## 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	Nominal
Correction Error Flags	Nominal
Measurement Confidence Flags	See Sections 5.5, 6.5, 6.6 and 6.8

Report Production Date:	28-Aug-2013
Data Used:	L1 and L2 Fast Delivery Marine Mode (FDM), and CAL Data

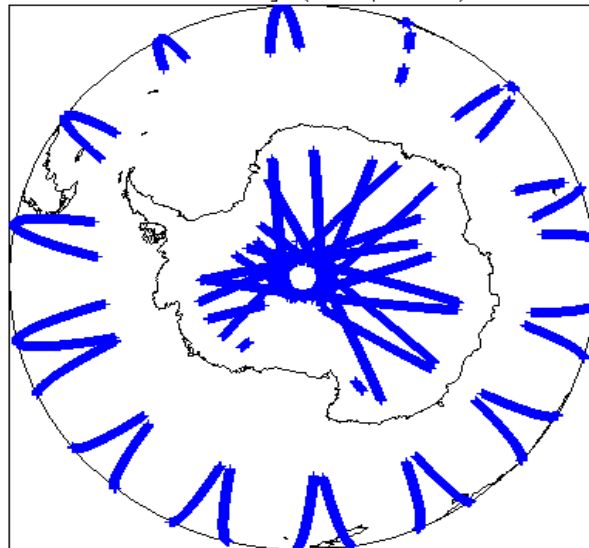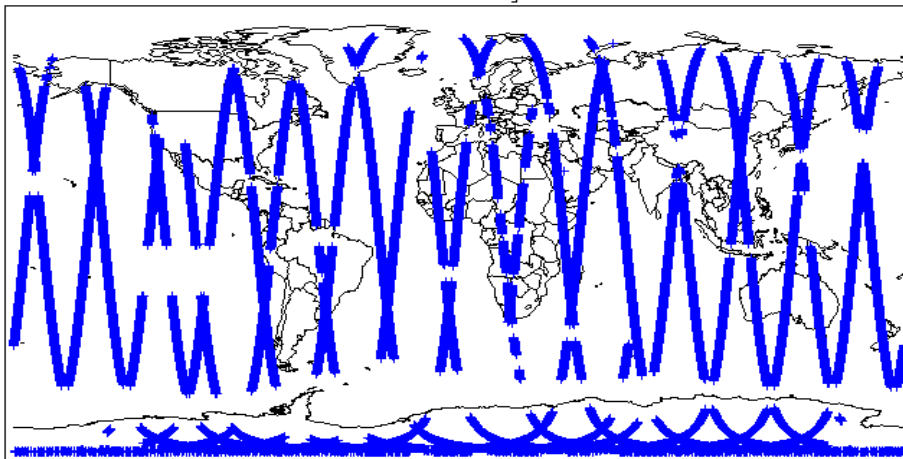| Mission / Instrument News	
26-Aug-2013	None
27-Aug-2013	None
28-Aug-2013	Nothing planned

2. Global Coverage

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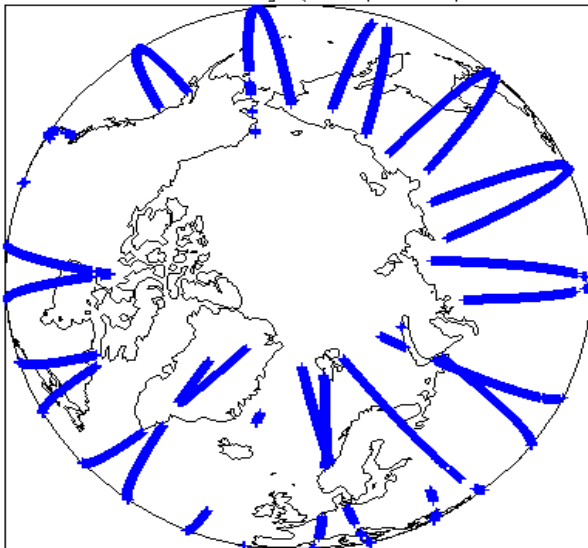
Global Coverage (south pole view)

Global Coverage

3. Instrument Configuration

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

SIRAL instrument(s) in use:	**SIRAL - A**
Star Tracker(s) in use:	**Star Tracker 1 & 2**

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: 0

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: 0

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: 8

Product	Test Failed	Description
CS_OFFL_SIR_FDM_1B_20130827T025148_20130827T025257_B001	Echo error	The Echo Rx1 Error flag is set, indicating a degraded raw echo.
CS_OFFL_SIR_FDM_1B_20130827T085158_20130827T091240_B001	Echo error	The Echo Rx1 Error flag is set, indicating a degraded raw echo.
CS_OFFL_SIR_FDM_1B_20130827T110420_20130827T112309_B001	Echo error	The Echo Rx1 Error flag is set, indicating a degraded raw echo.
CS_OFFL_SIR_FDM_1B_20130827T122424_20130827T122753_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_1B_20130827T140354_20130827T140455_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_1B_20130827T154326_20130827T154350_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_1B_20130827T190700_20130827T190903_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_1B_20130827T223556_20130827T224355_B001	Echo error	The Echo Rx1 Error flag is set, indicating a degraded raw echo.

