



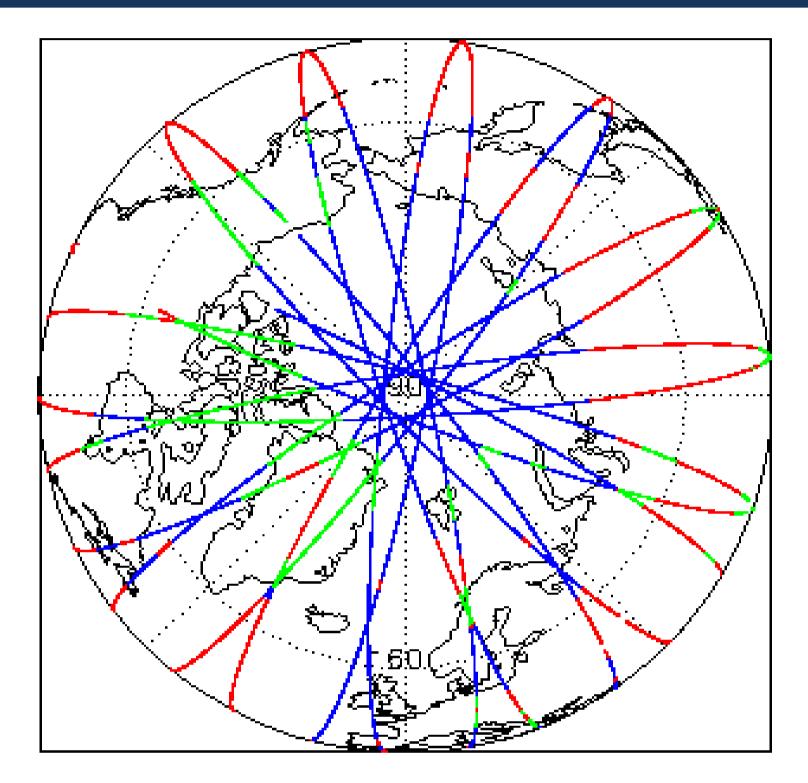
# 1. Overview

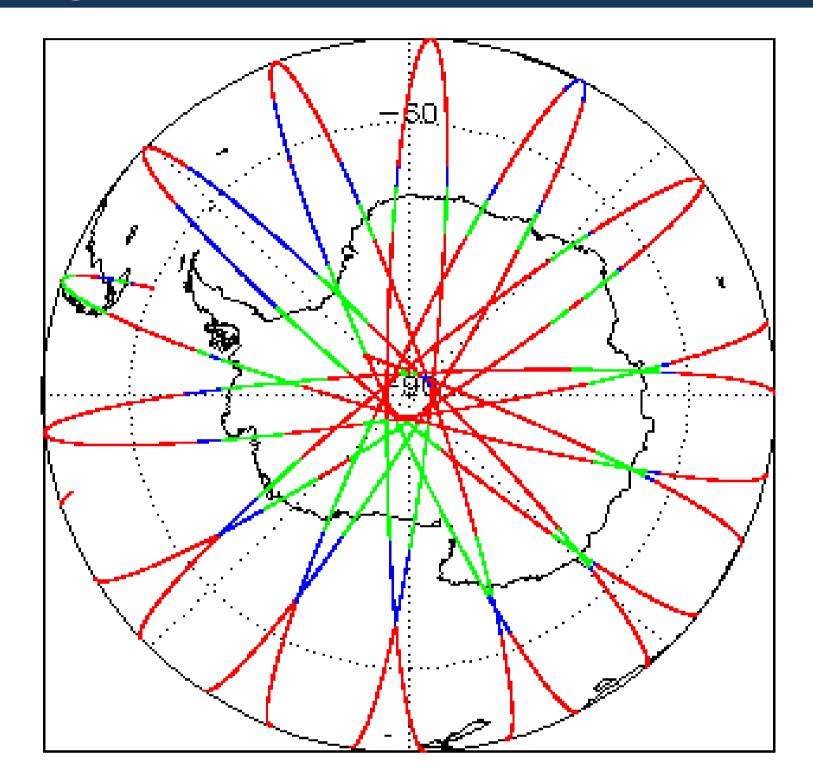
| <b>Report Production:</b> | 15-Apr-2020   |  |
|---------------------------|---|--|
| Processor Used:           | CryoSat Ocean Processor   |  |
| Data Used:                | Intermediate Ocean Products (IOP)<br>L1B, L2 & P2P Science Data |  |

