# 1. Overview

| Report Production Date: | 24-Jul-2020 |
|---|---|
| Processor Used: | CryoSat Ice Processor |
| Data Used: | L1 and L2 Fast Delivery Marine (FDM) Mode and L0 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 | See Section 4.2, 5.2 and 6.2 |
| Star Tracker Usage Check | See Section 5.3 |
| Calibration Usage Check | Nominal |
| Auxiliary Data File Usage Check | See Section 5.5 and 6.3 |
| Auxiliary Correction Error Check | See Section 5.6 and 6.4 |
| Measurement Confidence Data Check | See Section 5.7, 6.5, 6.6, 6.7 and 6.8 |
| QCC Error/ Warning Check | See Section 7.1 and 7.2 |

| Mission / Instrument News | |
|---|---|
| 22-Jul-2020 | None |
| 23-Jul-2020 | CRYO2ICE Orbit raising activities. SIRAL unavailability from 23/07/2020 22:30:21 to 24/07/2020 05:14:31. AUXIIONGIM file was delayed. |
| 24-Jul-2020 | CRYO2ICE Orbit raising activities. |

# 2. Production Completeness & Global Coverage
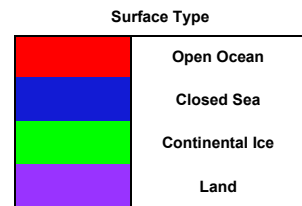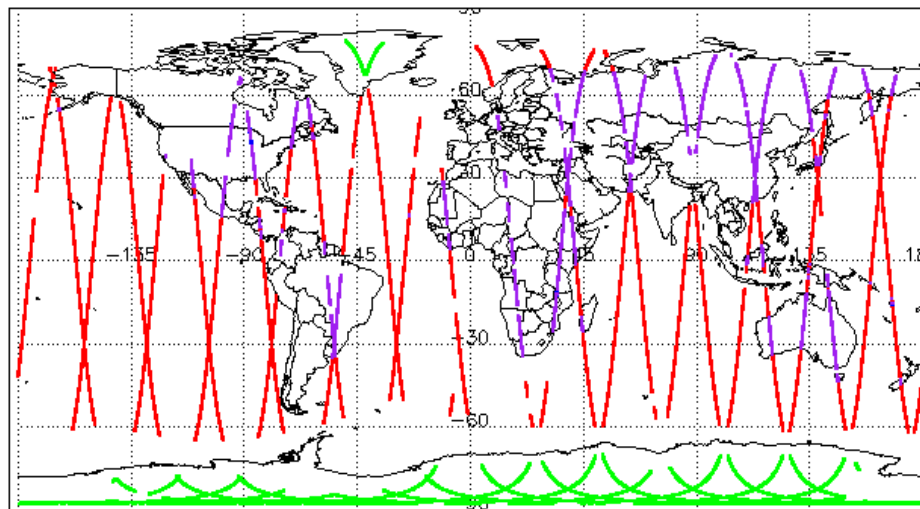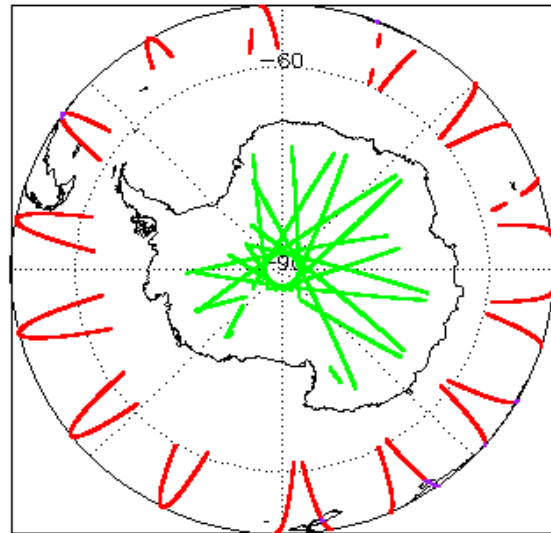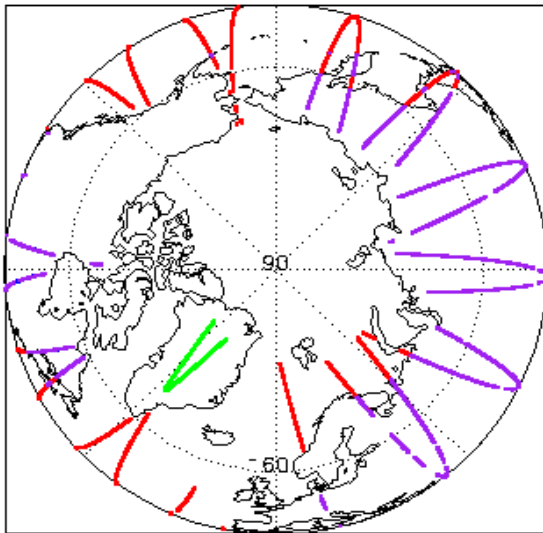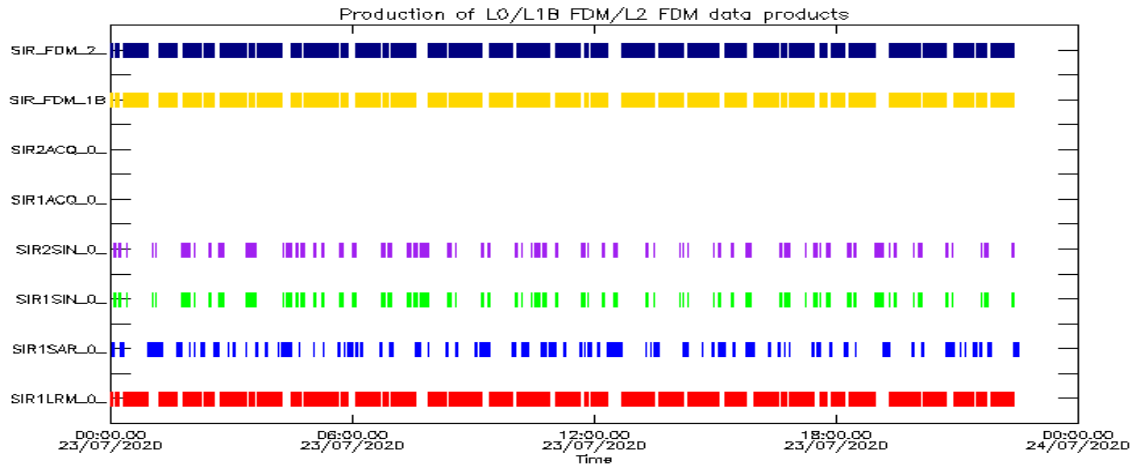
# 3. Instrument Configuration

