



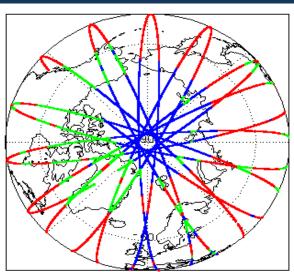
## 1. Overview

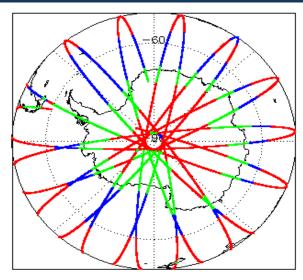
| Report Production: | 08-Oct-2018   |  |
|--------------------|---|--|
| .,                 | 00 300-2010   |  |
| Processor Used:    | CryoSat Ocean Processor   |  |
| Data Used:         | Intermediate Ocean Products (IOP)<br>L1B, L2 & P2P Science Data |  |

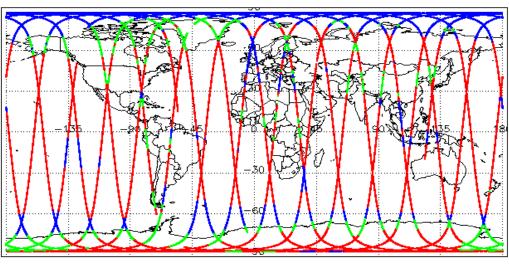
| Check                                      | L1 & L2                      | P2P                  |
|--|------------------------------|----------------------|
| Server check: science-pds.cryosat.esa.int  | Nominal                      | Nominal              |
| Server check: calval-pds.cryosat.esa.int   | Nominal                      | Nominal              |
| Product Software Check                     | Nominal                      | Nominal              |
| Product Format Check                       | Nominal                      | Nominal              |
| Product Header Analysis                    | Nominal                      | Nominal              |
| Auxiliary Data File Usage Check            | Nominal                      | Nominal              |
| Auxiliary Correction Error Check           | Nominal                      | Nominal              |
| Measurement Confidence Data Check          | See Section 4.5, 4.6 and 5.5 | See Section 6.5      |
| Range, SWH & Backscatter Measurement Check | See Section 5.6, 5.7         | See Section 6.6, 6.7 |
| Ocean Retracking Quality Check             | See Section 5.8              | See Section 6.8      |

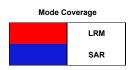
| Mission / Instrument News   |      |  |
|---|------|--|
| 02-Oct-2018   | None |  |
| 03-Oct-2018   | None |  |
| 04-Oct-2018 SIRAL unavailability from 09:26:50 on 04-Oct-2018 to 11:10:13 on 04-Oct-2018 due to a planned on-board maintenance. |      |  |

# 2. Global Coverage









# 3. Instrument Configuration

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

SIRAL instrument(s) in use: SIRAL - A

# 4. IOP Level 1B Data Quality Check

## 4.1 L1B 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 L1B Product Header Analysis

For all products, a series of pre-defined checks are performed on the MPH and SPH in order to identify any inconsistencies and/or errors raised by the ground-segment processing chain.

#### 4.3 L1B 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:

### 4.4 L1B Auxiliary Correction Error Check

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

Number of products with errors:

### 4.5 L1B Measurement Confidence Data Check

CryoSat L1B data includes a measurement confidence flag for each measurement record. The bit value of this flag indicates any problems when set.

Attitude Correction Missing: This flag is currently set in error for IOPR products due to a configuration issue. This is being investigated and will be updated in the next SW update.

Number of products with errors:

| Product   | Test Failed         | Description  |
|---|---------------------|--|
| CS_OFFL_SIR_IOPM1B_20181003T003611_20181003T004630_C001 | Power scaling error | There is an error in the scaling of the L1B waveform for one or more records |
| CS_OFFL_SIR_IOPM1B_20181003T012302_20181003T013147_C001 | Power scaling error | There is an error in the scaling of the L1B waveform for one or more records |

### 4.6 L1B Waveform Group Data Check

CryoSat L1B data includes a waveform data flag for each measurement record. The bit value of this flag indicates any problems when set.

Loss of Echo Flag: This flag is currently set for products over land, but this is to be expected.

Number of products with errors:

19

| est Failed  | Description   |
|-------------|---|
| oss of Echo | The tracking echo is missing for one or more records  |
| oss of Echo | The tracking echo is missing for one or more records  |
| oss of Echo | The tracking echo is missing for one or more records  |
| oss of Echo | The tracking echo is missing for one or more records  |
| oss of Echo | The tracking echo is missing for one or more records  |
| oss of Echo | The tracking echo is missing for one or more records  |
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| oss of Echo | The tracking echo is missing for one or more records  |
| oss of Echo | The tracking echo is missing for one or more records  |
| oss of Echo | The tracking echo is missing for one or more records  |
| oss of Echo | The tracking echo is missing for one or more records  |
| oss of Echo | The tracking echo is missing for one or more records  |
| oss of Echo | The tracking echo is missing for one or more records  |
|             | ss of Echo |

## 5. IOP Level 2 Data Quality Check

#### 5.1 L2 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:

## 5.2 L2 Product Header Analysis

For all products, a series of pre-defined checks are performed 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:

### 5.3 L2 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:

### 5.4 L2 Auxiliary Correction Error Check

For all products, the auxiliary corrections within the Geophysical Group are checked for the default error value (32767).

