

### 1. Overview

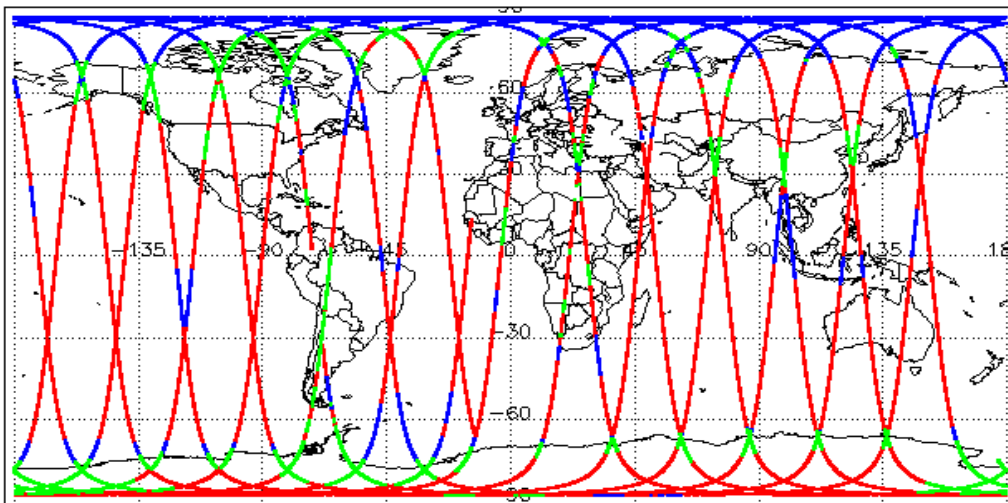
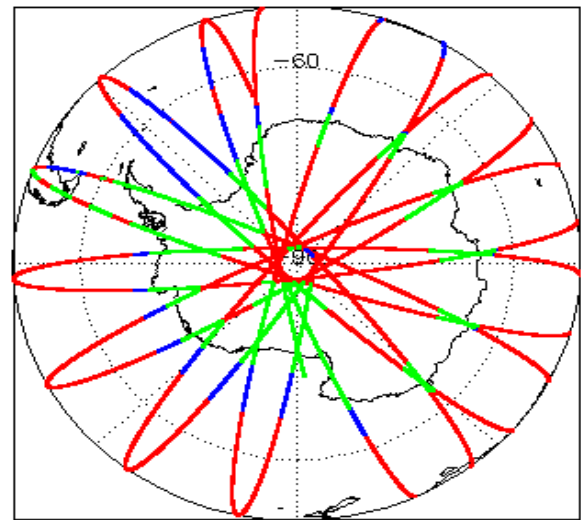
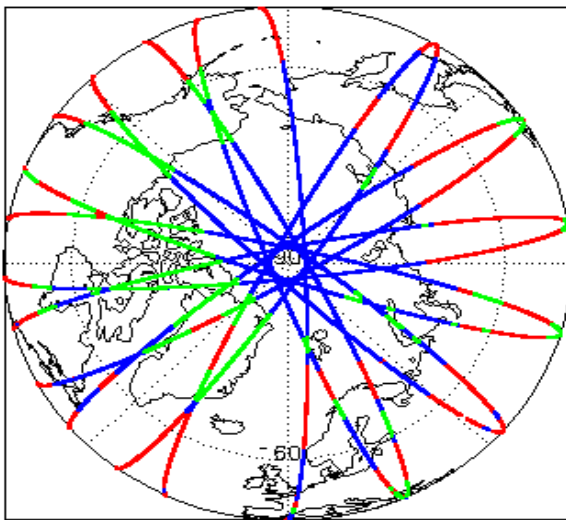
<b>Report Production:</b>	08-Apr-2019
<b>Processor Used:</b>	CryoSat Ocean Processor
<b>Data Used:</b>	Intermediate Ocean Products (IOP) L1B, L2 & P2P Science Data

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	Nominal
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-Apr-2019	None
03-Apr-2019	SIRAL unavailability on 03-Apr-2019 from 10:41:49 to 12:28:02 due to a planned orbit manoeuvre.
04-Apr-2019	Nothing planned

### 2. Global Coverage



### 3. Instrument Configuration

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

<b>SIRAL instrument(s) in use:</b>	SIRAL - A
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### 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.

