1. Overview

|	
Report Production Date:	09-Jan-2014
Data Used:	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 and 6.8

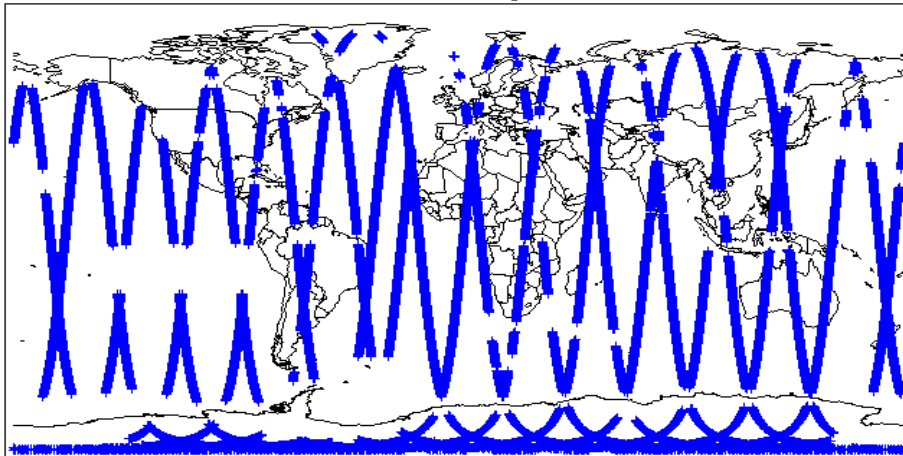| Mission / Instrument News	
07-Jan-2014	None
08-Jan-2014	None
09-Jan-2014	SIRAL unavailability from 9-Jan-2014 04:53:55 to 05:58:39 due to a planned orbit manoeuvre.

2. Global Coverage

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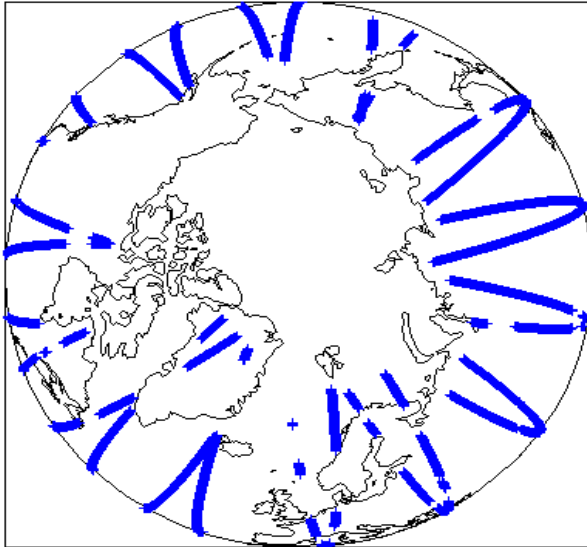
Global Coverage (south pole view)
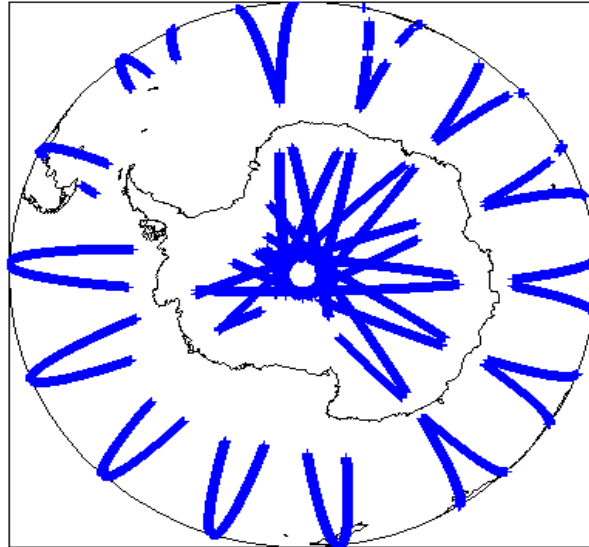
Global Coverage

