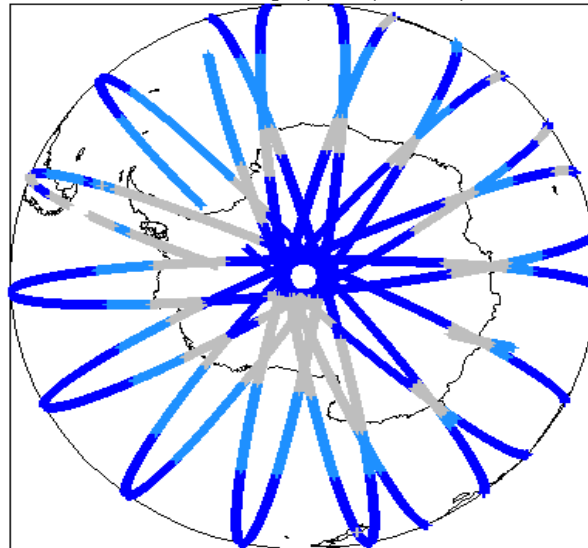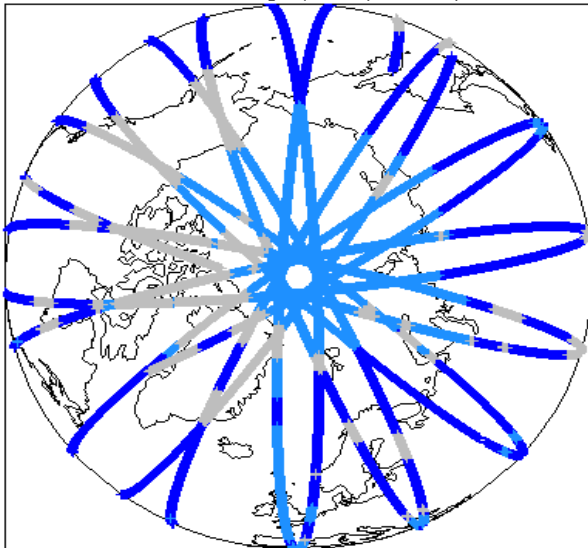## 1. Overview

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 and 5.5

Report Production Date:	08-May-2013
Data Used:	OFFLINE L1B and L2 Science Data

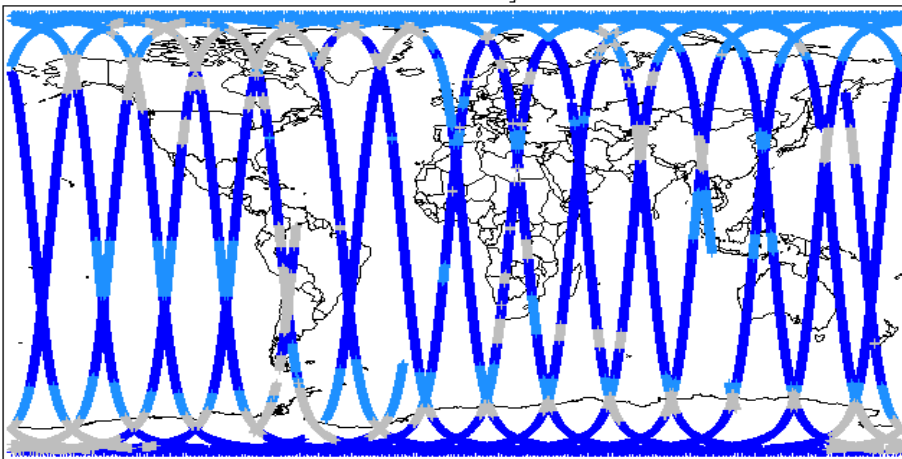| Mission / Instrument News	
28-Aug-2012	None
29-Aug-2012	None
30-Aug-2012	Nothing planned

2. Global Coverage

Global Coverage (north pole view)

Global Coverage (south pole view)