Number of products with errors: 0

### 4.3 L1B 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: 0

### 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: 0

### 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: 0

### 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: 21

Product	Test Failed	Description
CS_OFFL_SIR_IOPM1B_20190403T025034_20190403T025957_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPM1B_20190403T200016_20190403T203049_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPM1B_20190403T215938_20190403T220042_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20190403T004704_20190403T005229_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20190403T031656_20190403T031807_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20190403T031929_20190403T032135_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20190403T035854_20190403T040226_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20190403T041016_20190403T041203_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20190403T072725_20190403T073012_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20190403T081819_20190403T082300_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20190403T093742_20190403T093846_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20190403T094549_20190403T094644_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20190403T094902_20190403T094931_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20190403T144529_20190403T144820_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20190403T193633_20190403T194217_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20190403T230848_20190403T230919_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20190403T080813_20190403T081818_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20190403T093613_20190403T093655_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20190403T093719_20190403T093742_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20190403T190241_20190403T190341_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20190403T194217_20190403T194958_C001	Loss of Echo	The tracking echo is missing for one or more records

## 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: 0

### 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: 0

### 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: 0

### 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: 0

### 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: 0

## 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:** 73

Product	Test Failed	Description
CS_OFFL_SIR_IOPM_2_20190403T001755_20190403T003530_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T003827_20190403T004001_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T005359_20190403T012322_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T014307_20190403T020117_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T020221_20190403T021557_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T022414_20190403T022613_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T022729_20190403T023114_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T023255_20190403T024832_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T025034_20190403T025957_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T031808_20190403T031929_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T032748_20190403T033920_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T035520_20190403T035642_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T035752_20190403T035854_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T040227_20190403T041016_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T041205_20190403T042737_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T050539_20190403T053825_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T054320_20190403T054907_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T055133_20190403T061716_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T064839_20190403T070001_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T070536_20190403T071726_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T072301_20190403T072724_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T073013_20190403T075931_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T082300_20190403T085631_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T090211_20190403T090747_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T090908_20190403T091530_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T100134_20190403T103554_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T122802_20190403T125618_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T125634_20190403T130349_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T132253_20190403T133051_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T133532_20190403T133709_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T133714_20190403T135314_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T135454_20190403T140012_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T140031_20190403T140233_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T141114_20190403T142345_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T142600_20190403T143803_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T144032_20190403T144203_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T150523_20190403T151454_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T151730_20190403T153230_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T153418_20190403T153923_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T153929_20190403T153940_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T153947_20190403T154102_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T154753_20190403T154859_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T160716_20190403T160937_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T161100_20190403T161450_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T165433_20190403T171135_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.

CS_OFFL_SIR_IOPM_2_20190403T171901_20190403T172036_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T172429_20190403T174847_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T182459_20190403T185115_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T185233_20190403T185753_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T185759_20190403T190123_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T190341_20190403T191552_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T192127_20190403T193633_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T200016_20190403T203049_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T203219_20190403T204029_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T204303_20190403T211806_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T220201_20190403T221015_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T221159_20190403T221719_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T222232_20190403T224527_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T224813_20190403T225728_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T230947_20190403T231349_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T232937_20190403T233423_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T233611_20190403T234919_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T235244_20190403T235618_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20190403T031929_20190403T032135_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20190403T035854_20190403T040226_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20190403T045847_20190403T050100_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20190403T095943_20190403T100133_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20190403T190124_20190403T190240_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20190403T194959_20190403T195012_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPR_2_20190403T140756_20190403T140934_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPR_2_20190403T142349_20190403T142600_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPR_2_20190403T143803_20190403T144032_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPR_2_20190403T220043_20190403T220200_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.

**Number of products with errors:** 73

Product	Test Failed	Description
CS_OFFL_SIR_IOPM_2_20190403T001755_20190403T003530_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_20190403T003827_20190403T004001_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_20190403T005359_20190403T012322_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_20190403T014307_20190403T020117_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_20190403T020221_20190403T021557_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_20190403T022414_20190403T022613_C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T022729_20190403T023114_C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T023255_20190403T024832_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_20190403T025034_20190403T025957_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_20190403T031808_20190403T031929_C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T032748_20190403T033920_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_20190403T040227_20190403T041016_C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20190403T041205_20190403T042737_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_20190403T050539_20190403T053825_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_20190403T054051_20190403T054303_C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.