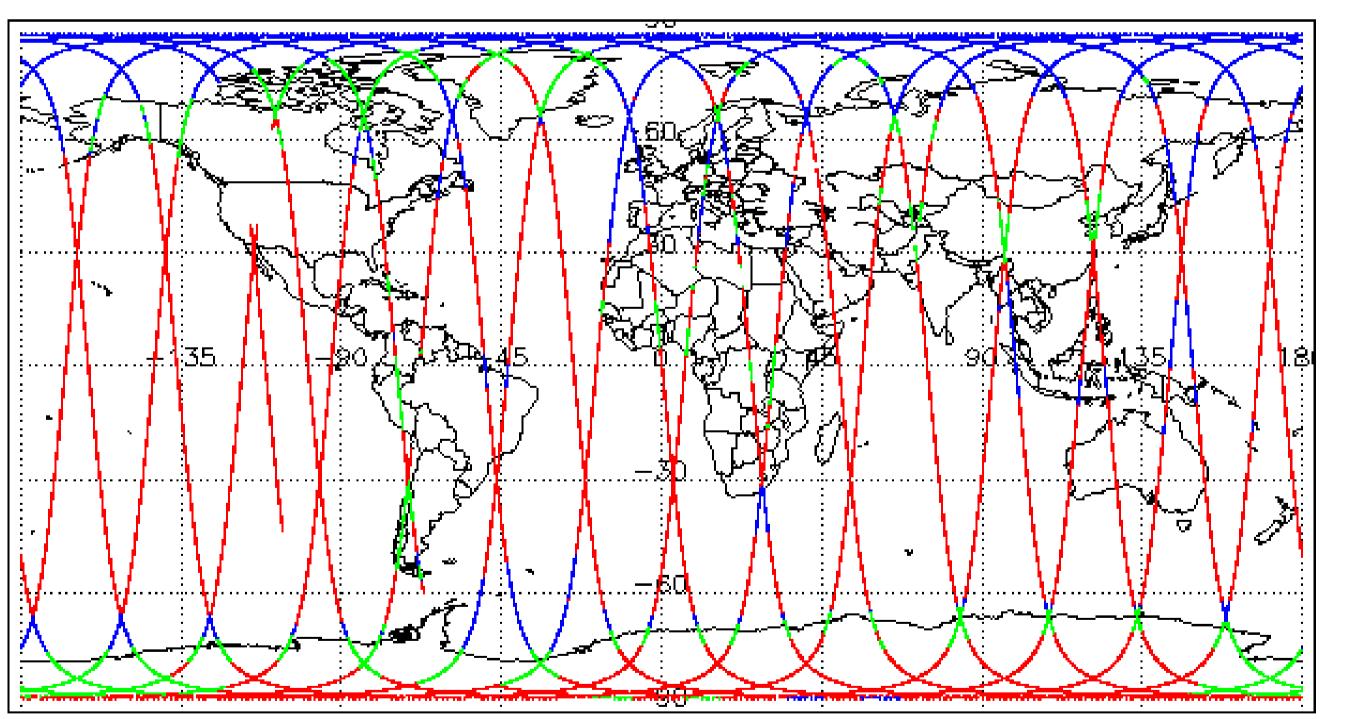
| Check                                      | L1 & L2                      | P2P             |
|--|------------------------------|-----------------|
| Server check: science-pds.cryosat.esa.int  | Nominal                      | Nominal         |
| Server check: calval-pds.cryosat.esa.int   | Nominal                      | Nominal         |
| Product Software Check                     | Nominal                      | Nominal         |
| Product Format Check                       | Nominal                      | Nominal         |
| Product Header Analysis                    | Nominal                      | Nominal         |
| Auxiliary Data File Usage Check            | Nominal                      | Nominal         |
| Auxiliary Correction Error Check           | See Section 5.4              | See Section 6.4 |
| 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              | See Section 6.6 |
| Ocean Retracking Quality Check             | See Section 5.7              | See Section 6.7 |