Number of products with errors:

## 5.5 L2 Measurement Confidence Data Check

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

Number of products with errors:

2

| Product   | Test Failed         | Description   |
|---|---------------------|---|
| CS_OFFL_SIR_IOPM_2_20181003T003611_20181003T004630_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |
| CS_OFFL_SIR_IOPM_2_20181003T012302_20181003T013147_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |

## 5.6 L2 Range Measurement Check

CryoSat L2 data includes an Ocean and Ice Range Averaging Status flag for each measurement record. The bit value of this flag indicates any problems when set.

Currently, there are two common status flags raised in the Level 2 products which are expected due to surface type. All common flags are summarised in the list below, followed by a table highlighting any additional issues which may arise from this test.

Ocean Range Averaging Status Flag: This flag is currently set for products over land and sea ice, but this is to be expected.

Ice Range Averaging Status Flag: This flag is currently set for products over land, but this is to be expected.

Number of products with errors:

83

| Product Product   | Test Failed                  | Description  |
|---|------------------------------|--|
| CS OFFL SIR IOPM 2 20181002T235642 20181003T001325 C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more                   |
| CS_OFFL_SIR_IOPM_2_20181003T001440_20181003T001620_C001 | Ocean Range Averaging Status | records. The Ocean Range Averaging Status Flag has been set for one or more          |
| CS_OFFL_SIR_IOPM_2_20181003T003611_20181003T004630_C001 | Ocean Range Averaging Status | records. The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T004809_20181003T010140_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more                   |
| CS_OFFL_SIR_IOPM_2_20181003T010455_20181003T010956_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more                     |
| CS_OFFL_SIR_IOPM_2_20181003T011035_20181003T011136_C001 | Ice Range Averaging Status   | records. The lce Range Averaging Status Flag has been set for one or more            |
| CS_OFFL_SIR_IOPM_2_20181003T012302_20181003T013147_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more                   |
| CS_OFFL_SIR_IOPM_2_20181003T013532_20181003T014020_C001 | Ocean Range Averaging Status | records. The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T014937_20181003T015229_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T021909_20181003T023959_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T024529_20181003T024913_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.            |
| CS_OFFL_SIR_IOPM_2_20181003T025642_20181003T032415_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T034328_20181003T034559_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T035555_20181003T041938_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T042310_20181003T042827_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.            |
| CS_OFFL_SIR_IOPM_2_20181003T043553_20181003T044629_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T045208_20181003T050841_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T052142_20181003T052845_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T053250_20181003T055036_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T055501_20181003T055855_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T060310_20181003T060901_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.            |
| CS_OFFL_SIR_IOPM_2_20181003T061654_20181003T064829_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T065205_20181003T065218_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T070027_20181003T070242_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T072353_20181003T073710_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T074240_20181003T074753_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.            |
| CS_OFFL_SIR_IOPM_2_20181003T075510_20181003T081608_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T081853_20181003T083021_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T083940_20181003T084217_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T085850_20181003T090500_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T090505_20181003T091646_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T092428_20181003T092654_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.            |
| CS_OFFL_SIR_IOPM_2_20181003T093427_20181003T101019_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T102203_20181003T104158_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T104208_20181003T105446_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T110406_20181003T110602_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.            |
| CS_OFFL_SIR_IOPM_2_20181003T110751_20181003T111105_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.            |
| CS_OFFL_SIR_IOPM_2_20181003T111338_20181003T112828_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T113031_20181003T114036_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T120240_20181003T121909_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T124235_20181003T124522_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.            |
| CS_OFFL_SIR_IOPM_2_20181003T124536_20181003T125006_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.            |
| CS_OFFL_SIR_IOPM_2_20181003T125309_20181003T130655_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T130834_20181003T131027_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
| CS_OFFL_SIR_IOPM_2_20181003T135359_20181003T141644_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records.          |
|   |                              |  |

| CS_OFFL_SIR_IOPM_2_20181003T142034_20181003T142910_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.   |
|---|------------------------------|---|
| CS_OFFL_SIR_IOPM_2_20181003T143254_20181003T145650_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T150725_20181003T150955_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T153021_20181003T154343_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T154518_20181003T155605_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T160248_20181003T160707_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.   |
| CS_OFFL_SIR_IOPM_2_20181003T161216_20181003T164033_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T164328_20181003T164956_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T170344_20181003T171903_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T172434_20181003T173345_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T174200_20181003T174746_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.   |
| CS_OFFL_SIR_IOPM_2_20181003T175116_20181003T175529_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T182653_20181003T182842_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T184045_20181003T191335_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T192105_20181003T192617_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.   |
| CS_OFFL_SIR_IOPM_2_20181003T193200_20181003T194728_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T200554_20181003T200732_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T201754_20181003T202916_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T202933_20181003T204757_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T204807_20181003T205255_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T205919_20181003T210105_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.   |
| CS_OFFL_SIR_IOPM_2_20181003T211036_20181003T214303_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T214303_20181003T214432_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T215639_20181003T223209_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T224022_20181003T224238_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.   |
| CS_OFFL_SIR_IOPM_2_20181003T225111_20181003T230338_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T230454_20181003T232141_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T234327_20181003T235437_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T235640_20181004T001106_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20181003T001641_20181003T001857_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20181003T020248_20181003T020308_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20181003T042137_20181003T042215_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.   |
| CS_OFFL_SIR_IOPN_2_20181003T043200_20181003T043324_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20181003T135236_20181003T135359_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20181003T182611_20181003T182653_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20181003T223314_20181003T223440_C001 | Ice Range Averaging Status   | The Ice Range Averaging Status Flag has been set for one or more records.   |
| CS_OFFL_SIR_IOPR_2_20181003T055855_20181003T060145_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20181003T160952_20181003T161216_C001 | Ocean Range Averaging Status | The Ocean Range Averaging Status Flag has been set for one or more records. |

## 5.7 L2 SWH and Backscatter Measurement Check

CryoSat L2 data includes a SWH Averaging Status flag and an Ocean and Ice Backscatter Averaging Status flag for each measurement record. The bit value of this flag indicates any problems when set.

