

1. Overview

Report Production Date:	10-Jan-2014
Data Used:	L1 and L2 Fast Delivery Marine Mode (FDM), and CAL Data

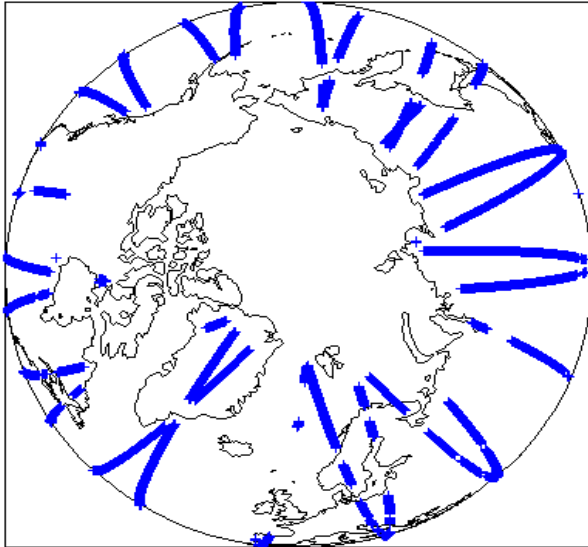
Check	Status
Server check: science-pds.cryosat.esa.int	Nominal
Server check: calval-pds.cryosat.esa.int	Nominal
Product Software Check	Nominal
Product Format Check	Nominal
Product Header Analysis	Nominal
Auxiliary Data File Usage	See Section 5.3 and 6.3
Correction Error Flags	See Sections 5.4 and 6.4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

Mission / Instrument News

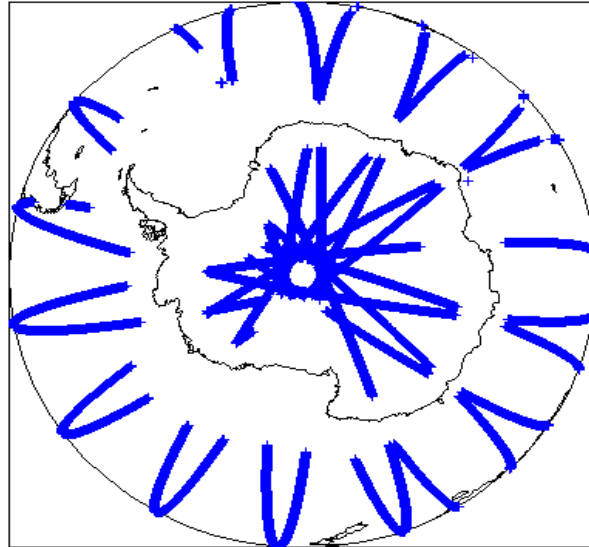
08-Jan-2014	None
09-Jan-2014	SIRAL unavailability from 9-Jan-2014 04:53:55 to 05:58:39 due to a planned orbit manoeuvre.
10-Jan-2014	Nothing planned

2. Global Coverage

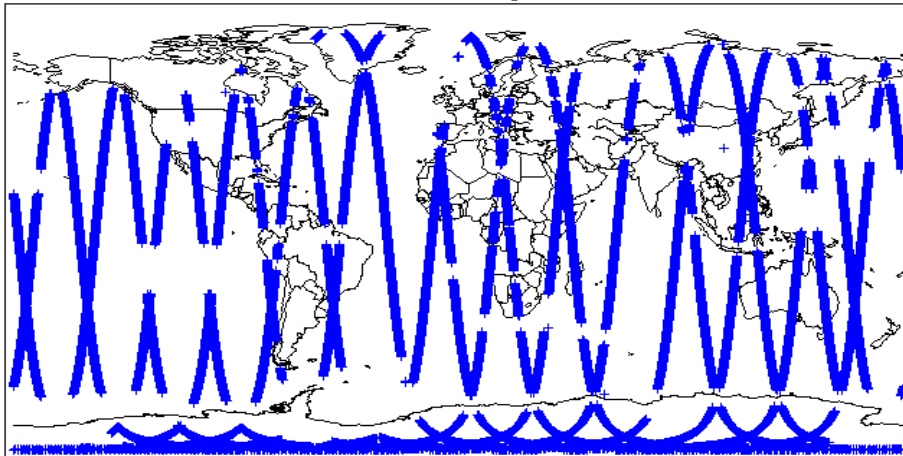
Global Coverage (north pole view)