| ĺ | Mission / Instru | iment News      |
|---|------------------|-----------------|
|   | 10-Apr-2020      | None            |
|   | 11-Apr-2020      | None            |
|   | 12-Apr-2020      | Nothing planned |

# 2. Global Coverage







Mode 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).



#### **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.

L1B Processing Quality HR: The I1b\_proc\_flag\_hr flag is currently set all L1B IOPR and IOPN products because the I1b\_processing\_quality\_hr field is not correctly configured in the OSAR and OSARIn chains. A modification is required in the next release.

Number of products with errors:

#### 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:

0

0

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:

| Product   | Test Failed         | Description  |
|---|---------------------|--|
| CS_OFFL_SIR_IOPM1B_20200411T104156_20200411T105232_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.

16

Number of products with errors:

| Product   | Test Failed  | Description  |
|---|--------------|--|
| CS_OFFL_SIR_IOPM1B_20200410T235300_20200411T002143_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_IOPM1B_20200411T092333_20200411T092516_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_IOPN1B_20200411T035744_20200411T035838_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_IOPN1B_20200411T062431_20200411T063004_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_IOPN1B_20200411T071521_20200411T072012_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_IOPN1B_20200411T085426_20200411T085535_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_IOPN1B_20200411T092624_20200411T093224_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_IOPN1B_20200411T103342_20200411T103936_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_IOPN1B_20200411T135552_20200411T140003_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_IOPN1B_20200411T151439_20200411T151610_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_IOPN1B_20200411T215914_20200411T220426_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_IOPR1B_20200411T004002_20200411T004304_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_IOPR1B_20200411T090333_20200411T090514_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_IOPR1B_20200411T134256_20200411T134509_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_IOPR1B_20200411T165917_20200411T170334_C001 | Loss of Echo | The tracking echo is missing for one or more records |
| CS_OFFL_SIR_IOPR1B_20200411T170340_20200411T170556_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).

Currently, there are some common auxiliary correction errors 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.

> ECMWF Meteo Corrections: Currently the following corrections are not computed over CONTINENTAL ICE: Dry Tropospheric Corection, Wet Tropospheric Correction, Inverse Barometric Correction and the U-Wind and V-Wind components of the ECMWF model wind vector. This is a known anomaly (CRYO-COP-3) and will be resolved in a future IPF update. The affected products are not reported in the table below.

> Sea State Bias & Sea State Bias PLRM: The error value is currently set for products over sea ice, but this is to be expected.

> Mean Sea Surface: The error value is currently set for products over land and sea ice, but this is to be expected.

- > Mean Dynamic Topography: The error value is currently set for products over land and sea ice, but this is to be expected.
- > Altimetric Wind Speed Error: The error value is currently set for products over land and sea ice, but this is to be expected.

Number of products with errors:

54

| Product   | Test Failed  | Description   |
|---|--|---|
| CS_OFFL_SIR_IOPM_2_20200411T082802_20200411T083725_C001 | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_IOPM_2_20200411T122627_20200411T125413_C001 | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_IOPM_2_20200411T235141_20200411T235245_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOPN_2_20200411T012936_20200411T013112_C001 | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_IOPN_2_20200411T025942_20200411T030058_C001 | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_IOPN_2_20200411T030632_20200411T030951_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOPN_2_20200411T035744_20200411T035838_C001 | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_IOPN_2_20200411T040044_20200411T040201_C001 | Total Geocentric Ocean Tide (GOT)  | There is an error with the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records   |
| CS_OFFL_SIR_IOPN_2_20200411T043900_20200411T044018_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOPN_2_20200411T044527_20200411T044840_C001 | Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES) Non-Equilibrium Long Period | There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1), and tidal corrections for one or more records             |
| CS_OFFL_SIR_IOPN_2_20200411T061955_20200411T062232_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOPN_2_20200411T062431_20200411T063004_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOPN_2_20200411T071521_20200411T072012_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOPN_2_20200411T075902_20200411T080138_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOPN_2_20200411T085426_20200411T085535_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOPN_2_20200411T092624_20200411T093224_C001 | Topography (1), Total Geocentric Ocean<br>Tide (FES), Non-Equilibrium Long Period                                      | Topography (solution 1), the Total Geocentric Ocean Tide (solution 2:<br>FES) and the Non-Equilibrium Long Period Ocean Tide for one or more<br>records |
| CS_OFFL_SIR_IOPN_2_20200411T103342_20200411T103936_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOPN_2_20200411T11631_20200411T111819_C001  | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_IOPN_2_20200411T112629_20200411T112854_C001 | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_IOPN_2_20200411T121354_20200411T121800_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOPN_2_20200411T135552_20200411T140003_C001 | Mean Sea Surface (1), Total Geocentric<br>Ocean Tide (GOT)   | There is an error with the MSS height (solution 1) and the Total Geocentric Ocean Tide (solution 1: GOT) for one or more records                        |
| CS_OFFL_SIR_IOPN_2_20200411T143605_20200411T143937_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOPN_2_20200411T162353_20200411T162517_C001 | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_IOPN_2_20200411T170556_20200411T170725_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOPN_2_20200411T180253_20200411T180403_C001 | Mean Dynamic Topography (1)  | There is an error with the Mean Dynamic Topography height for one or more records   |
| CS_OFFL_SIR_IOPN_2_20200411T184524_20200411T184633_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOPN_2_20200411T193954_20200411T194149_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
|   |  |   |

