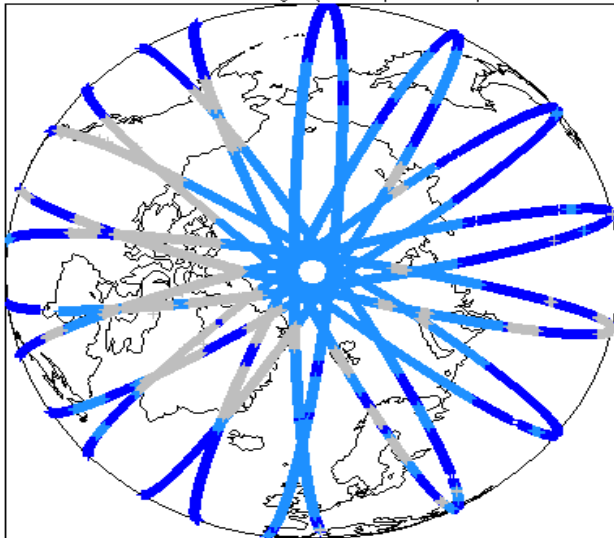
13-Mar-2015	Data generated with new Baseline-C IPFs but old GDR-D orbit files.
14-Mar-2015	Data generated with new Baseline-C IPFs but old GDR-D orbit files.
15-Mar-2015	Data generated with new Baseline-C IPFs but old GDR-D orbit files.

## Report Contents

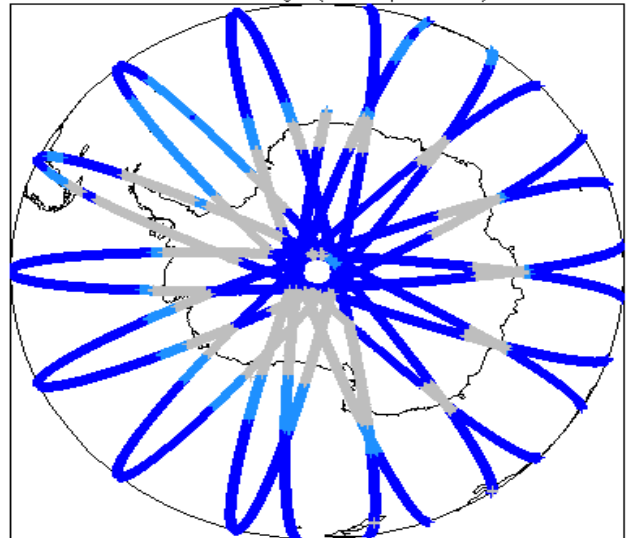
2	Global Coverage	<b>OFFLINE Science Data</b>	4	Level 1B Data Quality Check	<b>GOP Science Data</b>	7	Level 1B Data Quality Check
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## 2. Global Coverage

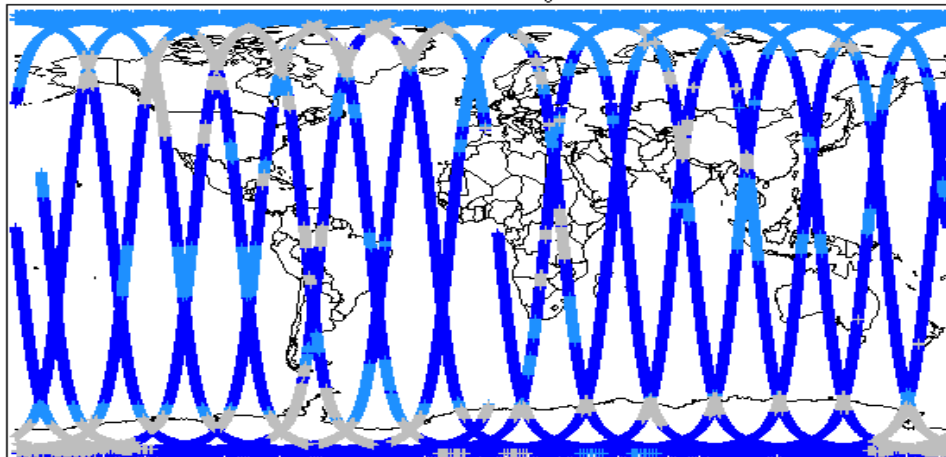
Global Coverage (north pole view)