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** |

# 4. Level 0 Data Quality Check

## 4.1 L0 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 L0 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:**          14

| Product | Test Failed |
|---|---|
| CS_OPER_SIR1SAR_0__20200723T024005_20200723T024114_0001.HDR | Percentage of processing errors detected greater than minimum acceptable threshold. |
| CS_OPER_SIR1SAR_0__20200723T055325_20200723T055950_0001.HDR | Percentage of processing errors detected greater than minimum acceptable threshold. |
| CS_OPER_SIR1SAR_0__20200723T150756_20200723T151316_0001.HDR | Percentage of processing errors detected greater than minimum acceptable threshold. |
| CS_OPER_SIR1SAR_0__20200723T204556_20200723T204624_0001.HDR | Percentage of processing errors detected greater than minimum acceptable threshold. |
| CS_OPER_SIR1SAR_0__20200723T214511_20200723T214919_0001.HDR | Percentage of processing errors detected greater than minimum acceptable threshold. |
| CS_OPER_SIR1SIN_0__20200723T001126_20200723T001453_0001.HDR | Percentage of processing errors detected greater than minimum acceptable threshold. |
| CS_OPER_SIR1SIN_0__20200723T015032_20200723T015356_0001.HDR | Percentage of processing errors detected greater than minimum acceptable threshold. |
| CS_OPER_SIR1SIN_0__20200723T074014_20200723T075136_0001.HDR | Percentage of processing errors detected greater than minimum acceptable threshold. |
| CS_OPER_SIR1SIN_0__20200723T082413_20200723T082632_0001.HDR | Percentage of processing errors detected greater than minimum acceptable threshold. |
| CS_OPER_SIR1SIN_0__20200723T154932_20200723T155146_0001.HDR | Percentage of processing errors detected greater than minimum acceptable threshold. |
| CS_OPER_SIR1SIN_0__20200723T185715_20200723T190831_0001.HDR | Percentage of processing errors detected greater than minimum acceptable threshold. |
| CS_OPER_SIR2SIN_0__20200723T042433_20200723T042647_0001.HDR | Percentage of processing errors detected greater than minimum acceptable threshold. |
| CS_OPER_SIR2SIN_0__20200723T181557_20200723T181830_0001.HDR | Percentage of processing errors detected greater than minimum acceptable threshold. |
| CS_OPER_SIR2SIN_0__20200723T185715_20200723T190558_0001.HDR | Percentage of processing errors detected greater than minimum acceptable threshold. |

