1. Overview

Report Production Date:	22-Feb-2017
Processor Used:	CryoSat Ocean Processor
Data Used:	Geophysical Ocean Products (GOP) L1B and L2 Science 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
Auxiliary Data File Usage Check	Nominal
Auxiliary Correction Error Check	See Section 5.4
Measurement Confidence Data Check	See Section 4.6, 5.6, 5.7 and 5.8

Mission / Instrument News	
21-Jan-2017	None
22-Jan-2017	None
23-Jan-2017	Nothing planned

2. Global Coverage

Global Coverage - North Pole

Global Coverage - South Pole

Mode Coverage

(red)	LRM
(blue)	SAR
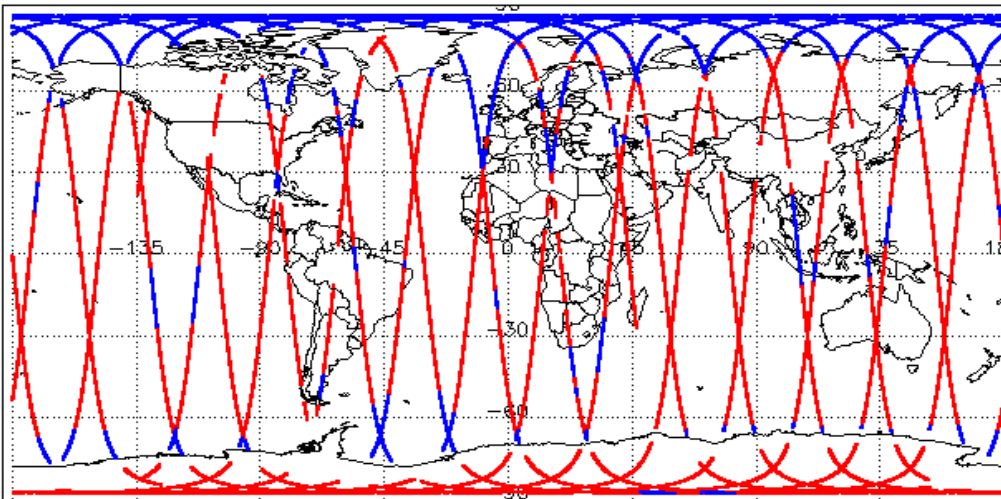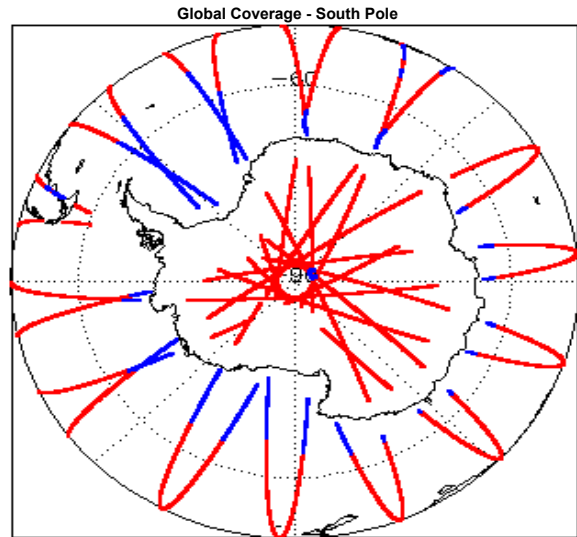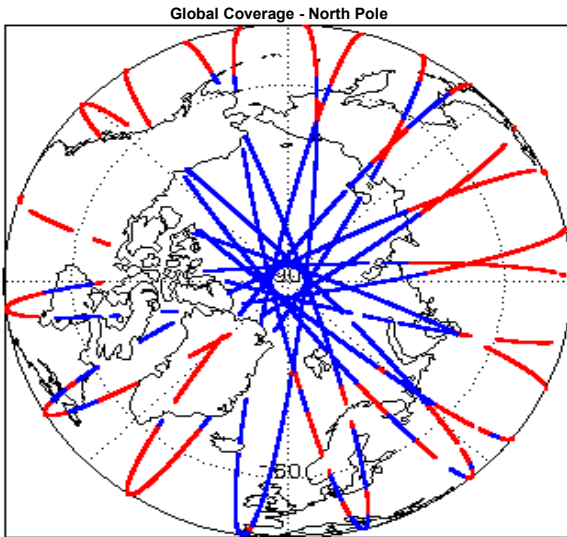
3. Instrument Configuration

