



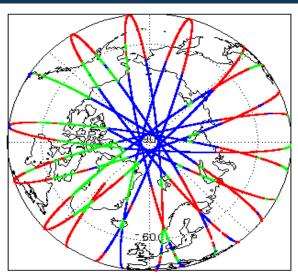
## 1. Overview

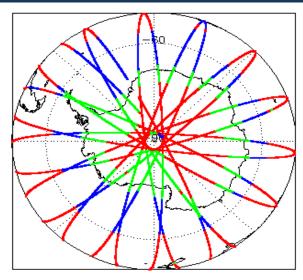
Report Production:	13-Sep-2018
Processor Used:	CryoSat Ocean Processor
Data Used:	Intermediate Ocean Products (IOP) L1B, L2 & P2P Science Data

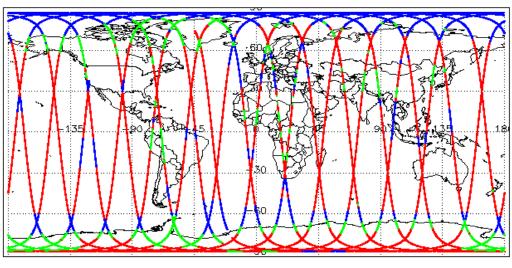
Check	L1 & L2	P2P
Server check: science-pds.cryosat.esa.int	Nominal	Nominal
Server check: calval-pds.cryosat.esa.int	Nominal	Nominal
Product Software Check	Nominal	Nominal
Product Format Check	Nominal	Nominal
Product Header Analysis	Nominal	Nominal
Auxiliary Data File Usage Check	Nominal	Nominal
Auxiliary Correction Error Check	Nominal	Nominal
Measurement Confidence Data Check	See Section 4.5, 4.6 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

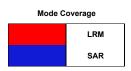
Mission / Instrument News		
10-Sep-2018	None	
11-Sep-2018	None	
12-Sep-2018 Nothing plann		

# 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_20180911T020435_20180911T021541_C001	Power scaling error	There is an error in the scaling of the L1B waveform for one or more records
CS_OFFL_SIR_IOPM1B_20180911T152816_20180911T152941_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:

Product	Test Failed	Description
CS_OFFL_SIR_IOPM1B_20180911T010248_20180911T011220_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPM1B_20180911T011423_20180911T012844_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPM1B_20180911T021705_20180911T021926_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPM1B_20180911T060129_20180911T062602_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPM1B_20180911T120156_20180911T120929_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPM1B_20180911T140912_20180911T141938_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPM1B_20180911T215657_20180911T220142_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20180911T004015_20180911T004406_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20180911T013835_20180911T014448_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20180911T022035_20180911T022207_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20180911T022213_20180911T022439_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20180911T053329_20180911T053953_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20180911T073817_20180911T073924_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20180911T090614_20180911T090702_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20180911T122337_20180911T122458_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20180911T122807_20180911T123032_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20180911T140259_20180911T140512_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20180911T154211_20180911T154348_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20180911T190558_20180911T190733_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPN1B_20180911T221244_20180911T221553_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20180911T011220_20180911T011422_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20180911T053953_20180911T054833_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20180911T202209_20180911T202555_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20180911T221553_20180911T222352_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_IOPR1B_20180911T231201_20180911T231758_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:

#### 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). 0

0

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:

Product	Test Failed	Description
CS_OFFL_SIR_IOPM_2_20180911T020435_20180911T021541_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_20180911T152816_20180911T152941_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. 89

Number of products with errors:

