1. Overview

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	**See Section 5.3**
Auxiliary Correction Check	**See Section 4.4 and 5.4**
Measurement Data Set Check	**See Section 4.5**

Report Production Date:	18-Sep-2013
Data Used:	OFFLINE L1B and L2 Science Data

Mission / Instrument News	
27-Jul-2013	None
28-Jul-2013	None
29-Jul-2013	Nothing planned

2. Global Coverage

Global Coverage (north pole view)

Global Coverage (south pole view)

Global Coverage
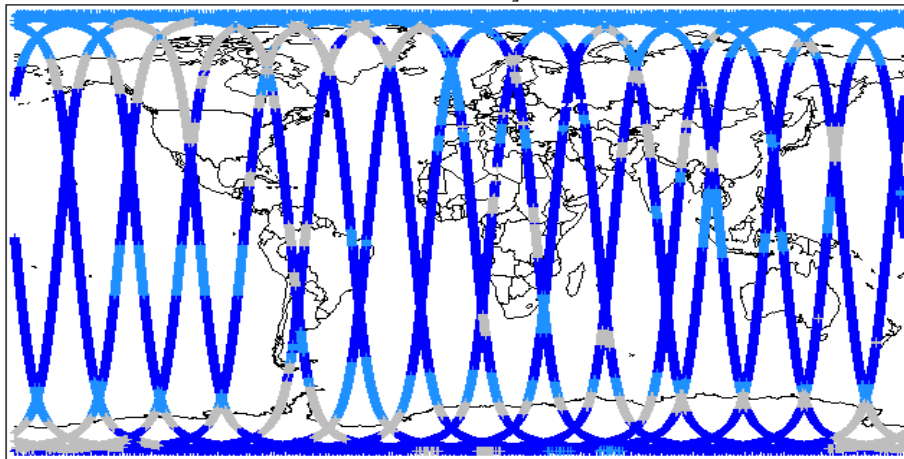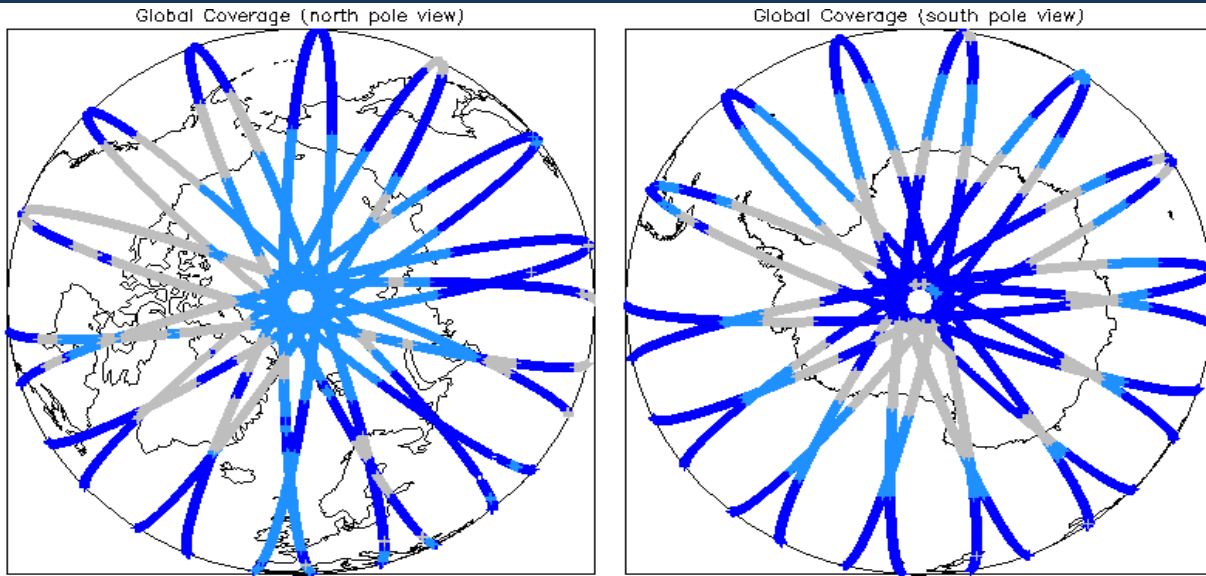
Mode Coverage(%)	
LRM	65.20
SAR	20.40
SIN	14.23

Mode Coverage

Surface Type
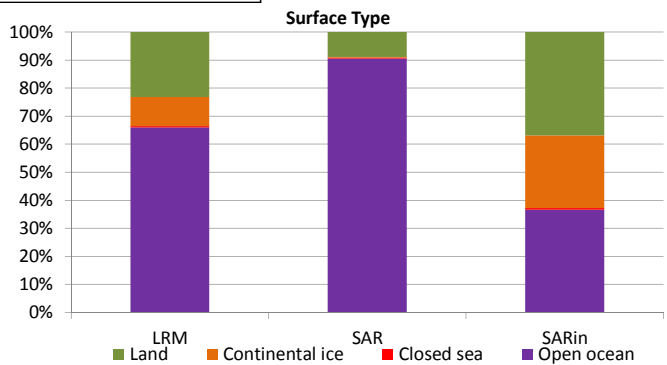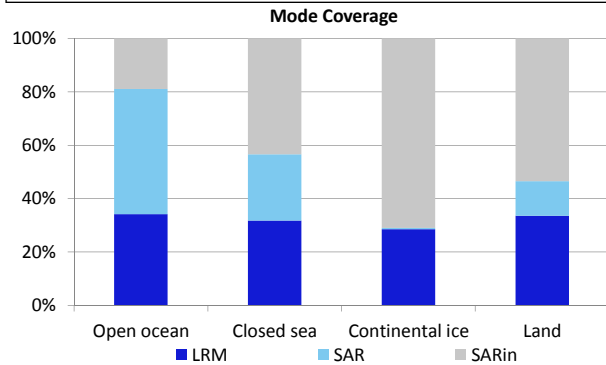
3. Instrument Configuration