# 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:**          8

| Product | Test Failed |
|---|---|
| CS_OFFL_SIR_FDM_1B_20200723T072532_20200723T072858_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |
| CS_OFFL_SIR_FDM_1B_20200723T072858_20200723T073158_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |
| CS_OFFL_SIR_FDM_1B_20200723T090504_20200723T090601_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |
| CS_OFFL_SIR_FDM_1B_20200723T090601_20200723T090615_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |
| CS_OFFL_SIR_FDM_1B_20200723T104435_20200723T104500_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |
| CS_OFFL_SIR_FDM_1B_20200723T104500_20200723T104531_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |
| CS_OFFL_SIR_FDM_1B_20200723T140807_20200723T141022_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |
| CS_OFFL_SIR_FDM_1B_20200723T141022_20200723T141134_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |

## 5.3 L1B FDM Star Tracker Usage Check

Each product is checked in order to ensure a valid star tracker file has been used in processing.

**Number of products with errors:**          4

| Product | Test Failed |
|---|---|
| CS_OFFL_SIR_FDM_1B_20200723T072532_20200723T072858_C001 | No Star Tracker file used in the processing of this product |
| CS_OFFL_SIR_FDM_1B_20200723T090504_20200723T090601_C001 | No Star Tracker file used in the processing of this product |
| CS_OFFL_SIR_FDM_1B_20200723T104435_20200723T104500_C001 | No Star Tracker file used in the processing of this product |
| CS_OFFL_SIR_FDM_1B_20200723T140807_20200723T141022_C001 | No Star Tracker file used in the processing of this product |

## 5.4 L1B FDM Calibration Usage Check

Each product is checked in order to ensure the necessary calibration files have been used in processing.

**Number of products with errors:**          0

## 5.5 L1B FDM Auxilary Data File Usage Check

Each product is checked for missing Data Set Descriptors with respect to a pre-determined baseline and also to check the validity of Auxiliary Data Files is correct.

| Number of products with errors: | | 93 |
|---|---|---|

| Product | AUX File | Comment |
|---|---|---|
| 93 FDM_1B products from 2020-07-22 23:51:14 until 2020-07-23 11:13:41 | AUXI IONGIM | Due to a missing Forecast Auxiliary File there is an error with the Ionospheric Correction |

## 5.6 L1B FDM Auxiliary Correction Error Check

CryoSat L1B data includes a correction error flag (field 54) for each measurement record. The bit value of this flag indicates any problems when set.

| Number of products with errors: | | 93 |
|---|---|---|

| Product | Test Failed | Description |
|---|---|---|
| 93 FDM_1B products from 2020-07-22 23:51:14 until 2020-07-23 12:19:24 | Dynamic atmosphere correction, GIM ionspheric correction | Due to a missing Forecast Auxiliary Files there is an error with the Dry Tropospheric, Wet Tropospheric and Inverse Barometric Corrections |

