## 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 4.5 and 5.4
Measurement Data Set Check	See Section 4.6 and 5.5

Report Production Date:	04-Jul-2013
Data Used:	OFFLINE L1B and L2 Science Data

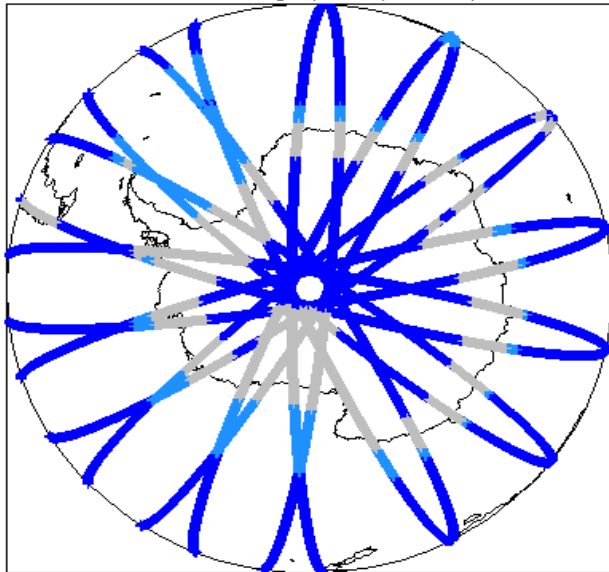| Mission / Instrument News	
18-Apr-2013	None
19-Apr-2013	None
20-Apr-2013	Nothing planned

2. Global Coverage

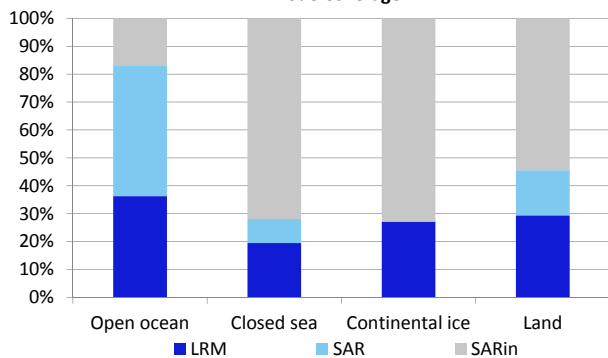Global Coverage (north pole view)
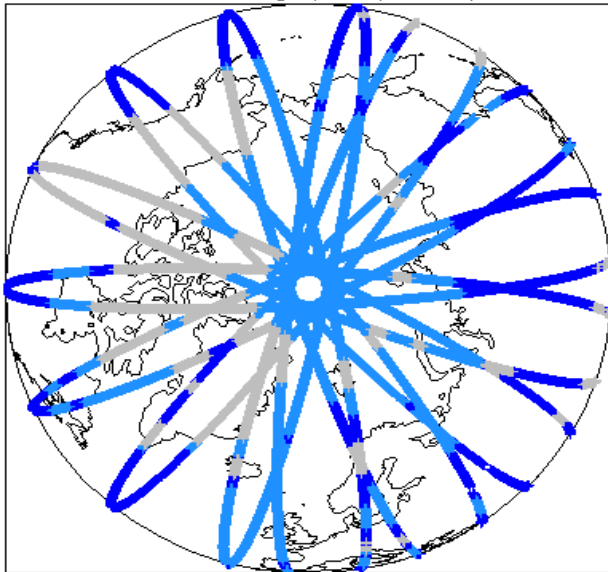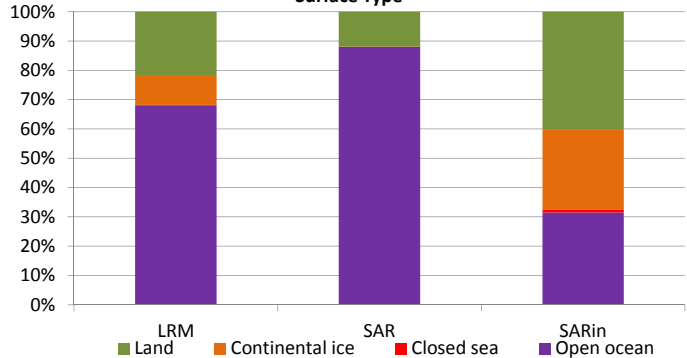
Global Coverage (south pole view)

Global Coverage
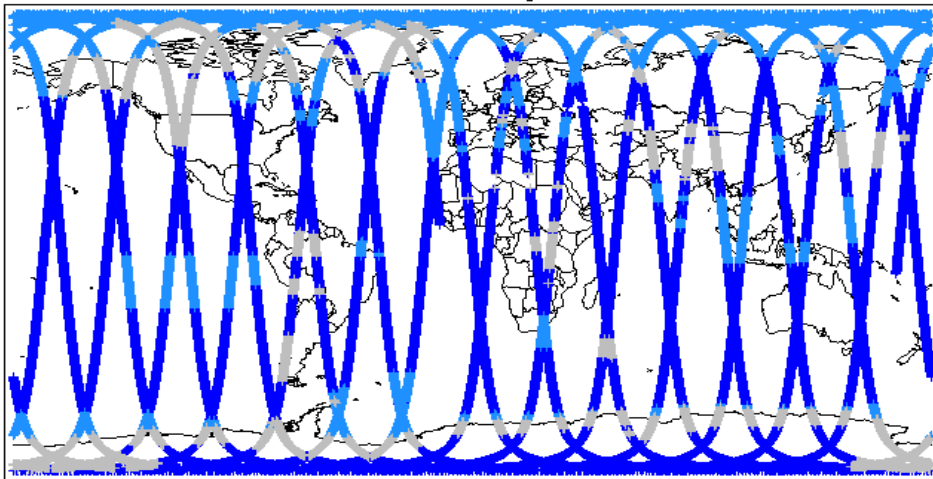
Mode Coverage(%)		
	LRM	64.68
	SAR	21.62
	SIN	13.52

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 2

4. Level 1B Data Quality Check

4.1 L1B Software Version Check

N.b. There were a number of orders processed prior to the installation of the new IPF1 Vk2.0, IPF2 Vk1.0. The affected L1B products, listed below, have the old software version referenced in the product header.