Currently, there are three common status flags raised in the Level 2 products which are expected due to surface type. All common flags are summarised in the list below, followed by a table highlighting any additional issues which may arise from this test.

**SWH Averaging Status Flag:** This flag is currently set for products over land and sea ice, but this is to be expected.

Ocean Backscatter Averaging Status Flag: This flag is currently set for products over land and sea ice, but this is to be expected.

Ice Backscatter Averaging Status Flag: This flag is currently set for products over land, but this is to be expected.

| Product   | Test Failed   | Description   |
|---|---|---|
| CS_OFFL_SIR_IOPM_2_20181002T235642_20181003T001325_C001 | SWH Averaging Status, Ocean Backscatter Averaging Status    | The SWH and Ocean Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T001440_20181003T001620_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T003611_20181003T004630_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T004809_20181003T010140_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20181003T010455_20181003T010956_C001 | Ice Backscatter Averaging Status                            | The Ice Backscatter Averaging Status Flag has been set for one or more records. |

The Ice Backscatter Averaging Status Flag has been set for one or more CS\_OFFL\_SIR\_IOPM\_2\_20181003T011021\_20181003T011030\_C001 Ice Backscatter Averaging Status SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOPM 2 20181003T012302 20181003T013147 C001 Backscatter Averaging Status more records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T013532\_20181003T014020\_C001 Backscatter Averaging Status more records. SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T014937\_20181003T015229\_C001 Backscatter Averaging Status more records. SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T021909\_20181003T023959\_C001 Backscatter Averaging Status more records The Ice Backscatter Averaging Status Flag has been set for one or more CS\_OFFL\_SIR\_IOPM\_2\_20181003T024529\_20181003T024913\_C001 Ice Backscatter Averaging Status records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOPM 2 20181003T025642 20181003T032415 C001 Backscatter Averaging Status more records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOPM 2 20181003T034328 20181003T034559 C001 Backscatter Averaging Status more records. SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T035555\_20181003T041938\_C001 Backscatter Averaging Status more records. The Ice Backscatter Averaging Status Flag has been set for one or more CS\_OFFL\_SIR\_IOPM\_2\_20181003T042310\_20181003T042827\_C001 Ice Backscatter Averaging Status SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T043553\_20181003T044629\_C001 Backscatter Averaging Status more records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T045208\_20181003T050841\_C001 Backscatter Averaging Status more records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOPM 2 20181003T052142 20181003T052845 C001 Backscatter Averaging Status more records The SWH and Ocean Averaging Status Flags have been set for one or SWH Averaging Status, Ocean CS\_OFFL\_SIR\_IOPM\_2\_20181003T053250\_20181003T055036\_C001 Backscatter Averaging Status more records. SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T055501\_20181003T055855\_C001 Backscatter Averaging Status more records. The Ice Backscatter Averaging Status Flag has been set for one or more CS OFFL SIR IOPM 2 20181003T060310 20181003T060901 C001 Ice Backscatter Averaging Status SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T061654\_20181003T064829\_C001 Backscatter Averaging Status more records The SWH and Ocean Averaging Status Flags have been set for one or SWH Averaging Status, Ocean CS\_OFFL\_SIR\_IOPM\_2\_20181003T070027\_20181003T070242\_C001 Backscatter Averaging Status SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOPM 2 20181003T072353 20181003T073710 C001 **Backscatter Averaging Status** more records The Ice Backscatter Averaging Status Flag has been set for one or more Ice Backscatter Averaging Status CS\_OFFL\_SIR\_IOPM\_2\_20181003T074240\_20181003T074753\_C001 records. SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T075510\_20181003T081608\_C001 Backscatter Averaging Status more records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOPM 2 20181003T081853 20181003T083021 C001 Backscatter Averaging Status more records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T083940\_20181003T084217\_C001 Backscatter Averaging Status more records. SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOPM 2 20181003T085850 20181003T090500 C001 Backscatter Averaging Status SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOPM 2 20181003T090505 20181003T091646 C001 Backscatter Averaging Status more records The Ice Backscatter Averaging Status Flag has been set for one or more CS OFFL SIR IOPM 2 20181003T092428 20181003T092654 C001 Ice Backscatter Averaging Status records The SWH and Ocean Averaging Status Flags have been set for one or SWH Averaging Status, Ocean CS\_OFFL\_SIR\_IOPM\_2\_20181003T093427\_20181003T101019\_C001 Backscatter Averaging Status more records The SWH and Ocean Averaging Status Flags have been set for one or SWH Averaging Status, Ocean CS\_OFFL\_SIR\_IOPM\_2\_20181003T102203\_20181003T104158\_C001 Backscatter Averaging Status more records SWH Averaging Status, Ocean Backscatter Averaging Status The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T104208\_20181003T105446\_C001 more records The Ice Backscatter Averaging Status Flag has been set for one or more CS OFFL SIR IOPM 2 20181003T110406 20181003T110602 C001 Ice Backscatter Averaging Status The Ice Backscatter Averaging Status Flag has been set for one or more CS\_OFFL\_SIR\_IOPM\_2\_20181003T110751\_20181003T111105\_C001 Ice Backscatter Averaging Status records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T111338\_20181003T112828\_C001 Backscatter Averaging Status more records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOPM 2 20181003T113031 20181003T114036 C001 Backscatter Averaging Status more records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T120240\_20181003T121909\_C001 Backscatter Averaging Status more records The Ice Backscatter Averaging Status Flag has been set for one or more CS\_OFFL\_SIR\_IOPM\_2\_20181003T124536\_20181003T125006\_C001 Ice Backscatter Averaging Status records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOPM 2 20181003T125309 20181003T130655 C001 Backscatter Averaging Status more records. SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T130834\_20181003T131027\_C001 Backscatter Averaging Status more records. SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOPM 2 20181003T135359 20181003T141644 C001 Backscatter Averaging Status more records. The Ice Backscatter Averaging Status Flag has been set for one or more CS OFFL SIR IOPM 2 20181003T142034 20181003T142910 C001 Ice Backscatter Averaging Status records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T143254\_20181003T145650\_C001 Backscatter Averaging Status more recor SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T150725\_20181003T150955\_C001 Backscatter Averaging Status nore records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOPM 2 20181003T153021 20181003T154343 C001 Backscatter Averaging Status more records. SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T154518\_20181003T155605\_C001 Backscatter Averaging Status more records. The Ice Backscatter Averaging Status Flag has been set for one or more CS\_OFFL\_SIR\_IOPM\_2\_20181003T160248\_20181003T160707\_C001 Ice Backscatter Averaging Status SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T161216\_20181003T164033\_C001 Backscatter Averaging Status more records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T164328\_20181003T164956\_C001 Backscatter Averaging Status more records. SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOPM 2 20181003T170344 20181003T171903 C001 Backscatter Averaging Status more records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T172434\_20181003T173345\_C001 **Backscatter Averaging Status** more records. The Ice Backscatter Averaging Status Flag has been set for one or more CS\_OFFL\_SIR\_IOPM\_2\_20181003T174200\_20181003T174746\_C001 Ice Backscatter Averaging Status SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOPM 2 20181003T175116 20181003T175529 C001 Backscatter Averaging Status more records SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20181003T182653\_20181003T182842\_C001 Backscatter Averaging Status more records.