CS_OFFL_SIR_IOPN_2_20190403T095943_20190403T100133_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_IOPN_2_20190403T190124_20190403T190240_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_IOPN_2_20190403T194959_20190403T195012_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_IOPR_2_20190403T140756_20190403T140934_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_IOPR_2_20190403T142349_20190403T142600_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_IOPR_2_20190403T143803_20190403T144032_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_IOPR_2_20190403T220043_20190403T220200_C001	SWH Averaging Status, Ocean 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:** 53

## 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:** 0

### 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:** 0

### 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:** 0

### 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.

**Number of products with errors:** 0

### 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:** 27

Product	Test Failed	Description
CS_OFFL_SIR_IOP_2_20190402T235654_20190403T004631_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2_20190403T004631_20190403T013607_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_2_20190403T013607_20190403T022544_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2_20190403T022544_20190403T031521_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2_20190403T031521_20190403T040458_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2_20190403T040458_20190403T045434_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_2_20190403T045434_20190403T054411_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_2_20190403T054411_20190403T063348_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_2_20190403T063348_20190403T072325_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2_20190403T072325_20190403T081301_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_2_20190403T081301_20190403T090238_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_2_20190403T090238_20190403T095215_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_2_20190403T095215_20190403T104152_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2_20190403T122105_20190403T131042_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2_20190403T131042_20190403T140019_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_2_20190403T140019_20190403T144956_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2_20190403T144956_20190403T153933_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_2_20190403T153933_20190403T162909_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.

CS_OFFL_SIR_IOP_2_20190403T162909_20190403T171846_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_2_20190403T171846_20190403T180823_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_2_20190403T180823_20190403T185800_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_2_20190403T185800_20190403T194737_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_2_20190403T194737_20190403T203714_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_2_20190403T203714_20190403T212650_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_2_20190403T212650_20190403T221627_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_2_20190403T221627_20190403T230604_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2_20190403T230604_20190403T235541_C002	Ocean Range Averaging Status, Ice Range Averaging Status	The Ocean and Ice Range Averaging Status Flags have 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.

Number of products with errors: 28

Product	Test Failed	Description
CS_OFFL_SIR_IOP_2_20190402T235654_20190403T004631_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_2_20190403T004631_20190403T013607_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_2_20190403T013607_20190403T022544_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_2_20190403T022544_20190403T031521_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_2_20190403T031521_20190403T040458_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_2_20190403T040458_20190403T045434_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_2_20190403T045434_20190403T054411_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_2_20190403T054411_20190403T063348_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_2_20190403T063348_20190403T072325_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_2_20190403T072325_20190403T081301_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_2_20190403T081301_20190403T090238_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_2_20190403T090238_20190403T095215_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_2_20190403T095215_20190403T104152_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_2_20190403T122105_20190403T131042_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_2_20190403T131042_20190403T140019_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_2_20190403T140019_20190403T144956_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_2_20190403T144956_20190403T153933_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_2_20190403T153933_20190403T162909_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_2_20190403T162909_20190403T171846_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_2_20190403T171846_20190403T180823_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_2_20190403T180823_20190403T185800_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_2_20190403T185800_20190403T194737_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_2_20190403T194737_20190403T203714_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_2_20190403T203714_20190403T212650_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_2__20190403T212650_20190403T221627_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_2__20190403T221627_20190403T230604_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_2__20190403T230604_20190403T235541_C002	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_2__20190403T235541_20190404T004517_C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.

## 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.

**Number of products with errors:** 24

Product	Test Failed	Description
CS_OFFL_SIR_IOP_2__20190402T235654_20190403T004631_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T004631_20190403T013607_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T013607_20190403T022544_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T022544_20190403T031521_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T031521_20190403T040458_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T045434_20190403T054411_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T054411_20190403T063348_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T063348_20190403T072325_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T072325_20190403T081301_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T081301_20190403T090238_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T090238_20190403T095215_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T122105_20190403T131042_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T131042_20190403T140019_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T140019_20190403T144956_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T144956_20190403T153933_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T153933_20190403T162909_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T162909_20190403T171846_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T171846_20190403T180823_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T180823_20190403T185800_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T185800_20190403T194737_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T194737_20190403T203714_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T203714_20190403T212650_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T212650_20190403T221627_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_2__20190403T221627_20190403T230604_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.