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: 0

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: 0

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: 8

Product	Test Failed	Description
CS_OFFL_SIR_FDM_2__20130827T025148_20130827T025257_B001	Echo error	The Echo Rx1 Error flag is set, indicating a degraded raw echo.
CS_OFFL_SIR_FDM_2__20130827T085158_20130827T091240_B001	Echo error	The Echo Rx1 Error flag is set, indicating a degraded raw echo.
CS_OFFL_SIR_FDM_2__20130827T110420_20130827T112309_B001	Echo error	The Echo Rx1 Error flag is set, indicating a degraded raw echo.
CS_OFFL_SIR_FDM_2__20130827T122424_20130827T122753_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_2__20130827T140354_20130827T140455_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_2__20130827T154326_20130827T154350_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_2__20130827T190700_20130827T190903_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_2__20130827T223556_20130827T224355_B001	Echo error	The Echo Rx1 Error flag is set, indicating a degraded raw echo.

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: 6

Product	Test Failed	Description
CS_OFFL_SIR_FDM_2__20130827T001907_20130827T003005_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__20130827T011759_20130827T013631_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__20130827T015926_20130827T023222_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__20130827T101612_20130827T103754_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__20130827T165407_20130827T170355_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__20130827T175057_20130827T181518_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: 0

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: 13

Product	Test Failed	Description
CS_OFFL_SIR_FDM_2__20130827T001907_20130827T003005_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__20130827T003534_20130827T004752_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__20130827T011759_20130827T013631_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__20130827T015926_20130827T023222_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__20130827T052254_20130827T054219_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__20130827T065713_20130827T071227_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__20130827T101612_20130827T103754_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__20130827T110420_20130827T112309_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__20130827T165407_20130827T170355_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__20130827T175057_20130827T181518_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__20130827T193340_20130827T195451_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__20130827T202828_20130827T204411_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__20130827T214957_20130827T221205_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	139	138	95	43	0
SIR_FDM_2	134	98	0	98	0

7.1 QCC Errors

Number of QCC reports with errors: 0

7.2 Missing QCC Reports

Number of products with missing QCC reports: 37

Product name
CS_OFFL_SIR_FDM_1B_20130826T234407_20130827T000320_B001
CS_OFFL_SIR_FDM_2__20130826T234407_20130827T000320_B001
CS_OFFL_SIR_FDM_2__20130827T174015_20130827T174708_B001
CS_OFFL_SIR_FDM_2__20130827T175057_20130827T181518_B001
CS_OFFL_SIR_FDM_2__20130827T181828_20130827T182334_B001
CS_OFFL_SIR_FDM_2__20130827T182340_20130827T182347_B001
CS_OFFL_SIR_FDM_2__20130827T182354_20130827T182708_B001
CS_OFFL_SIR_FDM_2__20130827T183434_20130827T190538_B001
CS_OFFL_SIR_FDM_2__20130827T190700_20130827T190903_B001
CS_OFFL_SIR_FDM_2__20130827T191833_20130827T192828_B001
CS_OFFL_SIR_FDM_2__20130827T193007_20130827T193315_B001
CS_OFFL_SIR_FDM_2__20130827T193340_20130827T195451_B001
CS_OFFL_SIR_FDM_2__20130827T195725_20130827T200232_B001
CS_OFFL_SIR_FDM_2__20130827T200239_20130827T200245_B001
CS_OFFL_SIR_FDM_2__20130827T200251_20130827T200303_B001
CS_OFFL_SIR_FDM_2__20130827T200310_20130827T200456_B001
CS_OFFL_SIR_FDM_2__20130827T201212_20130827T202210_B001
CS_OFFL_SIR_FDM_2__20130827T202316_20130827T202615_B001
CS_OFFL_SIR_FDM_2__20130827T202828_20130827T204411_B001
CS_OFFL_SIR_FDM_2__20130827T205731_20130827T211815_B001
CS_OFFL_SIR_FDM_2__20130827T211954_20130827T213328_B001
CS_OFFL_SIR_FDM_2__20130827T213642_20130827T214142_B001
CS_OFFL_SIR_FDM_2__20130827T214150_20130827T214201_B001
CS_OFFL_SIR_FDM_2__20130827T214207_20130827T214217_B001
CS_OFFL_SIR_FDM_2__20130827T214224_20130827T214359_B001
CS_OFFL_SIR_FDM_2__20130827T214957_20130827T221205_B001
CS_OFFL_SIR_FDM_2__20130827T221327_20130827T222416_B001
CS_OFFL_SIR_FDM_2__20130827T222438_20130827T222505_B001
CS_OFFL_SIR_FDM_2__20130827T223556_20130827T224355_B001
CS_OFFL_SIR_FDM_2__20130827T224448_20130827T224527_B001
CS_OFFL_SIR_FDM_2__20130827T224912_20130827T225014_B001
CS_OFFL_SIR_FDM_2__20130827T225047_20130827T231146_B001
CS_OFFL_SIR_FDM_2__20130827T231722_20130827T232059_B001
CS_OFFL_SIR_FDM_2__20130827T232106_20130827T232115_B001
CS_OFFL_SIR_FDM_2__20130827T232121_20130827T232431_B001
CS_OFFL_SIR_FDM_2__20130827T232819_20130827T233915_B001
CS_OFFL_SIR_FDM_2__20130827T234444_20130827T235602_B001