| CS_OFFL_SIR_IOPM_2_20181003T184045_20181003T191335_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |
|---|---|--|
| CS_OFFL_SIR_IOPM_2_20181003T192105_20181003T192617_C001 | Ice Backscatter Averaging Status                            | The Ice Backscatter Averaging Status Flag has been set for one or more records.    |
| CS_OFFL_SIR_IOPM_2_20181003T193200_20181003T194728_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |
| CS_OFFL_SIR_IOPM_2_20181003T200554_20181003T200732_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |
| CS_OFFL_SIR_IOPM_2_20181003T201754_20181003T202916_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |
| CS_OFFL_SIR_IOPM_2_20181003T202933_20181003T204757_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |
| CS_OFFL_SIR_IOPM_2_20181003T205919_20181003T210105_C001 | Ice Backscatter Averaging Status                            | The Ice Backscatter Averaging Status Flag has been set for one or more records.    |
| CS_OFFL_SIR_IOPM_2_20181003T211036_20181003T214303_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |
| CS_OFFL_SIR_IOPM_2_20181003T215639_20181003T223209_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |
| CS_OFFL_SIR_IOPM_2_20181003T223440_20181003T224003_C001 | Ice Backscatter Averaging Status                            | The Ice Backscatter Averaging Status Flag has been set for one or more records.    |
| CS_OFFL_SIR_IOPM_2_20181003T224022_20181003T224238_C001 | Ice Backscatter Averaging Status                            | The Ice Backscatter Averaging Status Flag has been set for one or more records.    |
| CS_OFFL_SIR_IOPM_2_20181003T225111_20181003T230338_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |
| CS_OFFL_SIR_IOPM_2_20181003T230454_20181003T232141_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |
| CS_OFFL_SIR_IOPM_2_20181003T234327_20181003T235437_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |
| CS_OFFL_SIR_IOPM_2_20181003T235640_20181004T001106_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |
| CS_OFFL_SIR_IOPN_2_20181003T001641_20181003T001857_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or<br>more records. |
| CS_OFFL_SIR_IOPN_2_20181003T020248_20181003T020308_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |
| CS_OFFL_SIR_IOPN_2_20181003T042137_20181003T042215_C001 | Ice Backscatter Averaging Status                            | The Ice Backscatter Averaging Status Flag has been set for one or more records.    |
| CS_OFFL_SIR_IOPN_2_20181003T043200_20181003T043324_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |
| CS_OFFL_SIR_IOPN_2_20181003T135236_20181003T135359_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or<br>more records. |
| CS_OFFL_SIR_IOPN_2_20181003T182611_20181003T182653_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |
| CS_OFFL_SIR_IOPN_2_20181003T223314_20181003T223440_C001 | Ice Backscatter Averaging Status                            | The Ice Backscatter Averaging Status Flag has been set for one or more records.    |
| CS_OFFL_SIR_IOPR_2_20181003T055855_20181003T060145_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |
| CS_OFFL_SIR_IOPR_2_20181003T160952_20181003T161216_C001 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status | The SWH and Ocean Averaging Status Flags have been set for one or more records.    |

## 5.8 L2 Ocean Retracking Quality Check

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

Ocean Retracking Quality Flag: This flag is currently set for products over land and sea ice, but this is to be expected. The number of products with this error flag set is given below.

Number of products with errors:

## 6. IOP L2 Pole-to-Pole Data Quality Check

## 6.1 P2P 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 NetCDF product file (.nc).

Number of products with errors:

of products with errors:

### 6.2 P2P Product Header Analysis

For all products, a series of pre-defined checks are performed 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:

### 6.3 P2P 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:

## 6.4 P2P Auxiliary Correction Error Check

For all products, the auxiliary corrections within the Geophysical Group are checked for the default error value (32767).