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

SIRAL instrument(s) in use:	SIRAL - A

4. GOP 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

CryoSat L1B data includes a correction error flag (field 60) for each measurement record. The bit value of this flag indicates any problems when set.

Number of products with errors: 0

4.5 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: 0

4.6 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 products over land, but this is to be expected.

Number of products with errors: 11

Product	Test Failed	Description
CS_OFFL_SIR_GOP_1B_20170122T001823_20170122T002023_B001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_GOP_1B_20170122T002925_20170122T003731_B001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_GOP_1B_20170122T032212_20170122T033447_B001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_GOP_1B_20170122T094254_20170122T094342_B001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_GOP_1B_20170122T133612_20170122T133657_B001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_GOP_1B_20170122T151848_20170122T152809_B001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_GOP_1B_20170122T153031_20170122T153756_B001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_GOP_1B_20170122T174326_20170122T174946_B001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_GOP_1B_20170122T181846_20170122T182808_B001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_GOP_1B_20170122T185255_20170122T185520_B001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_GOP_1B_20170122T185520_20170122T190724_B001	Loss of Echo	The tracking echo is missing for one or more records

5. GOP 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.

Wind Model File Usage: This file is currently not included in all L2 products.

Number of products with errors: 0

5.4 L2 Auxiliary Correction Error Check

For all products, the auxiliary corrections within the Geophysical Group are checked for the default error value (32767).

Currently, there are two common auxiliary correction errors raised in the Level 2 products which are expected due to surface type. All common flags are summarised in the list below, followed by a table highlighting any additional issues which may arise from this test.

Sea State Bias Error: The error value is currently set for products over land and sea ice, but this is to be expected.

Altimetric Wind Speed Error: The error value is currently set for products over land and sea ice, but this is to be expected.

Number of products with errors: 10

Product	Test Failed	Description
CS_OFFL_SIR_GOP_2__20170121T234926_20170122T001823_B001	Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records
CS_OFFL_SIR_GOP_2__20170122T001824_20170122T002023_B001	Total Geocentric Ocean Tide (FES)	There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) for one or more records
CS_OFFL_SIR_GOP_2__20170122T065629_20170122T065816_B001	Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records
CS_OFFL_SIR_GOP_2__20170122T065932_20170122T070102_B001	Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records
CS_OFFL_SIR_GOP_2__20170122T070711_20170122T071355_B001	Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records
CS_OFFL_SIR_GOP_2__20170122T120918_20170122T121352_B001	Total Geocentric Ocean Tide (FES)	There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) for one or more records
CS_OFFL_SIR_GOP_2__20170122T124319_20170122T124922_B001	Mean Sea Surface (1), Mean Sea Surface (2)	There is an error with the Mean Sea Surface height (solutions 1 and 2) for one or more records
CS_OFFL_SIR_GOP_2__20170122T135214_20170122T135550_B001	Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records

CS_OFFL_SIR_GOP_2__20170122T153031_20170122T153756_B001	Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records
CS_OFFL_SIR_GOP_2__20170122T173023_20170122T174326_B001	Total Geocentric Ocean Tide (FES)	There is an error with the Total Geocentric Ocean Tide height (solution 2: FES) for one or more records

5.5 L2 Measurement Confidence Data Check

CryoSat L2 data includes a measurement confidence flag (field 14) for each 20-Hz measurement record. The bit value of this flag indicates any problems when set.

