

## 1. Overview

<b>Report Production Date:</b>	<b>Data Used:</b>	<b>OFFLINE L1B and L2 Science Data</b>	<b>Geophysical Ocean Products (GOP) L1B and L2 Science Data</b>
12-Jun-2015	<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, 8.4, 8.5 and 8.6

### Mission / Instrument News

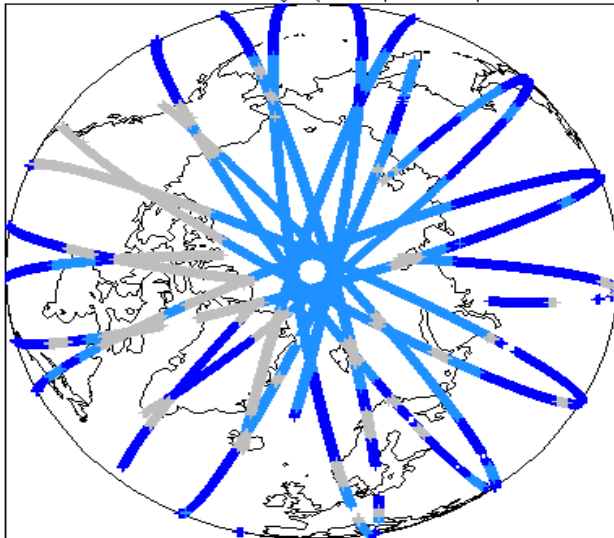
20-Apr-2015	None
21-Apr-2015	None
22-Apr-2015	Nothing planned

## Report Contents

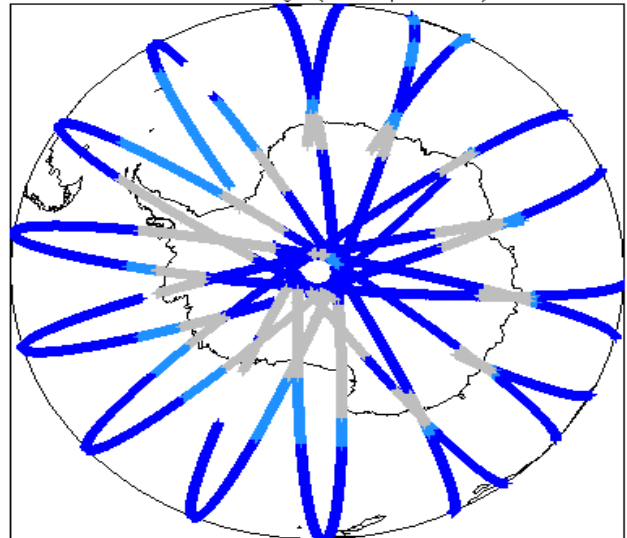
2	Global Coverage	<b>OFFLINE Science Data</b>	<b>GOP Science Data</b>
3	Instrument Configuration	4	Level 1B Data Quality Check
		4.1	L1B Product Format Check
		4.2	L1B Product Header Analysis
		4.3	L1B Auxiliary Data File Usage Check
		4.4	L1B Auxiliary Correction Error Check
		4.5	L1B Measurement Confidence Data Check
		5	Level 2 Data Quality Check
		5.1	L2 Product Format Check
		5.2	L2 Product Header Analysis
		5.3	L2 Auxiliary Data File Usage Check
		5.4	L2 Auxiliary Correction Error Check
		5.5	L2 Measurement Quality Flag Check
		6	QCC Check
		6.1	QCC Errors
		6.2	Missing QCC Reports
		7	Level 1B Data Quality Check
		7.1	L1B Product Format Check
		7.2	L1B Product Header Analysis
		7.3	L1B Auxiliary Data File Usage Check
		7.4	L1B Auxiliary Correction Error Check
		7.5	L1B Measurement Confidence Data Check
		7.6	L1B Waveform Group Data Check
		8	Level 2 Data Quality Check
		8.1	L2 Product Format Check
		8.2	L2 Product Header Analysis
		8.3	L2 Auxiliary Data File Usage Check
		8.4	L2 Measurement Confidence Data Check
		8.5	L2 Range Measurement Check
		8.6	L2 SWH and Backscatter Measurement Check

## 2. Global Coverage

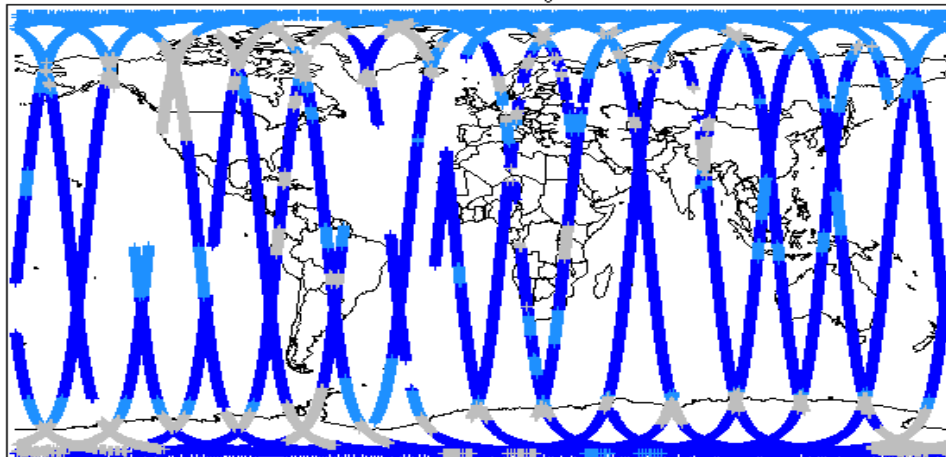
Global Coverage (north pole view)