Number of products with errors:

## 0

### 6.5 P2P Measurement Confidence Data Check

CryoSat P2P data includes a measurement confidence flag for each 20-Hz measurement record. The bit value of this flag indicates any problems when set.

| Product   | Test Failed         | Description   |
|---|---------------------|---|
| CS_OFFL_SIR_IOP_220181003T002039_20181003T011013_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |
| CS_OFFL_SIR_IOP_220181003T011013_20181003T015953_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |

#### 6.6 P2P Range Measurement Check

CryoSat P2P data includes an Ocean and Ice Range Averaging Status flag for each measurement record. The bit value of this flag indicates any problems when set.

Currently, there are two common status flags raised in the P2P products which are expected due to surface type. All common flags are summarised in the list below, followed by a table highlighting any additional issues which may arise from this test.

Ocean Range Averaging Status Flag: This flag is currently set for products over land and sea ice, but this is to be expected.

Ice Range Averaging Status Flag: This flag is currently set for products over land, but this is to be expected.

Number of products with errors:

30

| Product  | Test Failed   | Description   |
|--|---|---|
| CS_OFFL_SIR_IOP_220181002T233059_20181003T002039_C003  | Ocean Range Averaging Status                                | The Ocean Range Averaging Status Flag has been set for one or more records.           |
| CS_OFFL_SIR_IOP_2_20181003T002039_20181003T011013_C001 | Ocean Range Averaging Status, Ice<br>Range Averaging Status | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T011013_20181003T015953_C001  | Ocean Range Averaging Status                                | The Ocean Range Averaging Status Flag has been set for one or more records.           |
| CS_OFFL_SIR_IOP_220181003T015953_20181003T024927_C001  | Ocean Range Averaging Status, Ice<br>Range Averaging Status | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T024927_20181003T033906_C001  | Ocean Range Averaging Status, Ice<br>Range Averaging Status | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T033906_20181003T042840_C001  | Ocean Range Averaging Status, Ice<br>Range Averaging Status | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T042840_20181003T051820_C001  | Ocean Range Averaging Status                                | The Ocean Range Averaging Status Flag has been set for one or more records.           |
| CS_OFFL_SIR_IOP_220181003T051820_20181003T060754_C001  | Ocean Range Averaging Status                                | The Ocean Range Averaging Status Flag has been set for one or more records.           |
| CS_OFFL_SIR_IOP_220181003T060754_20181003T065733_C001  | Ocean Range Averaging Status                                | The Ocean Range Averaging Status Flag has been set for one or more records.           |
| CS_OFFL_SIR_IOP_220181003T065733_20181003T074707_C001  | Ocean Range Averaging Status, Ice<br>Range Averaging Status | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T074707_20181003T083647_C001  | Ocean Range Averaging Status                                | The Ocean Range Averaging Status Flag has been set for one or more records.           |
| CS_OFFL_SIR_IOP_220181003T083647_20181003T092621_C001  | Ocean Range Averaging Status, Ice<br>Range Averaging Status | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T092621_20181003T101600_C001  | Ocean Range Averaging Status                                | The Ocean Range Averaging Status Flag has been set for one or more records.           |
| CS_OFFL_SIR_IOP_220181003T101600_20181003T110534_C001  | Ocean Range Averaging Status                                | The Ocean Range Averaging Status Flag has been set for one or more records.           |
| CS_OFFL_SIR_IOP_220181003T110534_20181003T115514_C001  | Ocean Range Averaging Status, Ice<br>Range Averaging Status | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T115514_20181003T124448_C001  | Ocean Range Averaging Status                                | The Ocean Range Averaging Status Flag has been set for one or more records.           |
| CS_OFFL_SIR_IOP_220181003T124448_20181003T133428_C001  | Ocean Range Averaging Status, Ice Range Averaging Status    | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T133428_20181003T142402_C001  | Ocean Range Averaging Status                                | The Ocean Range Averaging Status Flag has been set for one or more records.           |
| CS_OFFL_SIR_IOP_220181003T142402_20181003T151341_C001  | Ocean Range Averaging Status, Ice Range Averaging Status    | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T151341_20181003T160315_C001  | Ocean Range Averaging Status                                | The Ocean Range Averaging Status Flag has been set for one or more records.           |
| CS_OFFL_SIR_IOP_220181003T160315_20181003T165255_C001  | Ocean Range Averaging Status, Ice Range Averaging Status    | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T165255_20181003T174229_C001  | Ocean Range Averaging Status, Ice<br>Range Averaging Status | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T174229_20181003T183208_C001  | Ocean Range Averaging Status, Ice<br>Range Averaging Status | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T183208_20181003T192142_C001  | Ocean Range Averaging Status                                | The Ocean Range Averaging Status Flag has been set for one or more records.           |
| CS_OFFL_SIR_IOP_220181003T192142_20181003T201122_C001  | Ocean Range Averaging Status, Ice Range Averaging Status    | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T201122_20181003T210056_C001  | Ocean Range Averaging Status, Ice Range Averaging Status    | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T210056_20181003T215036_C001  | Ocean Range Averaging Status                                | The Ocean Range Averaging Status Flag has been set for one or more records.           |
| CS_OFFL_SIR_IOP_220181003T215036_20181003T224009_C001  | Ocean Range Averaging Status, Ice<br>Range Averaging Status | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T224009_20181003T232949_C001  | Ocean Range Averaging Status, Ice<br>Range Averaging Status | The Ocean and Ice Range Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T232949_20181004T001923_C003  | Ocean Range Averaging Status                                | The Ocean Range Averaging Status Flag has been set for one or more records.           |

### 6.7 P2P SWH and Backscatter Measurement Check

CryoSat P2P data includes a SWH Averaging Status flag and an Ocean and Ice Backscatter Averaging Status flag for each measurement record. The bit value of this flag indicates any problems when set.

