

## 1. Overview

<b>Report Production Date:</b>	10-Jun-2013
<b>Data Used:</b>	L1 and L2 Fast Delivery Marine Mode (FDM), and CAL Data

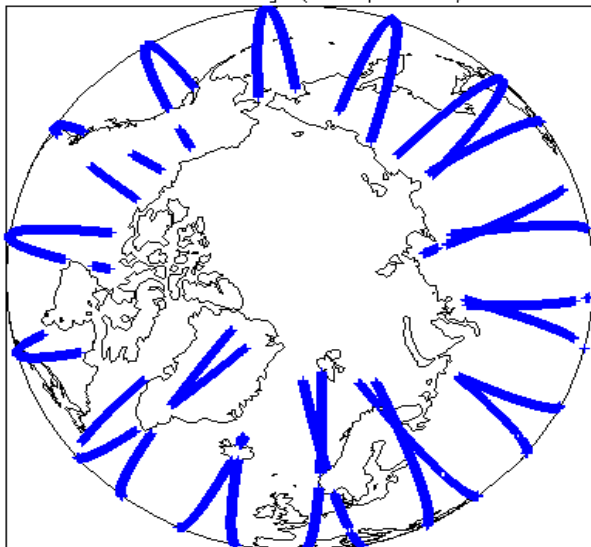
Check	Status
Server check: science-pds.cryosat.esa.int	Nominal
Server check: calval-pds.cryosat.esa.int	Nominal
Product Software Check	Nominal
Product Format Check	Nominal
Product Header Analysis	Nominal
Auxiliary Data File Usage	See Section 5.3 and 6.3
Correction Error Flags	See Sections 5.4 and 6.4
Measurement Confidence Flags	See Sections 5.5, 6.5, 6.6, 6.7 and 6.8

### Mission / Instrument News

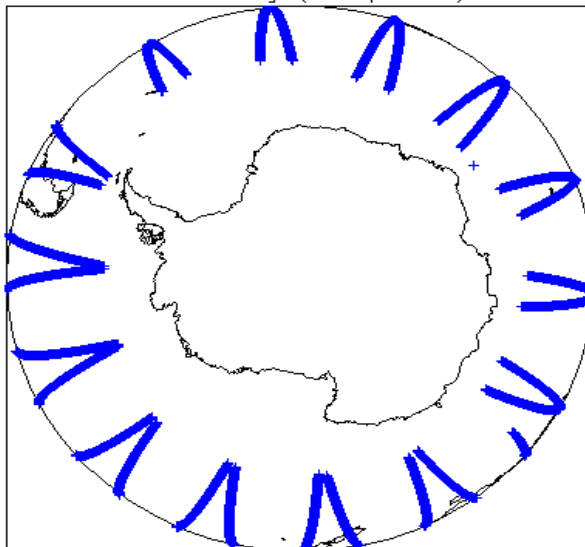
06-Jun-2013	SIRAL unavailability from 06-Jun-2013 05:10:48 to 06:57:54 due to a planned orbit manoeuvre.
07-Jun-2013	None
08-Jun-2013	Nothing planned

## 2. Global Coverage

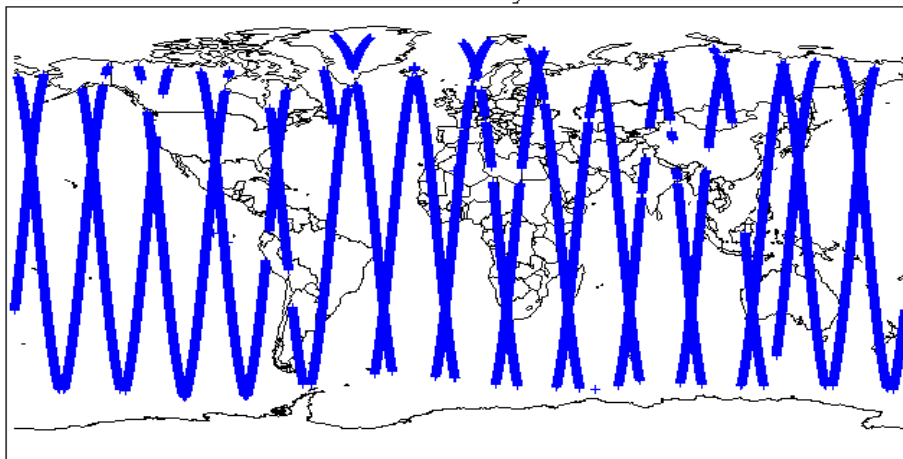
Global Coverage (north pole view)



Global Coverage (south pole view)



Global Coverage



## 3. Instrument Configuration

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

<b>SIRAL instrument(s) in use:</b>	SIRAL - A
<b>Star Tracker(s) in use:</b>	Star Tracker 1

## 4. Level 1B Calibration Data Quality Check

### 4.1 L1 CAL 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

### 4.2 L1 CAL 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 processing chain.

Number of products with errors: 0

### 4.3 L1 CAL 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 L1 CAL Measurement Confidence Flags

CryoSat Cal1 and Cal2 data includes a measurement confidence flag word (field 11) for each measurement record. The bit value of this flag indicates any problems when set.