Product	Test Failed	Description
CS_OFFL_SIR_IOPM_2_20180911T000852_20180911T001913_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T002300_20180911T004014_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T010248_20180911T011220_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T011423_20180911T012844_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T013147_20180911T013642_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T014538_20180911T014822_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T020435_20180911T021541_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T025255_20180911T030727_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T031127_20180911T031609_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T032349_20180911T034544_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T034548_20180911T034926_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T042220_20180911T044634_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T045111_20180911T045509_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T045529_20180911T045854_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T050233_20180911T051323_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T051857_20180911T052851_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T054916_20180911T055722_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T060129_20180911T062602_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T062940_20180911T063423_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T064255_20180911T071549_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T072723_20180911T073110_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T080022_20180911T080236_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T080928_20180911T081450_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T082204_20180911T084256_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T084542_20180911T085706_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T090702_20180911T091055_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T092701_20180911T093158_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T093339_20180911T094333_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.  The Ice Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T094856_20180911T095348_C001	Ice Range Averaging Status	records.
CS_OFFL_SIR_IOPM_2_20180911T100050_20180911T100609_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.  The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T100617_20180911T103312_C001	Ocean Range Averaging Status	records.  The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T105401_20180911T112127_C001	Ocean Range Averaging Status	records.  The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T114057_20180911T115552_C001	Ocean Range Averaging Status	records.  The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T120156_20180911T120929_C001	Ocean Range Averaging Status	records.  The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T123032_20180911T124600_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T124855_20180911T130247_C001	Ocean Range Averaging Status	records.  The Ice Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T130951_20180911T131206_C001	Ice Range Averaging Status	records.  The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T131947_20180911T133343_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T133523_20180911T135125_C001	Ocean Range Averaging Status	records.

00.0051.010.1004.0.00400447440040.00400447444000.0004	Occasion Obstan	The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T140912_20180911T141938_C001	Ocean Range Averaging Status	records. The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T142050_20180911T142327_C001	Ocean Range Averaging Status	records. The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T142939_20180911T144320_C001	Ocean Range Averaging Status	records. The Ice Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T144741_20180911T145609_C001	Ice Range Averaging Status	records. The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T145941_20180911T152111_C001	Ocean Range Averaging Status	records. The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T154702_20180911T155444_C001	Ocean Range Averaging Status	records.  The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T155659_20180911T162304_C001	Ocean Range Averaging Status	records. The Ice Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T162647_20180911T162841_C001	Ice Range Averaging Status	records.  The Ice Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T162934_20180911T163418_C001	Ice Range Averaging Status	records.  The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T163929_20180911T164013_C001	Ocean Range Averaging Status	records.  The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T164024_20180911T170326_C001	Ocean Range Averaging Status	records. The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T171118_20180911T171418_C001	Ocean Range Averaging Status	records.
CS_OFFL_SIR_IOPM_2_20180911T173600_20180911T174555_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T175133_20180911T180121_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.  The Ice Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T180852_20180911T181447_C001	Ice Range Averaging Status	records.  The Ocean Range Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T181813_20180911T184517_C001	Ocean Range Averaging Status	records.
CS_OFFL_SIR_IOPM_2_20180911T185202_20180911T185603_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T190733_20180911T194018_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T194759_20180911T195318_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T195955_20180911T200117_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T203100_20180911T203503_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T204519_20180911T204600_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T204641_20180911T205603_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T205849_20180911T212009_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T212649_20180911T212801_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T212808_20180911T213214_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T213744_20180911T214719_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T214907_20180911T215514_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T222353_20180911T225831_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T230706_20180911T230712_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T231758_20180911T234905_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T235028_20180911T235223_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20180911T004015_20180911T004406_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20180911T013003_20180911T013147_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20180911T013835_20180911T014448_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20180911T071752_20180911T071921_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20180911T094741_20180911T094856_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20180911T095349_20180911T095714_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20180911T122337_20180911T122458_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20180911T130348_20180911T130951_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20180911T164014_20180911T164024_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20180911T180455_20180911T180615_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20180911T212330_20180911T212648_C001	Ice Range Averaging Status	The Ice Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPR_2_20180911T014448_20180911T014538_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPR_2_20180911T040301_20180911T040823_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPR_2_20180911T085706_20180911T090441_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPR_2_20180911T095714_20180911T100050_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPR_2_20180911T103704_20180911T104338_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPR_2_20180911T135606_20180911T135758_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPR_2_20180911T231201_20180911T231758_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.