Currently, there are three common status flags raised in the P2P products which are expected due to surface type. All common flags are summarised in the list below, followed by a table highlighting any additional issues which may arise from this test.

SWH Averaging Status Flag: This flag is currently set for products over land and sea ice, but this is to be expected.

Ocean Backscatter Averaging Status Flag: This flag is currently set for products over land and sea ice, but this is to be expected.

Ice Backscatter Averaging Status Flag: This flag is currently set for products over land, but this is to be expected.

| Product  | Test Failed  | Description  |
|--|--|--|
| CS OFFE SIR IOP 2 201810021233059 201810031002039 C003 | SWH Averaging Status, Ocean<br>Backscatter Averaging Status                                      | The SWH and Ocean Averaging Status Flags have been set for one or more records.      |
| CS_OFFL_SIR_IOP_220181003T002039_20181003T011013_C001  | SWH Averaging Status, Ocean<br>Backscatter Averaging Status, Ice<br>Backscatter Averaging Status | The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records. |
|  | SWH Averaging Status, Ocean<br>Backscatter Averaging Status                                      | The SWH and Ocean Averaging Status Flags have been set for one or more records.      |
| CS_OFFL_SIR_IOP_220181003T015953_20181003T024927_C001  | SWH Averaging Status, Ocean<br>Backscatter Averaging Status, Ice<br>Backscatter Averaging Status | The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T024927_20181003T033906_C001  | SWH Averaging Status, Ocean<br>Backscatter Averaging Status, Ice<br>Backscatter Averaging Status | The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records. |