Number of products with errors: 0

## 5. Level 1B FDM Data Quality Check

### 5.1 L1B FDM 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 L1B FDM 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 L1B FDM 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: All

Product	AUX File	Comment
All SIR_FDM_1B_products from 20130607T000000 to 20130607T060000	CS_OPER_AUXISURFPS_20130607T000000_20130607T000000_0_0001 CS_OPER_AUXISURFPS_20130607T060000_20130607T060000_0_0001	Missing Forecast Auxiliary Files: CS_OPER_AUXISURFPS
All SIR_FDM_1B_products from 20130607T060000 to 20130607T120000	CS_OPER_AUXISURFPS_20130607T060000_20130607T060000_0_0001 CS_OPER_AUXISURFPS_20130607T120000_20130607T120000_0_0001	Missing Forecast Auxiliary Files: CS_OPER_AUXISURFPS
All SIR_FDM_1B_products from 20130607T120000 to 20130607T180000	CS_OPER_AUXISURFPS_20130607T120000_20130607T120000_0_0001 CS_OPER_AUXISURFPS_20130607T180000_20130607T180000_0_0001	Missing Forecast Auxiliary Files: CS_OPER_AUXISURFPS
All SIR_FDM_1B_products from 20130607T180000 to 20130608T000000	CS_OPER_AUXISURFPS_20130607T180000_20130607T180000_0_0001 CS_OPER_AUXISURFPS_20130608T000000_20130608T000000_0_0001	Missing Forecast Auxiliary Files: CS_OPER_AUXISURFPS

### 5.4 L1B Correction Error Flags

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

Number of products with errors: All

Product	Test Failed	Description
All SIR_FDM_1B products	Dry tropospheric correction error, Wet tropospheric correction error, Inverse barometric correction error	Due to multiple missing Forecast Auxiliary Files, there was an error with the Dry tropospheric, Wet tropospheric and Inverse barometric corrections

### 5.5 L1B FDM Measurement Confidence Flags

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: 6

Product	Test Failed	Description
CS_OFFL_SIR_FDM_1B_20130607T020343_20130607T020615_B001	Echo error	The Echo Rx1 Error flag is set, indicating a degraded raw echo.
CS_OFFL_SIR_FDM_1B_20130607T160318_20130607T163538_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_1B_20130607T174139_20130607T181246_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_1B_20130607T195102_20130607T195151_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_1B_20130607T210113_20130607T213310_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_1B_20130607T231441_20130607T231729_B001	Attitude correction missing	The attitude has not been corrected

## 6. Level 2 FDM Data Quality Check

### 6.1 L2 FDM 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

## 6.2 L2 FDM 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 processing chain.

Currently there is a high number of processing error flags set within the Level 2 FDM products (Product\_Err and L2\_Proc\_Flag). These flags are set within L2 Header files (MPH field #19 and SPH field #29) and also within the L2 Product files (MPH field #35 and SPH field #33). They are set by the FDM processor when an error is detected during the L2 processing and also when the percentage of Data Set Records free of processing errors is below the minimum acceptable threshold set within the processor (currently set to 5%).

This issue is under investigation.

Number of products with errors: 0

## 6.3 L2 FDM 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: All

Product	AUX File	Comment
All SIR_FDM_2_ products from 20130607T000000 to 20130607T060000	CS_OPER_AUXISURFPS_20130607T000000_20130607T000000_0_0001 CS_OPER_AUXISURFPS_20130607T060000_20130607T060000_0_0001	Missing Forecast Auxiliary Files: CS_OPER_AUXISURFPS
All SIR_FDM_2_ products from 20130607T060000 to 20130607T120000	CS_OPER_AUXISURFPS_20130607T060000_20130607T060000_0_0001 CS_OPER_AUXISURFPS_20130607T120000_20130607T120000_0_0001	Missing Forecast Auxiliary Files: CS_OPER_AUXISURFPS
All SIR_FDM_2_ products from 20130607T120000 to 20130607T180000	CS_OPER_AUXISURFPS_20130607T120000_20130607T120000_0_0001 CS_OPER_AUXISURFPS_20130607T180000_20130607T180000_0_0001	Missing Forecast Auxiliary Files: CS_OPER_AUXISURFPS
All SIR_FDM_2_ products from 20130607T180000 to 20130608T000000	CS_OPER_AUXISURFPS_20130607T180000_20130607T180000_0_0001 CS_OPER_AUXISURFPS_20130608T000000_20130608T000000_0_0001	Missing Forecast Auxiliary Files: CS_OPER_AUXISURFPS

## 6.4 L2 FDM Correction Error Flags

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

Number of products with errors: All

Product	Test Failed	Description
All SIR_FDM_2 products	Dry tropospheric correction error, Wet tropospheric correction error, Inverse barometric correction error	Due to a missing Forecast Auxiliary File, there was an error with the Dry tropospheric, Wet tropospheric and Inverse barometric corrections

## 6.5 L2 FDM Measurement Confidence Flags

CryoSat L2 data includes a quality flag word (field 8) for each 20-Hz measurement record. The bit value of this flag is an assessment of the measurement quality by the processing chain.