Global Coverage

Mode Coverage(%)		
	LRM	64.70
	SAR	20.48
	SIN	14.65

Mode Coverage

LRM   SAR   SARin

Open ocean   Closed sea   Continental ice   Land

Surface Type

Land   Continental ice   Closed sea   Open ocean

LRM   SAR   SARin
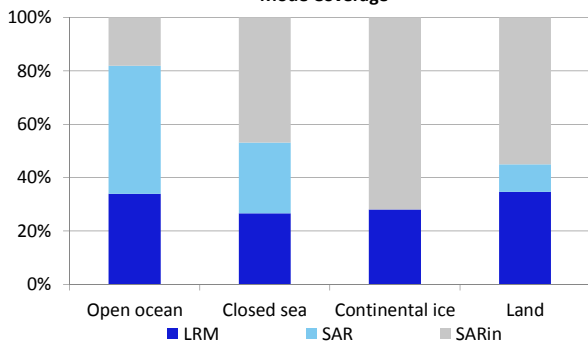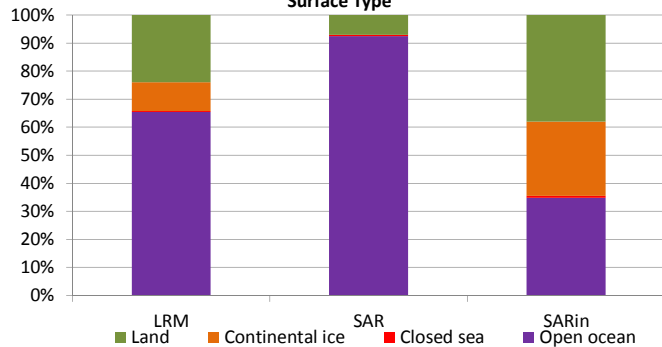
3. Instrument Configuration

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 L1 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 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

4.4 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_20120829T115350_20120829T121935_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_LRM_1B_20120829T174813_20120829T180719_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_SAR_1B_20120828T235845_20120829T000524_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_SIN_1B_20120829T055931_20120829T060357_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: 4

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20120829T042856_20120829T044329_B001	TRK echo error	The tracking echo has returned an error
CS_OFFL_SIR_LRM_1B_20120829T060601_20120829T060919_B001	TRK echo error	The tracking echo has returned an error
CS_OFFL_SIR_LRM_1B_20120829T141913_20120829T142704_B001	TRK echo error	The tracking echo has returned an error
CS_OFFL_SIR_SIN_1B_20120829T224928_20120829T224936_B001	Cal1. correction missing	The Cal1 correction has not been applied

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 binary 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: 2

Product	AUX File	Comment
CS_OFFL_SIR_GDR_2A_20120828T225526_20120829T003440_B001	CS_OPER_AUX_ORBDOR_20120827T215525_20120829T002325_0001	Coverage missing for intervals [2012-08-29T00:23:25, 2012-08-29T00:34:40]
CS_OFFL_SIR_GDR_2A_20120829T234350_20120830T012303_B001	CS_OPER_AUX_ORBDOR_20120828T215525_20120830T002325_0001	Coverage missing for intervals [2012-08-30T00:23:25, 2012-08-30T01:23:03]

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: 4

Product	Test Failed
CS_OFFL_SIR_LRM_2__20120829T115350_20120829T121935_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_LRM_2__20120829T174813_20120829T180719_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_SAR_2A_20120828T235845_20120829T000524_B001	Dynamic atmosphere correction error
CS_OFFL_SIR_SIN_2__20120829T055931_20120829T060357_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: 1

Product	Test Failed	Description
CS_OFFL_SIR_SIN_2__20120829T224928_20120829T224936_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	17	16	0	16	0
SIR_LRM_1B	121	121	107	14	0
SIR_LRM_2	117	121	0	121	0
SIR_SAR_1B	89	87	0	87	0
SIR_SAR_2A	89	88	4	84	0
SIR_SIN_1B	109	103	0	103	0
SIR_SIN_2	107	109	0	109	0

6.1 QCC Errors

Number of products with QCC errors: 0

6.2 Missing QCC Reports

Number of products with missing QCC reports: 10

Product name
CS_OFFL_SIR_GDR_2A_20120828T225526_20120829T003440_B001
CS_OFFL_SIR_SAR_1B_20120828T235845_20120829T000524_B001
CS_OFFL_SIR_SAR_1B_20120829T023331_20120829T024015_B001
CS_OFFL_SIR_SAR_2A_20120828T235845_20120829T000524_B001
CS_OFFL_SIR_SIN_1B_20120829T014928_20120829T015044_B001
CS_OFFL_SIR_SIN_1B_20120829T024248_20120829T024456_B001
CS_OFFL_SIR_SIN_1B_20120829T030236_20120829T030450_B001
CS_OFFL_SIR_SIN_1B_20120829T031957_20120829T032116_B001
CS_OFFL_SIR_SIN_1B_20120829T032207_20120829T032533_B001
CS_OFFL_SIR_SIN_1B_20120829T033331_20120829T033518_B001