| SWH Averaging Status. Cosen Backscatter Averaging Status and Cosen Averaging Status Flags have been set for one or more records.  SWH Averaging Status. Cosen Backscatter Averaging Status and Cosen Averaging Status Flags have been set for one or more records.  SWH Averaging Status and Cosen Averaging Status Flags have been set for one or more records.  The SWH and Ocean Averaging Status Flags have been set for one or more records.  The SWH and Ocean Averaging Status Flags have been set for one or more records.  The SWH and Ocean Averaging Status Flags have been set for one or more records.  The SWH Averaging Status Flags have been set for one or more records.  The SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags have been set for one or more records.  SWH Averaging Status Flags flavs Flags have been set for one or more records.  SWH Averaging Status Flags flavs Flags have been set for one or more records.  SWH Averaging Status Flags flavs Flags have been set for one or more records.  SWH Averaging Status Flags flavs Flags have been set for one or m | CS_OFFL_SIR_IOP_220181003T033906_20181003T042840_C001  | SWH Averaging Status, Ocean<br>Backscatter Averaging Status, Ice<br>Backscatter Averaging Status | The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records. |
|--|--|--|--|
| Backscatter Averaging Status  CS_OFFL_SIR_IOP_2_20181003T080754_20181003T04707_C001  SWH Averaging Status, Cean Backscatter Averaging Status  CS_OFFL_SIR_IOP_2_20181003T04707_20181003T04707_C001  SWH Averaging Status  SWH Averaging Status  SWH Averaging Status  CS_OFFL_SIR_IOP_2_20181003T04707_20181003T048047_C001  SWH Averaging Status  SWH Averaging Status  SWH Averaging Status  SWH Averaging Status  The SWH Ad Ocean and Ice Averaging Status Flags have been set for one or more records.  The SWH Acceptance of the SWH Averaging Status  The SWH Averaging Status  The SWH Acceptance of the SWH Averaging Status  The SWH Averaging Status  The SWH Acceptance of the SWH Averaging Status  The SWH Acceptance of the SWH Averaging Status  The SWH Averaging Status  The SWH Averaging Status  The SWH Acceptance of the SWH Averaging Status  | CS_OFFL_SIR_IOP_220181003T042840_20181003T051820_C001  |  |  |
| Backscatter Averaging Status. Cosan Backscatter Averaging Status Locan Backscatter Averaging Status Locan Backscatter Averaging Status. Cosan Backscatter Averaging Status. Co | CS_OFFL_SIR_IOP_220181003T051820_20181003T060754_C001  |  | * * *  |
| S. OFFL_SIR_IOP_2_20181003T074707_20181003T093647_C001  Sackscatter Averaging Status or more records.  SWH Averaging Status Coean Backscatter Averaging Status Search Averaging Status or more records.  SWH Averaging Status, Coean Backscatter Averaging Status Search  | CS_OFFL_SIR_IOP_220181003T060754_20181003T065733_C001  |  |  |
| SWH Averaging Status, Locan Backscatter Averaging Status, Locan Ba | CS_OFFL_SIR_IOP_220181003T065733_20181003T074707_C001  | Backscatter Averaging Status, Ice  |  |
| SOFFL_SIR_IOP_2_201810037092621_20181003710600_C001  Backscatter Averaging Status, Ice Backscatter Averaging Status SWH Averaging Status Ice Backscatter Averaging St | CS_OFFL_SIR_IOP_220181003T074707_20181003T083647_C001  |  |  |
| SOFFL_SIR_IOP_2_20181003T101600_20181003T110534_CO01  Saw H Averaging Status SWH Averaging St | CS_OFFL_SIR_IOP_220181003T083647_20181003T092621_C001  | Backscatter Averaging Status, Ice<br>Backscatter Averaging Status                                |  |
| Backscatter Averaging Status  SWH Averaging Status, Ice Backscatter Averag | CS_OFFL_SIR_IOP_220181003T092621_20181003T101600_C001  | Backscatter Averaging Status, Ice  |  |
| Backscatter Averaging Status, Locean Backscatter Averaging Status (See Bac | CS_OFFL_SIR_IOP_220181003T101600_20181003T110534_C001  |  |  |
| CS_OFFL_SIR_IOP_2_20181003T15514_20181003T124448_C001  Backscatter Averaging Status, Ice Backscatter Averaging Status Ice Backscatter Averaging Status  CS_OFFL_SIR_IOP_2_20181003T133428_20181003T142402_C001  CS_OFFL_SIR_IOP_2_20181003T142402_20181003T151341_C001  SWH Averaging Status, Ice Backscatter Averaging Status  CS_OFFL_SIR_IOP_2_20181003T151341_20181003T160315_C001  SWH Averaging Status, Ice Backscatter Averaging Status  SWH Averaging Status, Ice Backscatter Averaging St | CS_OFFL_SIR_IOP_220181003T110534_20181003T115514_C001  | Backscatter Averaging Status, Ice<br>Backscatter Averaging Status                                |  |
| CS_OFFL_SIR_IOP_2_20181003T124448_20181003T133428_C001  Backscatter Averaging Status, Ice Backscatter Averaging Status  CS_OFFL_SIR_IOP_2_20181003T133428_20181003T142402_C001  SWH Averaging Status, Ocean Backscatter Averaging Status  CS_OFFL_SIR_IOP_2_20181003T142402_20181003T151341_C001  CS_OFFL_SIR_IOP_2_20181003T151341_20181003T160315_C001  CS_OFFL_SIR_IOP_2_20181003T160315_20181003T160315_C001  CS_OFFL_SIR_IOP_2_20181003T160315_20181003T1603255_C001  CS_OFFL_SIR_IOP_2_20181003T165255_20181003T174229_C001  CS_OFFL_SIR_IOP_2_20181003T165255_20181003T174229_C001  CS_OFFL_SIR_IOP_2_20181003T174229_20181003T183208_C001  CS_OFFL_SIR_IOP_2_20181003T183208_20181003T192142_C001  CS_OFFL_SIR_IOP_2_20181003T183208_20181003T192142_C001  CS_OFFL_SIR_IOP_2_20181003T183208_20181003T192142_C001  Backscatter Averaging Status, Ice Backscatter Averaging Status  SWH Averaging Status  SWH Averaging Status  SWH Averaging Status  SWH Averaging Status  The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records.  The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records.  The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records.  The SWH Averaging Status Flags have been set for one or more records.  The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records.  The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records.  The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records.   | CS_OFFL_SIR_IOP_2_20181003T115514_20181003T124448_C001 | Backscatter Averaging Status, Ice<br>Backscatter Averaging Status                                |  |
| Backscatter Averaging Status  CS_OFFL_SIR_IOP_2_20181003T142402_20181003T151341_C001  Backscatter Averaging Status, Ocean Backscatter Averaging Status, Ice Backscatter Averaging Status, Ice Backscatter Averaging Status, Ocean Backscatter Averaging Status, Ice Backscatter Averaging Status SWH Averaging Status, Ice Backscatter Averaging Status SWH Averaging Status SWH Averaging Status, Ice Backscatter Averaging Status SWH Averaging Status, Ice Backscatter Averaging Status SWH Av | CS_OFFL_SIR_IOP_220181003T124448_20181003T133428_C001  | Backscatter Averaging Status, Ice  |  |
| CS_OFFL_SIR_IOP_2_20181003T142402_20181003T151341_C001  Backscatter Averaging Status, Ice Backscatter Averaging Status  CS_OFFL_SIR_IOP_2_20181003T151341_20181003T160315_C001  SWH Averaging Status, Ocean Backscatter Averaging Status, Ocean Backscatter Averaging Status, Ice Backscatter Averaging Status  CS_OFFL_SIR_IOP_2_20181003T165255_20181003T174229_C001  CS_OFFL_SIR_IOP_2_20181003T174229_20181003T183208_C001  CS_OFFL_SIR_IOP_2_20181003T183208_20181003T192142_C001  CS_OFFL_SIR_IOP_2_20181003T183208_20181003T192142_C001  SWH Averaging Status, Ocean Backscatter Averaging Status, Ocean Backscatter Averaging Status, Ice Backscatter Averaging Stat | CS_OFFL_SIR_IOP_220181003T133428_20181003T142402_C001  |  |  |
| Backscatter Averaging Status, Ocean Backscatter Averaging Status, Ice Backscatter Averaging Status, Ocean Backscatter Averaging Status, Ocean Backscatter Averaging Status, Ocean Backscatter Averaging Status, Ice Backscatter Averaging Status, Ocean Backscatter Averaging Status, Ice Backscatter Averaging Status, Ocean Backscatter Averaging Status, Ice Backscatter Averaging Status | CS_OFFL_SIR_IOP_220181003T142402_20181003T151341_C001  | Backscatter Averaging Status, Ice  |  |
| CS_OFFL_SIR_IOP_2_20181003T160315_20181003T165255_C001  Backscatter Averaging Status, Ice Backscatter Averaging Status, Ocean Backscatter Averaging Status, Ocean Backscatter Averaging Status, Ice Backscatter Av | CS_OFFL_SIR_IOP_220181003T151341_20181003T160315_C001  |  |  |
| CS_OFFL_SIR_IOP_2_20181003T165255_20181003T174229_C001  Backscatter Averaging Status, Ice Backscatter Averaging Status    CS_OFFL_SIR_IOP_2_20181003T174229_20181003T183208_C001  CS_OFFL_SIR_IOP_2_20181003T183208_20181003T192142_C001  SWH Averaging Status, Ocean Backscatter Averaging Status    SWH Averaging Status, Ocean Backscatter Averaging Status    SWH Averaging Status    SWH Averaging Status    SWH Averaging Status    The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records.  The SWH and Ocean Averaging Status Flags have been set for one or more records.  SWH Averaging Status, Ocean Backscatter Averaging Status Flags have been set for one or more records.  The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records.  The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records.   | CS_OFFL_SIR_IOP_220181003T160315_20181003T165255_C001  | Backscatter Averaging Status, Ice<br>Backscatter Averaging Status                                |  |
| CS_OFFL_SIR_IOP_2_20181003T174229_20181003T183208_C001  Backscatter Averaging Status, Ice Backscatter Averaging Status  CS_OFFL_SIR_IOP_2_20181003T183208_20181003T192142_C001  SWH Averaging Status, Ocean Backscatter Averaging Status  SWH Averaging Status  SWH Averaging Status  SWH Averaging Status, Ocean Backscatter Averaging Status, Ice  The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records.  The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records.  | CS_OFFL_SIR_IOP_220181003T165255_20181003T174229_C001  | Backscatter Averaging Status, Ice<br>Backscatter Averaging Status                                |  |
| Backscatter Averaging Status more records.  SWH Averaging Status, Ocean Backscatter Averaging Status, Ice or more records.  The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records.   | CS_OFFL_SIR_IOP_220181003T174229_20181003T183208_C001  | Backscatter Averaging Status, Ice  |  |
| CS_OFFL_SIR_IOP_2_20181003T192142_20181003T201122_C001  Backscatter Averaging Status, Ice  | CS_OFFL_SIR_IOP_220181003T183208_20181003T192142_C001  |  |  |
|  | CS_OFFL_SIR_IOP_220181003T192142_20181003T201122_C001  | Backscatter Averaging Status, Ice<br>Backscatter Averaging Status                                |  |
| CS_OFFL_SIR_IOP_2_20181003T201122_20181003T210056_C001  SWH Averaging Status, Ocean Backscatter Averaging Status, Ice Backscatter Averaging Status  The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records.   | CS_OFFL_SIR_IOP_220181003T201122_20181003T210056_C001  | Backscatter Averaging Status, Ice  |  |
| CS_OFFL_SIR_IOP_2_20181003T210056_20181003T215036_C001  SWH Averaging Status, Ocean Backscatter Averaging Status  The SWH and Ocean Averaging Status Flags have been set for one or more records.  | CS_OFFL_SIR_IOP_220181003T210056_20181003T215036_C001  | Backscatter Averaging Status   |  |
| CS_OFFL_SIR_IOP_2_20181003T215036_20181003T224009_C001  SWH Averaging Status, Ocean Backscatter Averaging Status, Ice Backscatter Averaging Status  The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records.   | CS_OFFL_SIR_IOP_220181003T215036_20181003T224009_C001  | Backscatter Averaging Status, Ice<br>Backscatter Averaging Status                                |  |
| CS_OFFL_SIR_IOP_2_20181003T224009_20181003T232949_C001  SWH Averaging Status, Ocean Backscatter Averaging Status, Ice Backscatter Averaging Status  The SWH, Ocean and Ice Averaging Status Flags have been set for one or more records.   | CS_OFFL_SIR_IOP_220181003T224009_20181003T232949_C001  | Backscatter Averaging Status, Ice  |  |
| CS_OFFL_SIR_IOP_2_20181003T232949_20181004T001923_C003  SWH Averaging Status, Ocean Backscatter Averaging Status  The SWH and Ocean Averaging Status Flags have been set for one or more records.  | CS_OFFL_SIR_IOP_220181003T232949_20181004T001923_C003  |  |  |