## 5.7 L1B FDM Measurement Confidence Data Check

| Number of products with errors: | | 7 |
|---|---|---|

| Product | Test Failed | Description |
|---|---|---|
| CS_OFFL_SIR_FDM_1B_20200723T030549_20200723T032036_C001 | Echo error, TRK echo error | The tracking echo has returned an error and the Rx1 Echo Error flag is set, indicating a degraded echo |
| CS_OFFL_SIR_FDM_1B_20200723T060721_20200723T061218_C001 | Echo error, TRK echo error | The tracking echo has returned an error and the Rx1 Echo Error flag is set, indicating a degraded echo |
| CS_OFFL_SIR_FDM_1B_20200723T072532_20200723T072858_C001 | Attitude correction missing | The attitude has not been corrected |
| CS_OFFL_SIR_FDM_1B_20200723T090504_20200723T090601_C001 | Attitude correction missing | The attitude has not been corrected |
| CS_OFFL_SIR_FDM_1B_20200723T104435_20200723T104500_C001 | Attitude correction missing | The attitude has not been corrected |
| CS_OFFL_SIR_FDM_1B_20200723T140807_20200723T141022_C001 | Attitude correction missing | The attitude has not been corrected |
| CS_OFFL_SIR_FDM_1B_20200723T141947_20200723T144044_C001 | Echo error, TRK echo error | The tracking echo has returned an error and the Rx1 Echo Error flag is set, indicating a degraded 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 ground-segment processing chain.

| Number of products with errors: | | 17 |
|---|---|---|

| Product | Test Failed |
|---|---|
| CS_OFFL_SIR_FDM_2__20200723T044139_20200723T044228_C001.DBL | Product filename start/stop differs slightly from start/stop validity due to rounding. |
| CS_OFFL_SIR_FDM_2__20200723T044230_20200723T044250_C001.DBL | Product filename start/stop differs slightly from start/stop validity due to rounding. |
| CS_OFFL_SIR_FDM_2__20200723T060440_20200723T060510_C001.DBL | Product filename start/stop differs slightly from start/stop validity due to rounding. |
| CS_OFFL_SIR_FDM_2__20200723T061633_20200723T064050_C001.DBL | Product filename start/stop differs slightly from start/stop validity due to rounding. |
| CS_OFFL_SIR_FDM_2__20200723T072532_20200723T072858_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |
| CS_OFFL_SIR_FDM_2__20200723T072858_20200723T073158_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |
| CS_OFFL_SIR_FDM_2__20200723T082354_20200723T082413_C001.DBL | Product filename start/stop differs slightly from start/stop validity due to rounding. |
| CS_OFFL_SIR_FDM_2__20200723T090504_20200723T090601_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |
| CS_OFFL_SIR_FDM_2__20200723T090601_20200723T090615_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |
| CS_OFFL_SIR_FDM_2__20200723T090948_20200723T091113_C001.DBL | Product filename start/stop differs slightly from start/stop validity due to rounding. |
| CS_OFFL_SIR_FDM_2__20200723T101736_20200723T101859_C001.DBL | Product filename start/stop differs slightly from start/stop validity due to rounding. |
| CS_OFFL_SIR_FDM_2__20200723T102137_20200723T102536_C001.DBL | Product filename start/stop differs slightly from start/stop validity due to rounding. |
| CS_OFFL_SIR_FDM_2__20200723T104435_20200723T104500_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |
| CS_OFFL_SIR_FDM_2__20200723T104500_20200723T104531_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |
| CS_OFFL_SIR_FDM_2__20200723T140807_20200723T141022_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |
| CS_OFFL_SIR_FDM_2__20200723T141022_20200723T141134_C001.DBL | FOS Predicted Orbit (MPL_ORBPRE) used instead of the DORIS Navigator Orbit (DOR_NAV). |
| CS_OFFL_SIR_FDM_2__20200723T200127_20200723T200455_C001.DBL | Product filename start/stop differs slightly from start/stop validity due to rounding. |

## 6.3 L2 FDM Auxiliary Data File Usage Check

Each product is checked for missing Data Set Descriptors with respect to a pre-determined baseline and also to check the validity of Auxiliary Data Files is correct.

| Number of products with errors: | | 91 |
|---|---|---|

| Product | AUX File | Comment |
|---|---|---|
| 91 FDM_2 products from 2020-07-22 23:51:14 until 2020-07-23 11:13:41 | AUXI IONGIM | Due to a missing Forecast Auxiliary File there is an error with the Ionospheric Correction |