lumber of products with errors:

Product **Test Failed** Description SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20180911T000852\_20180911T001913\_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 20180911T002300 20180911T004014 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\_20180911T010248\_20180911T011220\_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 20180911T011423 20180911T012844 C001 Backscatter Averaging Status more records The Ice Backscatter Averaging Status Flag has been set for one or more CS\_OFFL\_SIR\_IOPM\_2\_20180911T013147\_20180911T013642\_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\_20180911T020435\_20180911T021541\_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 20180911T025255 20180911T030727 C001 Backscatter Averaging Status more records. The Ice Backscatter Averaging Status Flag has been set for one or more CS\_OFFL\_SIR\_IOPM\_2\_20180911T031127\_20180911T031609\_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\_20180911T032349\_20180911T034544\_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 20180911T034548 20180911T034926 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\_20180911T042220\_20180911T044634\_C001 Backscatter Averaging Status more records. The Ice Backscatter Averaging Status Flag has been set for one or more CS\_OFFL\_SIR\_IOPM\_2\_20180911T045111\_20180911T045509\_C001 Ice Backscatter Averaging Status records The Ice Backscatter Averaging Status Flag has been set for one or more CS OFFL SIR IOPM 2 20180911T045529 20180911T045854 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\_20180911T050233\_20180911T051323\_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 20180911T051857 20180911T052851 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\_20180911T054916\_20180911T055722\_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 20180911T060129 20180911T062602 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\_20180911T062940\_20180911T063423\_C001 SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOPM\_2\_20180911T064255\_20180911T071549\_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\_20180911T072723\_20180911T073110\_C001 more records. SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOPM 2 20180911T080022 20180911T080236 C001 Backscatter Averaging Status more records The Ice Backscatter Averaging Status Flag has been set for one or more CS\_OFFL\_SIR\_IOPM\_2\_20180911T080928\_20180911T081450\_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\_20180911T082204\_20180911T084256\_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 20180911T084542 20180911T085706 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\_20180911T090702\_20180911T091055\_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\_20180911T092701\_20180911T093158\_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 20180911T093339 20180911T094333 C001 **Backscatter Averaging Status** more records. The Ice Backscatter Averaging Status Flag has been set for one or more CS\_OFFL\_SIR\_IOPM\_2\_20180911T094856\_20180911T095348\_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 20180911T100050 20180911T100609 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 20180911T100617 20180911T103312 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\_20180911T105401\_20180911T112127\_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\_20180911T114057\_20180911T115552\_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 20180911T120156 20180911T120929 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\_20180911T123032\_20180911T124600\_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 20180911T124855 20180911T130247 C001 **Backscatter Averaging Status** more records The Ice Backscatter Averaging Status Flag has been set for one or more CS\_OFFL\_SIR\_IOPM\_2\_20180911T130951\_20180911T131206\_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\_20180911T131947\_20180911T133343\_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 20180911T133523 20180911T135125 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\_20180911T140912\_20180911T141938\_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\_20180911T142939\_20180911T144320\_C001 Backscatter Averaging Status more records The Ice Backscatter Averaging Status Flag has been set for one or more CS OFFL SIR IOPM 2 20180911T144741 20180911T145609 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 20180911T145941 20180911T152111 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\_20180911T155659\_20180911T162304\_C001 Backscatter Averaging Status The Ice Backscatter Averaging Status Flag has been set for one or more CS OFFL SIR IOPM 2 20180911T162647 20180911T162841 C001 Ice Backscatter Averaging Status records