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: 173

Product	AUX File	Comment
All SIR_FDM_1B products (173 products)	CS_OPER_AUXIIONGIM_20140109T000000_20140109T235959_0001	Missing Forecast Auxiliary File: CS_OPER_AUXIIONGIM
All SIR_FDM_1B products up to 201409T121528 (81 products)	CS_OPER_AUXISEAMPS_20140109T060000; CS_OPER_AUXISURFPS_20140109T000000; CS_OPER_AUXIWETTRP_20140109T000000; CS_OPER_AUXIWETTRP_20140109T060000;	Missing Forecast Auxiliary Files: CS_OPER_AUXISEAMPS; CS_OPER_AUXISURFPS; CS_OPER_AUXIU_WIND; CS_OPER_AUXIWETTRP
All SIR_FDM_1B products from 20140109T175535 onwards (40 products)	CS_OPER_AUXIV_WIND_20140110T000000	Missing Forecast Auxiliary File: CS_OPER_AUXIV_WIND

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: 173

Product	Test Failed	Description
All SIR_FDM_1B products (173 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 up to 20140109T121528 (81 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.
All SIR_FDM_1B products from 20140109T175535 onwards (40 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_20140109T071009_20140109T071225_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_1B_20140109T085041_20140109T085106_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_1B_20140109T121438_20140109T121528_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_1B_20140109T131956_20140109T133335_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: 173

Product	AUX File	Comment
All SIR_FDM_2 products (173 products)	CS_OPER_AUXIIONGIM_20140109T000000_20140109T235959_0001	Missing Forecast Auxiliary File: CS_OPER_AUXIIONGIM
All SIR_FDM_2 products up to 201409T121528 (81 products)	CS_OPER_AUXISEAMPS_20140109T060000; CS_OPER_AUXISURFPS_20140109T000000; CS_OPER_AUXIWETTRP_20140109T000000; CS_OPER_AUXIWETTRP_20140109T060000;	Missing Forecast Auxiliary Files: CS_OPER_AUXISEAMPS; CS_OPER_AUXISURFPS; CS_OPER_AUXIU_WIND; CS_OPER_AUXIWETTRP
All SIR_FDM_2 products from 20140109T175535 onwards (40 products)	CS_OPER_AUXIV_WIND_20140110T000000	Missing Forecast Auxiliary File: CS_OPER_AUXIV_WIND

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: 173

Product	Test Failed	Description
All SIR_FDM_2 products (173 products)	Ionospheric correction error	Due to a missing Forecast Auxiliary File there was an error with the GIM ionospheric correction.
All SIR_FDM_2 products up to 20140109T121528 (81 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.
All SIR_FDM_2 products from 20140109T175535 onwards (40 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_20140109T071009_20140109T071225_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_2_20140109T085041_20140109T085106_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_2_20140109T121438_20140109T121528_B001	Attitude correction missing	The attitude has not been corrected
CS_OFFL_SIR_FDM_2_20140109T131956_20140109T133335_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: 2

Product	Test Failed	Description
CS_OFFL_SIR_FDM_2_20140109T155810_20140109T162117_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_20140109T211236_20140109T211943_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: 122

Product	Test Failed	Description
All SIR_FDM_2 products up to 20140109T121528 (81 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.
All SIR_FDM_2 products from 20140109T175535 onwards (40 products)	U-Wind component error, V-Wind component error	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_20140109T000333_20140109T002109_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_20140109T105828_20140109T112342_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_20140109T155810_20140109T162117_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_20140109T211236_20140109T211943_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	173	0	0	0	0
SIR_FDM_2	173	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