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: 147

Product	AUX File	Comment
All SIR_FDM_1B products (147 products)	CS_OPER_AUXIIONGIM_20140108T000000_20140108T235959_0001	Missing Forecast Auxiliary File: CS_OPER_AUXIIONGIM
All SIR_FDM_1B products from 20140108T114902 onwards (72 products)	CS_OPER_AUXISURFPS_20140108T180000; CS_OPER_AUXISURFPS_20140109T000000; CS_OPER_AUXIU_WIND_20140108T180000; CS_OPER_AUXIU_WIND_20140109T000000; CS_OPER_AUXIWETTRP_20140108T180000; CS_OPER_AUXIWETTRP_20140109T000000;	Missing Forecast Auxiliary Files: CS_OPER_AUXISURFPS; CS_OPER_AUXIU_WIND; CS_OPER_AUXIWETTRP

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: 147

Product	Test Failed	Description
All SIR_FDM_1B products (147 products)	GIM Ionospheric correction error	Due to a missing Forecast Auxiliary File there was an error with the GIM ionospheric correction.
All SIR_FDM_1B products from 20140108T114902 onwards (72 products)	Dry tropospheric correction error, Wet tropospheric correction error, Inverse barometric correction error	Due to 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: 4

Product	Test Failed	Description
CS_OFFL_SIR_FDM_1B_20140108T044821_20140108T044901_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_1B_20140108T062241_20140108T062503_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_1B_20140108T080127_20140108T080243_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_1B_20140108T104902_20140108T112427_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: 148

Product	AUX File	Comment
All SIR_FDM_2 products (148 products)	CS_OPER_AUXIIONGIM_20140108T000000_20140108T235959_0001	Missing Forecast Auxiliary File: CS_OPER_AUXIIONGIM
All SIR_FDM_2 products from 20140108T114902 onwards (74 products)	CS_OPER_AUXISURFPS_20140108T180000; CS_OPER_AUXISURFPS_20140109T000000; CS_OPER_AUXIU_WIND_20140108T180000; CS_OPER_AUXIU_WIND_20140109T000000; CS_OPER_AUXIWETTRP_20140108T180000; CS_OPER_AUXIWETTRP_20140109T000000;	Missing Forecast Auxiliary Files: CS_OPER_AUXISURFPS; CS_OPER_AUXIU_WIND; CS_OPER_AUXIWETTRP

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: 148

Product	Test Failed	Description
All SIR_FDM_2 products (148 products)	GIM Ionospheric correction error	Due to a missing Forecast Auxiliary File there was an error with the GIM ionospheric correction.
All SIR_FDM_2 products from 20140108T114902 onwards (74 products)	Dry tropospheric correction error, Wet tropospheric correction error, Inverse barometric correction error	Due to missing Forecast Auxiliary Files, 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: 4

Product	Test Failed	Description
CS_OFFL_SIR_FDM_2__20140108T044821_20140108T044901_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_2__20140108T062241_20140108T062503_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_2__20140108T080127_20140108T080243_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_2__20140108T104902_20140108T112427_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__20140108T055151_20140108T055655_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__20140108T094725_20140108T094733_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__20140108T154603_20140108T155810_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: 78

Product	Test Failed	Description
All SIR_FDM_2 from 20140108T114902 onwards (74 products)	U-Wind component error, V-Wind component error	Due to a missing Forecast Auxiliary Files, there was an error with the U-Wind and V-wind components of the ECMWF model wind vector.
CS_OFFL_SIR_FDM_2__20140108T002344_20140108T003614_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__20140108T055151_20140108T055655_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__20140108T094725_20140108T094733_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__20140108T101248_20140108T102927_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__20140108T114902_20140108T121452_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__20140108T123246_20140108T124511_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__20140108T140926_20140108T142424_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__20140108T154603_20140108T155810_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__20140108T182515_20140108T184359_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__20140108T195244_20140108T195415_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	147	0	0	0	0
SIR_FDM_2	148	0	0	0	0

7.1 QCC Errors

Number of QCC reports with errors: 0

7.2 Missing QCC Reports

Number of products with missing QCC reports: All