CS OFFL SIR IOPM 2 20180911T162934 20180911T163418 C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more
	SWH Averaging Status, Ocean	records. The SWH and Ocean Averaging Status Flags have been set for one or
CS_OFFL_SIR_IOPM_2_20180911T163929_20180911T164013_C001	Backscatter Averaging Status SWH Averaging Status, Ocean	more records.  The SWH and Ocean Averaging Status Flags have been set for one or
CS_OFFL_SIR_IOPM_2_20180911T164024_20180911T170326_C001	Backscatter Averaging Status SWH Averaging Status, Ocean	more records. The SWH and Ocean Averaging Status Flags have been set for one or
CS_OFFL_SIR_IOPM_2_20180911T171118_20180911T171418_C001	Backscatter Averaging Status	more records.
CS_OFFL_SIR_IOPM_2_20180911T173600_20180911T174555_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_20180911T175133_20180911T180121_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_20180911T180852_20180911T181447_C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T181813_20180911T184517_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_20180911T185202_20180911T185603_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_20180911T190733_20180911T194018_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_20180911T194759_20180911T195318_C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T195955_20180911T200117_C001	SWH Averaging Status, Ocean	The SWH and Ocean Averaging Status Flags have been set for one or
CS_OFFL_SIR_IOPM_2_20180911T203100_20180911T203503_C001	Backscatter Averaging Status SWH Averaging Status, Ocean	more records.  The SWH and Ocean Averaging Status Flags have been set for one or
CS OFFL SIR IOPM 2 20180911T204641 20180911T205603 C001	Backscatter Averaging Status SWH Averaging Status, Ocean	more records.  The SWH and Ocean Averaging Status Flags have been set for one or
CS_OFFL_SIR_IOPM_2_201809111205041_201809111203003_C001	Backscatter Averaging Status SWH Averaging Status, Ocean	more records. The SWH and Ocean Averaging Status Flags have been set for one or
	Backscatter Averaging Status	more records.  The Ice Backscatter Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPM_2_20180911T212808_20180911T213214_C001	Ice Backscatter Averaging Status SWH Averaging Status, Ocean	records. The SWH and Ocean Averaging Status Flags have been set for one or
CS_OFFL_SIR_IOPM_2_20180911T213744_20180911T214719_C001	Backscatter Averaging Status	more records.
CS_OFFL_SIR_IOPM_2_20180911T214907_20180911T215514_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_20180911T222353_20180911T225831_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_20180911T230154_20180911T230659_C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T230706_20180911T230712_C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPM_2_20180911T231758_20180911T234905_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_20180911T235028_20180911T235223_C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20180911T004015_20180911T004406_C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20180911T013003_20180911T013147_C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20180911T013835_20180911T014448_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_20180911T071752_20180911T071921_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_20180911T094741_20180911T094856_C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOPN_2_20180911T095349_20180911T095714_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_20180911T122337_20180911T122458_C001	Ice Backscatter Averaging Status	The Ice Backscatter Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPN_2_20180911T130348_20180911T130951_C001	Ice Backscatter Averaging Status	records. The Ice Backscatter Averaging Status Flag has been set for one or more
CS OFFL SIR IOPN 2 20180911T164014 20180911T164024 C001	SWH Averaging Status, Ocean	records. The SWH and Ocean Averaging Status Flags have been set for one or
CS_OFFL_SIR_IOPN_2_20180911T180455_20180911T180615_C001	Backscatter Averaging Status  Ice Backscatter Averaging Status	more records.  The Ice Backscatter Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPN_2_20180911T212330_20180911T212648_C001	Ice Backscatter Averaging Status	records. The Ice Backscatter Averaging Status Flag has been set for one or more
CS_OFFL_SIR_IOPR_2_20180911T014448_20180911T014538_C001	SWH Averaging Status, Ocean	records. The SWH and Ocean Averaging Status Flags have been set for one or
	Backscatter Averaging Status SWH Averaging Status, Ocean	more records.  The SWH and Ocean Averaging Status Flags have been set for one or
CS_OFFL_SIR_IOPR_2_20180911T040301_20180911T040823_C001	Backscatter Averaging Status SWH Averaging Status, Ocean	more records. The SWH and Ocean Averaging Status Flags have been set for one or
CS_OFFL_SIR_IOPR_2_20180911T085706_20180911T090441_C001	Backscatter Averaging Status SWH Averaging Status, Ocean	more records.  The SWH and Ocean Averaging Status Flags have been set for one or
CS_OFFL_SIR_IOPR_2_20180911T095714_20180911T100050_C001	Backscatter Averaging Status	more records.
CS_OFFL_SIR_IOPR_2_20180911T103704_20180911T104338_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_20180911T135606_20180911T135758_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_20180911T231201_20180911T231758_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: 67