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

SIRAL instrument(s) in use:	**SIRAL - A**
Star Tracker(s) in use:	**Star Tracker 1**

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 L1B Auxiliary Data File Usage Check

Each product is checked for missing Data Set Descriptors wrt 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 Flagged Auxiliary Correction Error Check

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

Number of products with errors: 4

Product	Test Failed
CS_OFFL_SIR_LRM_1B_20130728T055405_20130728T061527_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_SAR_1B_20130727T235756_20130728T000201_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_SAR_1B_20130728T115953_20130728T120521_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_SAR_1B_20130728T175924_20130728T180514_B001	Dynamic atmosphere correction error

4.5 L1B Measurement Confidence Data Check

CryoSat L1B data includes a measurement confidence flag word (field 14) for each measurement record. The bit value of this flag indicates any problems when set.

Number of products with errors: 16

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20130728T000325_20130728T001137_B001	TRK echo error	The tracking echo has returned an error
CS_OFFL_SIR_LRM_1B_20130728T014633_20130728T015314_B001	TRK echo error	The tracking echo has returned an error
CS_OFFL_SIR_LRM_1B_20130728T033116_20130728T034915_B001	TRK echo error	The tracking echo has returned an error
CS_OFFL_SIR_LRM_1B_20130728T091247_20130728T092746_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_LRM_1B_20130728T112506_20130728T112921_B001	TRK echo error	The tracking echo has returned an error
CS_OFFL_SIR_LRM_1B_20130728T144023_20130728T144145_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_LRM_1B_20130728T150239_20130728T151820_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_LRM_1B_20130728T152349_20130728T153334_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_LRM_1B_20130728T154118_20130728T154703_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_LRM_1B_20130728T195547_20130728T200256_B001	TRK echo error	The tracking echo has returned an error
CS_OFFL_SIR_LRM_1B_20130728T205032_20130728T210257_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_SAR_1B_20130728T092746_20130728T092948_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_SAR_1B_20130728T143936_20130728T144023_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_SAR_1B_20130728T151820_20130728T152349_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_SAR_1B_20130728T210258_20130728T210438_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_SIN_1B_20130728T153732_20130728T154118_B001	Attitude correction missing	The attitude has not been corrected

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 wrt 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_2A_20130727T233426_20130728T011340_B001	CS_OPER_AUX_ORBDOR_20130726T215525_20130728T002325_0001	Coverage missing for intervals [2013-07-28T00:23:25, 2013-07-28T01:13:40]

5.4 L2 Flagged Auxiliary Correction Error Check

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

Number of products with errors: 5

Product	Test Failed
CS_OFFL_SIR_LRM_2__20130728T055405_20130728T061527_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_LRM_2__20130728T195547_20130728T200256_B001	Error in MSS/Geoid, and Ocean Depth Land Elevation model, correction computations
CS_OFFL_SIR_SAR_2A_20130727T235757_20130728T000201_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_SAR_2A_20130728T115953_20130728T120521_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_SAR_2A_20130728T175924_20130728T180514_B001	Dynamic atmosphere correction error

5.5 L2 Measurement Quality Flag Check

CryoSat L2 data includes a quality flag word (field 43) for each 20-Hz measurement record. The bit value of this flag is an assessment of the measurement quality by the ground-segment processing chains

Presently, there are several common data Quality Flag errors raised by the Level 2 products which are either expected due to changes made to the IPF processor in Baseline B or else are due to known issues with the data processors. The investigation of the known issues are on-going and are due to be resolved with the next update of the Level 2 processors. All common known issues are summarised in the list below, followed by a table highlighting any additional issues which may arise from this test.

Freeboard Error: This Quality Flag is correctly set in all products as this parameter is currently not provided in the L2 products and the Freeboard value is presently set to the default value of -9999.

SARin x-track angle error: Currently there is an on-going investigation into the high number of errors from the 'SARin x-track Error' Quality Flag over Antarctica.

Height error and Backscatter error: It has been noted that the number of errors arising from the 'Backscatter Error' and 'Height Error' Quality Flag is much higher than expected over land areas and this is currently part of an on-going investigation by expert teams.

Number of products with errors: 0

6. 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	15	0	15	0
SIR_LRM_1B	137	137	101	36	0
SIR_LRM_2	137	137	1	136	0
SIR_SAR_1B	99	106	0	106	0
SIR_SAR_2A	99	105	4	101	0
SIR_SIN_1B	104	111	0	111	0
SIR_SIN_2	111	111	0	111	0

6.1 QCC Errors

Number of products with QCC errors: 0

6.2 Missing QCC Reports

Number of products with missing QCC reports: 4

Product name
CS_OFFL_SIR_GDR_2A_20130727T233426_20130728T011340_B001
CS_OFFL_SIR_GDR_2A_20130728T160642_20130728T174556_B001
CS_OFFL_SIR_SAR_1B_20130727T235756_20130728T000201_B001
CS_OFFL_SIR_SAR_2A_20130727T235757_20130728T000201_B001