Number of products with errors: 6

Product	Test Failed	Description
CS_OFFL_SIR_FDM_2__20130607T020343_20130607T020615_B001	Echo error	The Echo Rx1 Error flag is set, indicating a degraded raw echo.
CS_OFFL_SIR_FDM_2__20130607T160318_20130607T163538_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_2__20130607T174139_20130607T181246_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_2__20130607T195102_20130607T195151_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_2__20130607T210113_20130607T213310_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_2__20130607T231441_20130607T231729_B001	Attitude correction missing	The attitude has not been corrected

## 6.6 L2 FDM Range Measurement Flags

Each product is checked to detect range measurements flagged by the processing chain as missing or containing errors.

Number of products with errors: 3

Product	Test Failed	Description
CS_OFFL_SIR_FDM_2__20130607T001749_20130607T003743_B001	OCOg Retracked Range Flag	The master fail flag is set by the OCOg call, for one or more records, indicating the values stored in fields #18, #19, #20 and #21 should be ignored for these records.
CS_OFFL_SIR_FDM_2__20130607T083122_20130607T083540_B001	OCOg Retracked Range Flag	The master fail flag is set by the OCOg call, for one or more records, indicating the values stored in fields #18, #19, #20 and #21 should be ignored for these records.
CS_OFFL_SIR_FDM_2__20130607T210113_20130607T213310_B001	OCOg Retracked Range Flag	The master fail flag is set by the OCOg call, for one or more records, indicating the values stored in fields #18, #19, #20 and #21 should be ignored for these records.

## 6.7 L2 FDM SWH and Backscatter Measurement Flags

Each product is checked to detect parameters related to SWH and sigma0 that are flagged by the processing chain as missing or containing errors.

Number of products with errors: 1

Product	Test Failed	Description
CS_OFFL_SIR_FDM_2__20130607T035114_20130607T041156_B001	OCO2 Backscatter Status Flag	The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #47, #48, #49 and #50 should be ignored for these records.

## 6.8 L2 FDM Geophysical Measurement Flags

Each product is checked to detect geophysical measurements flagged by the processing chain as missing or containing errors.

Number of products with errors: All

Product	Test Failed	Description
All SIR_FDM_2 products	U-Wind component error, V-Wind component error	Due to a missing Forecast Auxiliary File, there was an error with the U-Wind and V-wind components of the ECMWF model wind vector.
CS_OFFL_SIR_FDM_2__20130607T001749_20130607T003743_B001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag is set indicating the CFI Ocean Retracker was not successfully executed for one or more records.
CS_OFFL_SIR_FDM_2__20130607T003745_20130607T005337_B001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag is set indicating the CFI Ocean Retracker was not successfully executed for one or more records.
CS_OFFL_SIR_FDM_2__20130607T065317_20130607T070623_B001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag is set indicating the CFI Ocean Retracker was not successfully executed for one or more records.
CS_OFFL_SIR_FDM_2__20130607T083122_20130607T083540_B001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag is set indicating the CFI Ocean Retracker was not successfully executed for one or more records.
CS_OFFL_SIR_FDM_2__20130607T084120_20130607T090842_B001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag is set indicating the CFI Ocean Retracker was not successfully executed for one or more records.
CS_OFFL_SIR_FDM_2__20130607T110459_20130607T112023_B001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag is set indicating the CFI Ocean Retracker was not successfully executed for one or more records.
CS_OFFL_SIR_FDM_2__20130607T133432_20130607T135011_B001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag is set indicating the CFI Ocean Retracker was not successfully executed for one or more records.
CS_OFFL_SIR_FDM_2__20130607T183147_20130607T190530_B001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag is set indicating the CFI Ocean Retracker was not successfully executed for one or more records.
CS_OFFL_SIR_FDM_2__20130607T210113_20130607T213310_B001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag is set indicating the CFI Ocean Retracker was not successfully executed for one or more records.
CS_OFFL_SIR_FDM_2__20130607T214815_20130607T222330_B001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag is set indicating the CFI Ocean Retracker was not successfully executed for one or more records.

## 7. 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.

Product type	Nb. Products	Nb. QCC Reports	Nb. Valid	Nb. Warnings	Nb. Errors
SIR_FDM_1B	75	74	59	15	0
SIR_FDM_2	76	73	0	73	0

### 7.1 QCC Errors

Number of QCC reports with errors: 0

### 7.2 Missing QCC Reports

Number of products with missing QCC reports: 3

Product name
CS_OFFL_SIR_FDM_1B_20130606T233127_20130607T000521_B001
CS_OFFL_SIR_FDM_2__20130606T233127_20130607T000521_B001
CS_OFFL_SIR_FDM_2__20130607T224115_20130607T231256_B001