# 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:

## 6.2 P2P Product Header Analysis

## 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.

Number of products with errors:

Product	Test Failed	Description
CS_OFFL_SIR_IOP_220180911T013703_20180911T022641_C001	Power scaling error	There is an error in the scaling of the L2 waveform for one or more records
CS_OFFL_SIR_IOP_220180911T145052_20180911T154030_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:

Product	Test Failed	Description
CS_OFFL_SIR_IOP_220180910T235750_20180911T004727_C002	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T004727_20180911T013703_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_220180911T013703_20180911T022641_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_220180911T022641_20180911T031617_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_220180911T031617_20180911T040555_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T040555_20180911T045530_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_220180911T045530_20180911T054508_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T054508_20180911T063444_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_220180911T063444_20180911T072422_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T072422_20180911T081358_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T081358_20180911T090335_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T090335_20180911T095311_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_220180911T095311_20180911T104249_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T104249_20180911T113225_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T113225_20180911T122203_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T122203_20180911T131138_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_220180911T131138_20180911T140116_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_220180911T140116_20180911T145052_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_220180911T145052_20180911T154030_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_220180911T154030_20180911T163005_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T163005_20180911T171943_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_220180911T171943_20180911T180919_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T180919_20180911T185857_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_220180911T185857_20180911T194833_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T194833_20180911T203811_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_220180911T203811_20180911T212746_C001	Ocean Range Averaging Status	The Ocean Range Averaging Status Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T212746_20180911T221724_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_220180911T221724_20180911T230700_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.