## 6.4 L2 FDM Auxiliary Correction Error Check

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: | | 127 |
|---|---|---|

| Product | Test Failed | Description |
|---|---|---|
| 91 FDM_2 products from 2020-07-22 23:51:14 until 2020-07-23 11:13:41 | Ionospheric Correction | Due to a missing Forecast Auxiliary File there is an error with the Ionospheric Correction |
| CS_OFFL_SIR_FDM_2__20200723T024807_20200723T025400_C001 | Sea State Bias Correction | There is an error with the Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T061633_20200723T064050_C001 | Sea State Bias Correction | There is an error with the Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T111627_20200723T113741_C001 | Sea State Bias Correction | There is an error with the Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T115505_20200723T120502_C001 | Sea State Bias Correction | There is an error with the Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T121443_20200723T121924_C001 | Sea State Bias Correction | There is an error with the Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T001837_20200723T002345_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T002354_20200723T005044_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T005105_20200723T005447_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T020528_20200723T021334_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T021936_20200723T022700_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T025520_20200723T030335_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T035303_20200723T040523_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T042956_20200723T043704_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T043826_20200723T044043_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T051707_20200723T053853_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T065651_20200723T065755_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T065933_20200723T072113_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T072858_20200723T073158_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T083517_20200723T090251_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T090948_20200723T091113_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T104839_20200723T105232_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T110418_20200723T111341_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T151316_20200723T152318_C001 | Sea State Bias Correction | There is an error with the Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T124118_20200723T131626_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T141947_20200723T144044_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T152938_20200723T154455_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T160408_20200723T161923_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T171041_20200723T171315_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T171437_20200723T172255_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T175210_20200723T181306_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T191821_20200723T191950_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T192814_20200723T195311_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T205456_20200723T210137_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T210452_20200723T211230_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |
| CS_OFFL_SIR_FDM_2__20200723T214919_20200723T222146_C001 | Sea State Bias Correction, Altimetric Wind Speed | There is an error with the Altimetric Wind Speed and Sea State Bias Correction for one or more records |

## 6.5 L2 FDM Measurement Confidence Data Check

CryoSat L2 data includes a measurement confidence flag (field 8) for each 20-Hz measurement record. The bit value of this flag indicates any problems when set.

**Number of products with errors:** 7

| Product | Test Failed | Description |
|---|---|---|
| CS_OFFL_SIR_FDM_2__20200723T030549_20200723T032036_C001 | Echo error | The Echo Rx1 Error flag is set, indicating a degraded raw echo |
| CS_OFFL_SIR_FDM_2__20200723T060721_20200723T061218_C001 | Echo error | The Echo Rx1 Error flag is set, indicating a degraded raw echo |
| CS_OFFL_SIR_FDM_2__20200723T072532_20200723T072858_C001 | Attitude correction missing | The attitude has not been corrected |
| CS_OFFL_SIR_FDM_2__20200723T090504_20200723T090601_C001 | Attitude correction missing | The attitude has not been corrected |
| CS_OFFL_SIR_FDM_2__20200723T104435_20200723T104500_C001 | Attitude correction missing | The attitude has not been corrected |
| CS_OFFL_SIR_FDM_2__20200723T140807_20200723T141022_C001 | Attitude correction missing | Due the attitude has not been corrected |
| CS_OFFL_SIR_FDM_2__20200723T141947_20200723T144044_C001 | Echo error | The Echo Rx1 Error flag is set, indicating a degraded raw echo |

## 6.6 L2 FDM Range Measurement Check

CryoSat L2 data includes a CFI (field 17) and OCOG (field 22) Range Averaging Status flag for each measurement record. The bit value of this flag indicates any problems when set.