Number of products with errors: 0

5.6 L2 Range Measurement Check

CryoSat L2 data includes an Ocean (field 25) and Ice (field 30) Range Averaging Status flag for each measurement record. The bit value of this flag indicates any problems when set.

Currently, there are two common status flags raised in the Level 2 products which are expected due to surface type. All common flags are summarised in the list below, followed by a table highlighting any additional issues which may arise from this test.

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 products over land, but this is to be expected.

Number of products with errors: 31

Product	Test Failed	Description
CS_OFFL_SIR_GOP_2__20170122T012102_20170122T012624_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records
CS_OFFL_SIR_GOP_2__20170122T025955_20170122T030105_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T030111_20170122T030518_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T043501_20170122T044003_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T044009_20170122T044016_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T044016_20170122T044023_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T044023_20170122T044334_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T052340_20170122T052657_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T061920_20170122T061932_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T061938_20170122T062108_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T075811_20170122T075818_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T075836_20170122T075846_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T075852_20170122T075954_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T093348_20170122T093728_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T093735_20170122T093744_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T093749_20170122T094053_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T111130_20170122T111642_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T111648_20170122T112016_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T125129_20170122T125715_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T125737_20170122T125917_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T143057_20170122T143608_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T161252_20170122T161510_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T175221_20170122T175418_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T175552_20170122T175921_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T184616_20170122T184758_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T193045_20170122T193342_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T193349_20170122T193822_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T210852_20170122T211721_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T215825_20170122T215922_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T224817_20170122T224942_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T225104_20170122T225521_B001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.

5.7 L2 SWH and Backscatter Measurement Check

CryoSat L2 data includes a SWH Averaging Status flag (field 49) and an Ocean (field 55) and Ice (field 61) Backscatter Averaging Status flag for each measurement record. The bit value of this flag indicates any problems when set.

Currently, there are three common status flags raised in the Level 2 products which are expected due to surface type. All common flags are summarised in the list below, followed by a table highlighting any additional issues which may arise from this test.

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 products over land, but this is to be expected.

Number of products with errors: 25

Product	Test Failed	Description
CS_OFFL_SIR_GOP_2__20170122T025955_20170122T030105_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T030111_20170122T030518_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T043501_20170122T044003_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T044009_20170122T044016_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T044023_20170122T044334_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T061920_20170122T061932_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T061938_20170122T062108_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T075811_20170122T075818_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T075852_20170122T075954_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T093348_20170122T093728_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T093749_20170122T094053_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T111648_20170122T112016_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T125129_20170122T125715_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T125737_20170122T125917_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T143057_20170122T143608_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T161252_20170122T161510_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T175221_20170122T175418_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T175552_20170122T175921_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T184616_20170122T184758_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T193045_20170122T193342_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T193349_20170122T193822_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T210852_20170122T211721_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T215825_20170122T215922_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T224817_20170122T224942_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_GOP_2__20170122T225104_20170122T225521_B001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.

5.8 L2 Ocean Retracking Quality Check

CryoSat L2 data includes an ocean retracking quality flag (field 19) for each 20-Hz measurement record. The bit value of this flag indicates any problems when set.

Ocean Retracking Quality Flag: This flag is currently set for products over land and sea ice, but this is to be expected. The number of products with this error flag set is given below.

Number of products with errors: 156

6. GOP QCC Report Analysis

The Quality Control for CryoSat (QCC) facility 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.

Product type	No. Products	No. QCC Reports	No. Valid	No. Warnings	No. Errors
SIR_GOP_1B	270	270	270	0	0
SIR_GOP_2	263	263	263	0	0

6.1 QCC Errors

Number of products with QCC errors: 0

6.2 QCC Warnings

Number of QCC reports with warnings   0

6.3 Missing QCC Reports

Number of products with missing QCC reports: 0