Global Coverage (south pole view)

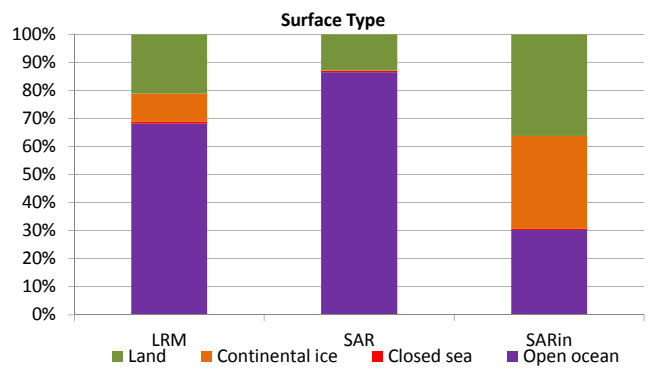
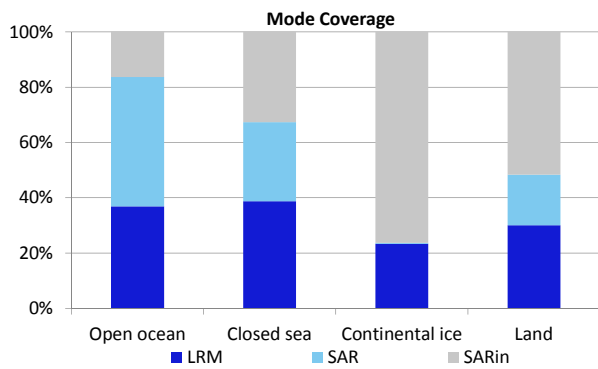


Global Coverage



Mode Coverage (%)

	LRM	66.79
	SAR	20.15
	SIN	12.86



### 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. 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 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

#### 4.4 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: 1

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20150314T144655_20150314T144927_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: 1

Product	AUX File	Comment
CS_OFFL_SIR_GDR_2_20150314T235243_20150315T013157_C001	CS_OPER_AUX_ORBDOR_20150313T215525_20150315T002325_0001	Coverage missing for intervals [2015-03-15T00:23:25, 2015-03-15T01:31:57]

#### 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: 30

Product	Test Failed	Description
CS_OFFL_SIR_SAR_2__20150314T002229_20150314T002443_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T010202_20150314T011124_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T011347_20150314T012113_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T012248_20150314T012401_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T024346_20150314T024925_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T032642_20150314T033305_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T035958_20150314T040200_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T042144_20150314T042816_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T053826_20150314T054715_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T060130_20150314T060739_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T072155_20150314T072344_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T073836_20150314T074120_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T074302_20150314T074716_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T091709_20150314T092759_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T105423_20150314T105522_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T110057_20150314T110845_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T123137_20150314T123725_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T123737_20150314T124015_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T124101_20150314T125130_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T142030_20150314T142759_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T151551_20150314T151858_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T155942_20150314T160503_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T173833_20150314T174539_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T175917_20150314T180703_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T190310_20150314T190502_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T191654_20150314T192210_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T194120_20150314T194150_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T205346_20150314T210243_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T210304_20150314T210550_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2__20150314T223312_20150314T224250_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	18	0	0	0	0
SIR_LRM_1B	166	0	0	0	0
SIR_LRM_2	163	0	0	0	0
SIR_SAR_1B	111	0	0	0	0
SIR_SAR_2A	110	0	0	0	0
SIR_SIN_1B	96	0	0	0	0
SIR_SIN_2	96	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 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

### 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: 1

Product	Test Failed	Description
CS_OFFL_SIR_GOP_1B_20150314T144655_20150314T144927_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: 52

## 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: 232

### 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: 207