**Number of products with errors:** 25

| Product | Test Failed | Description |
|---|---|---|
| CS_OFFL_SIR_FDM_2__20200723T001837_20200723T002345_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |

| | | |
|---|---|---|
| CS_OFFL_SIR_FDM_2__20200723T002354_20200723T005044_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T005105_20200723T005447_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T020528_20200723T021334_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T021936_20200723T022700_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T035303_20200723T040523_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T042956_20200723T043704_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T043826_20200723T044043_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T065933_20200723T072113_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T072858_20200723T073158_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T083517_20200723T090251_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T090948_20200723T091113_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T104839_20200723T105232_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T110418_20200723T111341_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T124118_20200723T131626_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T141947_20200723T144044_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T152938_20200723T154455_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T160408_20200723T161923_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T171041_20200723T171315_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T171437_20200723T172255_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T191821_20200723T191950_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T192814_20200723T195311_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T205456_20200723T210137_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T210452_20200723T211230_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T214919_20200723T222146_C001 | CFI Retracked Range Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #13, #14, #15 and #16 should be ignored for these records. |

## 6.7 L2 FDM SWH and Backscatter Measurement Check

CryoSat L2 data includes a SWH-Squared Averaging Status flag (field 39) and an CFI (field 45) and OCOG (field 51) Backscatter Averaging Status flag for each measurement record. The bit value of this flag indicates any problems when set.

**Number of products with errors:**   25

| Product | Test Failed | Description |
|---|---|---|
| CS_OFFL_SIR_FDM_2__20200723T001837_20200723T002345_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T002354_20200723T005044_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T005105_20200723T005447_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T020528_20200723T021334_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T021936_20200723T022700_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T035303_20200723T040523_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T042956_20200723T043704_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |

| Product | Test Failed | Description |
|---|---|---|
| CS_OFFL_SIR_FDM_2__20200723T043826_20200723T044043_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T065933_20200723T072113_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T072858_20200723T073158_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T083517_20200723T090251_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T090948_20200723T091113_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T104839_20200723T105232_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T110418_20200723T111341_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T124118_20200723T131626_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T141947_20200723T144044_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T152938_20200723T154455_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T160408_20200723T161923_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T171041_20200723T171315_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T171437_20200723T172255_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T191821_20200723T191950_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T192814_20200723T195311_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T205456_20200723T210137_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T210452_20200723T211230_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |
| CS_OFFL_SIR_FDM_2__20200723T214919_20200723T222146_C001 | CFI Backscatter Status Flag, SWH Squared Averaging Status Flag | The master fail flag is set by the CFI call, for one or more records, indicating the values stored in fields #41, #42, #43 and #44 should be ignored for these records. |

## 6.8 L2 FDM Ocean Retracking Quality Check

CryoSat L2 data includes an ocean retracking quality flag (field 66) for each 20-Hz measurement record. The bit value of this flag indicates any problems when set.

**Number of products with errors:**                42

| Product | Test Failed | Description |
|---|---|---|
| CS_OFFL_SIR_FDM_2__20200723T001837_20200723T002345_C001 | 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__20200723T002354_20200723T005044_C001 | 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__20200723T005105_20200723T005447_C001 | 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__20200723T011054_20200723T011437_C001 | 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__20200723T011607_20200723T013904_C001 | 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__20200723T020528_20200723T021334_C001 | 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__20200723T021936_20200723T022700_C001 | 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__20200723T025520_20200723T030335_C001 | 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__20200723T033715_20200723T035124_C001 | 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__20200723T035303_20200723T040523_C001 | 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__20200723T042956_20200723T043704_C001 | 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__20200723T043826_20200723T044043_C001 | 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__20200723T051707_20200723T053853_C001 | 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__20200723T061633_20200723T064050_C001 | 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__20200723T065933_20200723T072113_C001 | 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__20200723T072858_20200723T073158_C001 | 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__20200723T083517_20200723T090251_C001 | 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__20200723T090948_20200723T091113_C001 | 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__20200723T092509_20200723T095813_C001 | 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__20200723T104839_20200723T105232_C001 | 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__20200723T110418_20200723T111341_C001 | 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__20200723T111627_20200723T113741_C001 | 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__20200723T115505_20200723T120502_C001 | 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__20200723T120650_20200723T121259_C001 | 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__20200723T121443_20200723T121924_C001 | 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__20200723T124118_20200723T131626_C001 | 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__20200723T133541_20200723T140640_C001 | 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__20200723T141947_20200723T144044_C001 | 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__20200723T144101_20200723T145604_C001 | 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__20200723T151316_20200723T152318_C001 | 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__20200723T152938_20200723T154455_C001 | 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__20200723T160408_20200723T161923_C001 | 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__20200723T165056_20200723T171038_C001 | 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__20200723T171041_20200723T171315_C001 | 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__20200723T171437_20200723T172255_C001 | 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__20200723T175210_20200723T181306_C001 | 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__20200723T182918_20200723T185619_C001 | 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__20200723T191821_20200723T191950_C001 | 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__20200723T192814_20200723T195311_C001 | 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__20200723T205456_20200723T210137_C001 | 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__20200723T210452_20200723T211230_C001 | 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__20200723T214919_20200723T222146_C001 | 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. |