Global Coverage (south pole view)

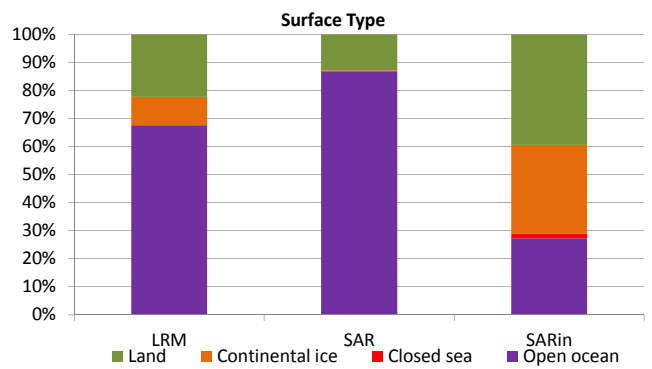
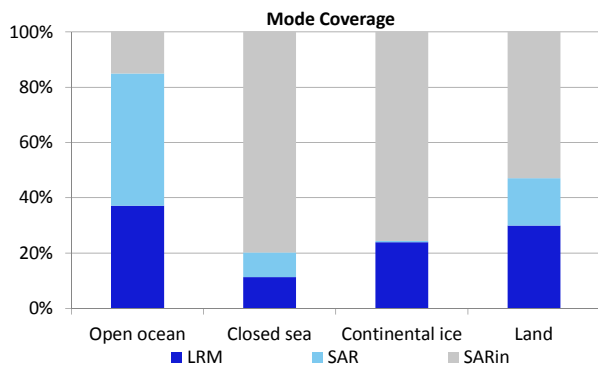


Global Coverage



Mode Coverage (%)

	LRM	67.53
	SAR	19.28
	SIN	12.97



### 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: 4

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20150421T011856_20150421T013627_C001	Echo error	The tracking echo has returned an error
CS_OFFL_SIR_LRM_1B_20150421T152936_20150421T153344_C001	Echo error	The tracking echo has returned an error
CS_OFFL_SIR_LRM_1B_20150421T165840_20150421T170630_C001	Echo error	The tracking echo has returned an error
CS_OFFL_SIR_LRM_1B_20150421T204011_20150421T204555_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_20150421T230627_20150422T004540_C001	CS_OPER_AUX_ORBDOR_20150420T215525_20150422T002325_0001	Coverage missing for intervals [2015-04-22T00:23:25, 2015-04-22T00:45:40]

#### 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: 40

Product	Test Failed	Description
CS_OFFL_SIR_SAR_2_20150421T001203_20150421T001415_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T001800_20150421T002412_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T002437_20150421T002547_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T002610_20150421T002832_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T010034_20150421T010733_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T015552_20150421T020244_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T033810_20150421T034213_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T034807_20150421T034856_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T050018_20150421T050049_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T060255_20150421T060432_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T065415_20150421T065610_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T065627_20150421T070153_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T074201_20150421T074405_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T083456_20150421T083509_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T083535_20150421T084328_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T092102_20150421T092354_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T100653_20150421T100827_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T101356_20150421T102315_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T102320_20150421T102405_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T102411_20150421T102634_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T115503_20150421T120253_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T125056_20150421T125346_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T142925_20150421T143425_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T144853_20150421T145105_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T150554_20150421T150710_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T151008_20150421T151101_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T151314_20150421T152002_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T164435_20150421T164653_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T171342_20150421T171406_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T182949_20150421T183949_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T192755_20150421T192944_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T200729_20150421T201505_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T201530_20150421T202022_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T205545_20150421T205626_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T214356_20150421T214457_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T214516_20150421T215432_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T215456_20150421T215504_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T215529_20150421T215625_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T224522_20150421T224808_C001	Peakiness error	There is an error in the peakiness derivation
CS_OFFL_SIR_SAR_2_20150421T232524_20150421T233611_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	36	0	0	0	0
SIR_LRM_1B	144	0	0	0	0
SIR_LRM_2	140	0	0	0	0
SIR_SAR_1B	117	0	0	0	0
SIR_SAR_2A	102	0	0	0	0
SIR_SIN_1B	92	0	0	0	0
SIR_SIN_2	91	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: 4

Product	Test Failed	Description
CS_OFFL_SIR_GOP_1B_20150421T011856_20150421T013627_B001	Power scaling error	There has been an error in the scaling of the L1B waveform
CS_OFFL_SIR_GOP_1B_20150421T152936_20150421T153344_B001	Power scaling error	There has been an error in the scaling of the L1B waveform
CS_OFFL_SIR_GOP_1B_20150421T165840_20150421T170630_B001	Power scaling error	There has been an error in the scaling of the L1B waveform
CS_OFFL_SIR_GOP_1B_20150421T204011_20150421T204555_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: 47

## 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: 2

Product	Test Failed	Description
CS_OFFL_SIR_GOP_2_20150421T011856_20150421T013627_B001	Power scaling error	There has been an error in the scaling of the L1B waveform
CS_OFFL_SIR_GOP_2_20150421T204011_20150421T204555_B001	Power scaling error	There has been an error in the scaling of the L1B waveform

### 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: 242

### 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: 225