# 6.8 P2P Ocean Retracking Quality Check

Cryosat P2P data includes an ocean retracking quality flag (field 19) for each 20-Hz measurement record. The bit value of this flag indicates any problems when set.

Ocean Retracking Quality Flag: This flag is currently set for products over land and sea ice, but this is to be expected. The number of products with this error flag set is given below.

| Product   | Test Failed                   | Description   |
|---|-------------------------------|---|
| CS_OFFL_SIR_IOP_220181002T233059_20181003T002039_C003 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T002039_20181003T011013_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T011013_20181003T015953_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T015953_20181003T024927_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T024927_20181003T033906_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T033906_20181003T042840_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T042840_20181003T051820_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T051820_20181003T060754_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T060754_20181003T065733_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T065733_20181003T074707_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |

| CS_OFFL_SIR_IOP_220181003T074707_20181003T083647_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
|---|-------------------------------|---|
| CS_OFFL_SIR_IOP_220181003T092621_20181003T101600_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T101600_20181003T110534_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T110534_20181003T115514_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T115514_20181003T124448_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T124448_20181003T133428_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T133428_20181003T142402_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T142402_20181003T151341_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T151341_20181003T160315_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T160315_20181003T165255_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T165255_20181003T174229_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T174229_20181003T183208_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T183208_20181003T192142_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T201122_20181003T210056_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T210056_20181003T215036_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T215036_20181003T224009_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T224009_20181003T232949_C001 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |
| CS_OFFL_SIR_IOP_220181003T232949_20181004T001923_C003 | Ocean Retracking Quality Flag | The Ocean Retracking Quality Flag has been set for one or more records. |