## 6.9 L2 Parameters Check

The following section provides plots and statistics of some key science parameters extracted from the L2 products.
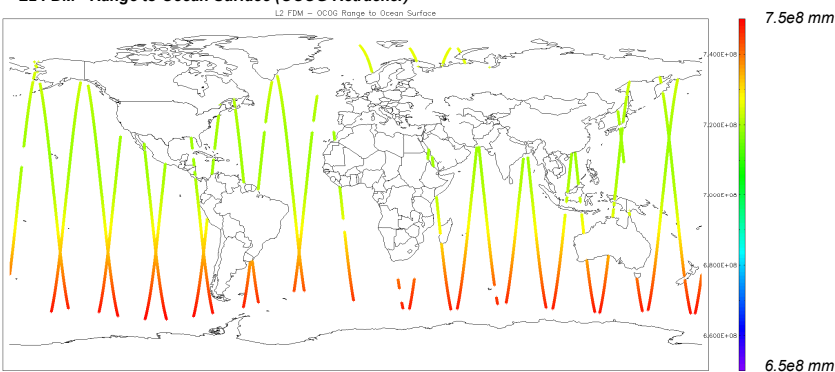
### *Range to Ocean Surface (1 Hz)*
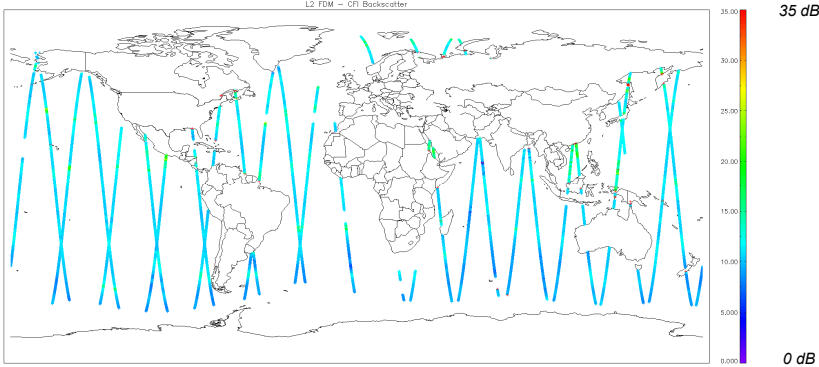
#### L2 FDM - Range to Ocean Surface (CFI Retracker)
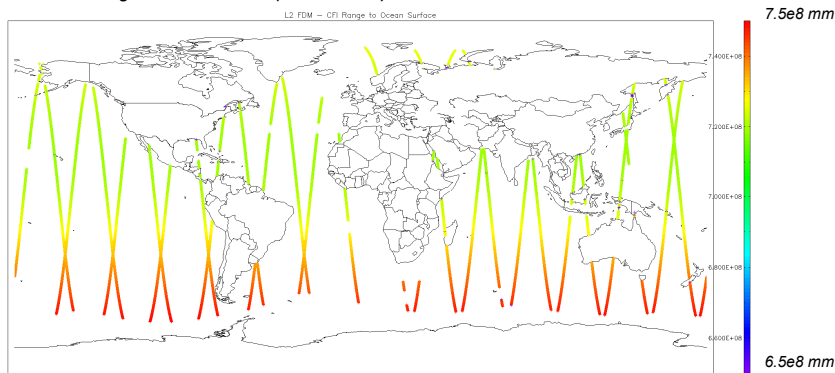


| Parameter | mean (km) | st dev.(km) |
|---|---|---|
| **Range CFI (1 Hz)** | 727.06 | 39.06 |
| **Range OCOG (1 Hz)** | 729.02 | 9.38 |