## 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:

SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOP\_2\_\_20180910T235750\_20180911T004727\_C002 Backscatter Averaging Status more records. SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one CS\_OFFL\_SIR\_IOP\_2\_\_20180911T004727\_20180911T013703\_C001 Backscatter Averaging Status, Ice Backscatter Averaging Status SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one CS\_OFFL\_SIR\_IOP\_2\_\_20180911T013703\_20180911T022641\_C001 Backscatter Averaging Status, Ice or more records. Backscatter Averaging Status SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one Backscatter Averaging Status, Ice CS OFFL SIR IOP 2 20180911T022641 20180911T031617 C001 or more records. **Backscatter Averaging Status** SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOP\_2\_\_20180911T031617\_20180911T040555\_C001 Backscatter Averaging Status more records. SWH Averaging Status, Ocean Backscatter Averaging Status, Ice The SWH, Ocean and Ice Averaging Status Flags have been set for one CS\_OFFL\_SIR\_IOP\_2\_\_20180911T040555\_20180911T045530\_C001 or more records. Backscatter Averaging Status SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one CS OFFL SIR IOP 2 20180911T045530 20180911T054508 C001 Backscatter Averaging Status, Ice or more records. Backscatter Averaging Status SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one CS OFFL SIR IOP 2 20180911T054508 20180911T063444 C001 Backscatter Averaging Status, Ice Backscatter Averaging Status SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOP\_2\_\_20180911T063444\_20180911T072422\_C001 Backscatter Averaging Status SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one CS\_OFFL\_SIR\_IOP\_2\_\_20180911T072422\_20180911T081358\_C001 Backscatter Averaging Status, Ice Backscatter Averaging Status SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOP\_2\_\_20180911T081358\_20180911T090335\_C001 Backscatter Averaging Status SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one CS\_OFFL\_SIR\_IOP\_2\_\_20180911T090335\_20180911T095311\_C001 Backscatter Averaging Status, Ice or more records. Backscatter Averaging Status SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOP 2 20180911T095311 20180911T104249 C001 Backscatter Averaging Status SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one CS\_OFFL\_SIR\_IOP\_2\_\_20180911T104249\_20180911T113225\_C001 Backscatter Averaging Status, Ice Backscatter Averaging Status SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS OFFL SIR IOP 2 20180911T113225 20180911T122203 C001 Backscatter Averaging Status more records. SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or Backscatter Averaging Status SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one CS OFFL SIR IOP 2 20180911T131138 20180911T140116 C001 Backscatter Averaging Status, Ice Backscatter Averaging Status SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one CS OFFL SIR IOP 2 20180911T140116 20180911T145052 C001 Backscatter Averaging Status, Ice Backscatter Averaging Status SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one Backscatter Averaging Status, Ice CS\_OFFL\_SIR\_IOP\_2\_\_20180911T145052\_20180911T154030\_C001 or more records **Backscatter Averaging Status** SWH Averaging Status, Ocean Backscatter Averaging Status The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOP\_2\_\_20180911T154030\_20180911T163005\_C001 more records. SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one CS\_OFFL\_SIR\_IOP\_2\_\_20180911T163005\_20180911T171943\_C001 Backscatter Averaging Status, Ice or more records. **Backscatter Averaging Status** SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOP\_2\_\_20180911T171943\_20180911T180919\_C001 Backscatter Averaging Status more records. SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one CS\_OFFL\_SIR\_IOP\_2\_\_20180911T180919\_20180911T185857\_C001 Backscatter Averaging Status, Ice or more records. Backscatter Averaging Status SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOP\_2\_\_20180911T185857\_20180911T194833\_C001 **Backscatter Averaging Status** more records. SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one CS OFFL SIR IOP 2 20180911T194833 20180911T203811 C001 Backscatter Averaging Status, Ice Backscatter Averaging Status SWH Averaging Status, Ocean The SWH and Ocean Averaging Status Flags have been set for one or CS\_OFFL\_SIR\_IOP\_2\_\_20180911T203811\_20180911T212746\_C001 Backscatter Averaging Status SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one Backscatter Averaging Status, Ice CS\_OFFL\_SIR\_IOP\_2\_\_20180911T212746\_20180911T221724\_C001 or more records Backscatter Averaging Status SWH Averaging Status, Ocean The SWH, Ocean and Ice Averaging Status Flags have been set for one CS\_OFFL\_SIR\_IOP\_2\_\_20180911T221724\_20180911T230700\_C001 Backscatter Averaging Status, Ice or more records. **Backscatter Averaging Status** 

## 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:

Product	Test Failed	Description
CS_OFFL_SIR_IOP_220180910T235750_20180911T004727_C002	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T004727_20180911T013703_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.

CS_OFFL_SIR_IOP_220180911T013703_20180911T022641_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T031617_20180911T040555_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T040555_20180911T045530_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T045530_20180911T054508_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T054508_20180911T063444_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T063444_20180911T072422_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T072422_20180911T081358_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T081358_20180911T090335_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T090335_20180911T095311_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T095311_20180911T104249_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T104249_20180911T113225_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T113225_20180911T122203_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T122203_20180911T131138_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T131138_20180911T140116_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T140116_20180911T145052_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T145052_20180911T154030_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T154030_20180911T163005_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T163005_20180911T171943_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T171943_20180911T180919_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T180919_20180911T185857_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T185857_20180911T194833_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T194833_20180911T203811_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T203811_20180911T212746_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T212746_20180911T221724_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.
CS_OFFL_SIR_IOP_220180911T221724_20180911T230700_C001	Ocean Retracking Quality Flag	The Ocean Retracking Quality Flag has been set for one or more records.