Number of products with errors: 0

4.2 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

4.3 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

4.4 L1B Auxilary 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

4.5 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_20130418T235401_20130419T000635_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_LRM_1B_20130419T054309_20130419T060214_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_LRM_1B_20130419T175140_20130419T181321_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_SAR_1B_20130419T115031_20130419T120153_B001	Dynamic atmosphere correction error

4.6 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: 15

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20130419T151802_20130419T151905_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_LRM_1B_20130419T152740_20130419T153851_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_LRM_1B_20130419T153859_20130419T153911_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_LRM_1B_20130419T154125_20130419T154352_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_LRM_1B_20130419T154530_20130419T154955_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_LRM_1B_20130419T155443_20130419T155902_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_LRM_1B_20130419T163505_20130419T163720_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_LRM_1B_20130419T170423_20130419T172037_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_LRM_1B_20130419T211932_20130419T212636_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_SAR_1B_20130419T155914_20130419T155948_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_SAR_1B_20130419T170205_20130419T170423_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_SIN_1B_20130419T090057_20130419T090201_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_SIN_1B_20130419T151906_20130419T152025_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_SIN_1B_20130419T163721_20130419T164057_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_SIN_1B_20130419T212637_20130419T212758_B001	Attitude correction missing	The attitude has not been corrected

5. Level 2 Data Quality Check

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_20130419T230640_20130420T004554_B001	CS_OPER_AUX_ORBDOR_20130418T215525_20130420T002325_0001	Coverage missing for intervals [2013-04-20T00:23:25, 2013-04-20T00:45:53]

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__20130418T235401_20130419T000635_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_LRM_2__20130419T054309_20130419T060214_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_LRM_2__20130419T175140_20130419T181321_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_SAR_2A_20130419T115031_20130419T120152_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_SIN_2__20130419T090057_20130419T090201_B001	Error in MSS/Geoid, and Ocean Depth Land Elevation model, correction computations

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: 9

Product	Test Failed	Description
CS_OFFL_SIR_LRM_2__20130419T170423_20130419T172037_B001	Calibration warning	The Cal correction is missing or has been taken from the IPFDB as opposed to the Calibration products
CS_OFFL_SIR_SIN_2__20130419T151906_20130419T152025_B001	Calibration warning	The Cal correction is missing or has been taken from the IPFDB as opposed to the Calibration products
CS_OFFL_SIR_SIN_2__20130419T153852_20130419T153859_B001	Calibration warning	The Cal correction is missing or has been taken from the IPFDB as opposed to the Calibration products
CS_OFFL_SIR_SIN_2__20130419T153911_20130419T154125_B001	Calibration warning	The Cal correction is missing or has been taken from the IPFDB as opposed to the Calibration products
CS_OFFL_SIR_SIN_2__20130419T154353_20130419T154530_B001	Calibration warning	The Cal correction is missing or has been taken from the IPFDB as opposed to the Calibration products
CS_OFFL_SIR_SIN_2__20130419T154955_20130419T155443_B001	Calibration warning	The Cal correction is missing or has been taken from the IPFDB as opposed to the Calibration products
CS_OFFL_SIR_SIN_2__20130419T155903_20130419T155914_B001	Calibration warning	The Cal correction is missing or has been taken from the IPFDB as opposed to the Calibration products
CS_OFFL_SIR_SIN_2__20130419T155948_20130419T160202_B001	Calibration warning	The Cal correction is missing or has been taken from the IPFDB as opposed to the Calibration products
CS_OFFL_SIR_SIN_2__20130419T163721_20130419T164057_B001	Calibration warning	The Cal correction is missing or has been taken from the IPFDB as opposed to the Calibration products

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	16	0	16	0
SIR_LRM_1B	153	152	112	39	1
SIR_LRM_2	152	151	0	151	0
SIR_SAR_1B	162	162	0	162	0
SIR_SAR_2A	104	104	6	98	0
SIR_SIN_1B	103	103	0	103	0
SIR_SIN_2	98	98	0	98	0

6.1 QCC Errors

Number of products with QCC errors: 1

Test Description Key:

Abbreviation	Test name	Details
RRTAISSOB	RangeRecordTAIStartStopOrBlank	The time value should be between the record TAI start/stop times of the SPH

QCC Errors: See the following report.

Product Type	Product Start Time	Error
SIR_LRM_1B	CS_OPER_AUX_REP_QC_20130521T103110_SIR_LRM_1B20130419T090202.EEF	RRTAISSOB

6.2 Missing QCC Reports

Number of products with missing QCC reports: 3

Product name
CS_OFFL_SIR_GDR_2A_20130418T235731_20130419T013644_B001
CS_OFFL_SIR_LRM_1B_20130418T235401_20130419T000635_B001
CS_OFFL_SIR_LRM_2__20130418T235401_20130419T000635_B001