#### L2 FDM - Range to Ocean Surface (OCOG Retracker)

## Backscatter (1 Hz)

**L2 FDM - Backscatter (CFI Retracker)**



35 dB

0 dB

| Parameter | mean (dB) | st dev.(dB) |
|---|---|---|
| Backscatter CFI (1 Hz) | 11.26 | 16.58 |
| Backscatter OCOG (1 Hz) | 8.68 | 2.05 |

**L2 FDM - Backscatter (OCOG Retracker)**



35 dB

0 dB
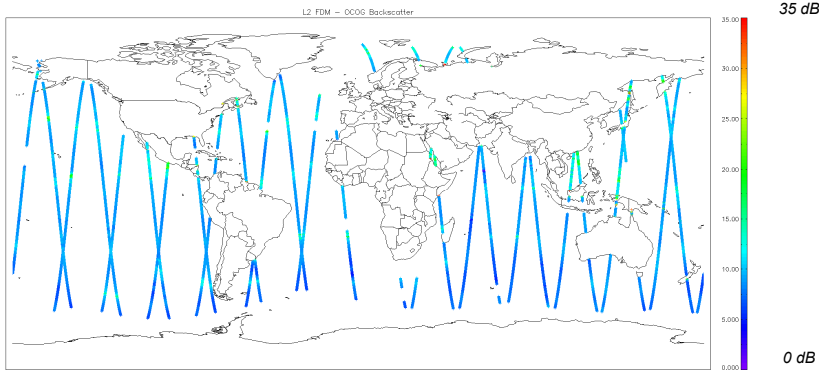
# 7. QCC Report Analysis

The Quality Control for CryoSat (QCC) facility 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 |
|---|---|---|---|---|---|
| SIR1LRM_0_ | 147 | 147 | 147 | 0 | 0 |
| SIR1SAR_0_ | 104 | 104 | 104 | 0 | 0 |
| SIR1SIN_0_ | 106 | 106 | 106 | 0 | 0 |
| SIR2SIN_0_ | 108 | 108 | 108 | 0 | 0 |
| SIR_FDM_1B | 147 | 147 | 4 | 0 | 143 |
| SIR_FDM_2 | 145 | 145 | 87 | 58 | 0 |

## 7.1 QCC Errors

**Number of QCC reports with errors:** 143

**Total number of occurrences of each error**

| Product Type | UVOB | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|
| SIR_FDM_1B | 143 | | | | | | | | | |

**Test Description Key:**

| Abbreviation | Test name | Details |
|---|---|---|
| UVOB | UnitVectorOrBlank_6 | The three array elements should form a unit vector (using a scale factor of 10^-6) |

## 7.2 QCC Warnings

**Number of QCC reports with warnings** 199

**Total number of occurrences of each warning**

| Product Type | MVSIO | MVSIOFD | RAGCOFOFD | RBSZO | RBSZOFD | RSSBCO | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SIR_FDM_1B | 0 | 0 | 3 | 0 | 0 | 0 | | | | | |
| SIR_FDM_2_ | 51.00 | 42.00 | 0.00 | 40.00 | 46.00 | 17.00 | | | | | |

**Test Description Key:**

| Abbreviation | Test name | Details |
|---|---|---|
| MVSIO | MissingValueShortIntOcean | The value should not be a 'missing value' for surface type 0 only |
| MVSIOFD | MissingValueShortIntOceanFD2 | The value should not be a 'missing value' for surface type 0 only |
| RAGCOFOFD | RangeAGCOrFlaggedOceanFD3 | The AGC should be between 0 and 6200 or the AGC_Inconsistency flag should be set for surface type = ocean |
| RBSZO | RangeBackscatterSigmaZeroOcean | The backscatter sigma zero should be between 700 and 3000 (or missing) for surface type = ocean |
| RBSZOFD | RangeBackscatterSigmaZeroOceanFD2 | The backscatter sigma zero should be between 700 and 3000 (or missing) for surface type = ocean |
| RSSBCO | RangeSeaStateBiasCorrectionOcean | The sea state bias correction should be between -500mm and 0mm (or missing) for surface type = ocean |

## 7.3 Missing QCC Reports

**Number of products with missing QCC reports:** 0