| Description         Trace with their induction         Trace with their induction it           03, 0FTL SRL OFTL 2. RECONTITIZED 12. COOL         Point Sale (Link Olymon)         The is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Applie (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Applie (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Applie (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Applie (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Applie (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Applie (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Applie (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Applie (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Applie (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Applie (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Applie (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Applie (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Applie (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Applie (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Applie (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Propriet (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Propriet (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Propriet (address) is an exert of the bill could (soluth ') and the liter Diversity<br>Propriety Propriet (addres) is an exert of the bill      | CS_OFFL_SIR_IOPN_2_20200411T202330_20200411T202547_C001 | Mean Sea Surface (1), Mean Dynamic     | There is an error with the MSS height (solution 1) and the Mean Dynamic |
|---|---|--|---|
| Science Control Sector 112 Sector 122 Secto | 00_011L_0111_2_202004111202000_202004111202047_00001    |  |   |
| CSUPPLICATEL_SINCENT_2_SOLUCE TRANSPECTOR         Permit (particle) (paging) (1)         Prove Records           CS_0_FTL_SIN_DPN_2_SOLUCET_2SINCENTT22016_COP         Mean Dynamic Tapography (1)         Prove Records           CS_0_FTL_SIN_DPN_2_SOLUCET_T22016_2DE0041TT22016_COP         Mean Dynamic Tapography (1)         Prove Records           CS_0_FFL_SIN_DPN_2_SOLUCET_T22016_2DE0041TT02016_COP         Mean Des Solution (1), Mean Dynamic         Transis on recent the Mean Dynamic Tapography (1)           CS_0_FFL_SIN_DPN_2_SOLUCET_T22016_2DE0041TT02106_COP         Mean Des Solution (1), Mean Dynamic         Transis on recent the Mean Dynamic Tapography (1)           CS_0_FFL_SIN_DPN_2_SOLUCET_T02106_2DE0041TT02106_COP         Mean Des Solution (1), Mean Dynamic         Transis on recent the Mean Dynamic Tapography (1)           CS_0_FFL_SIN_DPN_2_SOLUCET_T02106_2DE0041TT02106_COP         Mean Des Solution (1), Mean Dynamic         Transis on recent the Mean Dynamic Tapography (1)           CS_0_FFL_SIN_DPN_2_SOLUCET_T02106_2DE0041TT02106_COP         Mean Des Solution (1), Mean Dynamic         Transis on recent the Mean Dynamic Tapography Med(1) for one of recent tapography (1)           CS_0_FFL_SIN_DPN_2_SOLUCET_T02106_2DE0041TT02505_COP         Mean Des Solution (1), Mean Dynamic         Transis on recent the MEGN Dent (1) for the Dann Dynamic Tapography (2)           CS_0_FFL_SIN_DPN_2_SOLUCET_T02505_LOP         Mean Des Solution (1), Mean Dynamic         Transis on recent the MEGN Dent (1) for the Dann Dynamic Tapography (2)           CS_0_FFL_SIN_DP   | CS_OFFL_SIR_IOPN_2_20200411T215914_20200411T220426_C001 |  |   |
| Control Services         Provide Control         Provide Control           CB_OFF_SERUOPE_2.0200111123502_0200111123502_02001         Tools and the Same Same Control Service Cont  | CS_OFFL_SIR_IOPN_2_20200411T224901_20200411T225157_C001 | Mean Dynamic Topography (1)            |   |
| County Structure         Transport  | CS_OFFL_SIR_IOPN_2_20200411T225823_20200411T230118_C001 | Mean Dynamic Topography (1)            |   |
| CSDPPL_SR_UPPL_2X000F1102600_022001       Tocography (1)       Tocography (2)       Tocography (2)         CSDPPL_SR_UPPL_2X000F110260_022001       Mon Sis Suface (1), Mon Dynamic       Tocography (2)       Tocography (2)         CS_DPPL_SR_UPPL_2X000F1102751_022001       Mon Sis Suface (1), Mon Dynamic       Tocography (2)       Tocography (2)         CS_DPPL_SR_UPPL_2X000F1102751_022001       Mon Sis Suface (1), Mon Dynamic       Tocography (2)       Tocography (2)         CS_DPPL_SR_UPPL_2X000F1102751_022011       Mon Sis Suface (1), Mon Dynamic       Tocography (2)       Tocography (2)         CS_DPPL_SR_UPPL_2X000F11027521_022011       Mon Sis Suface (1), Mon Dynamic       Tocography (2)       Tocography (2)         CS_DPPL_SR_UPPL_2X000F11027521_022011       Mon Sis Suface (1), Mon Dynamic       Tocography (2)       Tocography (2)         CS_DPPL_SR_UPPL_2X000F11027521_022011       Mon Sis Suface (1), Mon Dynamic       Tocography (2)       Tocography (2)         CS_DPPL_SR_UPPL_2X000F11027521_022011       Mon Sis Suface (1), Mon Dynamic       Tocography (2)       Tocography (2)         CS_DPPL_SR_UPPL_2X000F11027521_022011       Mon Sis Suface (1), Mon Dynamic       Tocography (2)       Tocography (2)         CS_DPPL_SR_UPPL_2X000F11027522_0220111027521_02001       Mon Sis Suface (1), Mon Dynamic       Tocography (2)       Tocography (2)       Tocography (2)         CS_DPPL_SR_UPPL_2X000F110275   | CS_OFFL_SIR_IOPN_2_20200411T233909_20200411T234248_C001 |  |   |
| Dec UPL Site UPPL 2 200041102751 2020041102252 0001       Mem Dynamic Tappogaphy (a)       Toppogaphy (a) </td <td>CS_OFFL_SIR_IOPR_2_20200411T003241_20200411T004002_C001</td> <td></td> <td></td>  | CS_OFFL_SIR_IOPR_2_20200411T003241_20200411T004002_C001 |  |   |
| Cold PPE_SR_COPR_2_20200411102531_2020041111025242_C001         Mean Source (1). Mean Dynamic<br>Topography (1)         more records           CS_OPPE_SR_COPR_2_202004111025422_202004111025744_C001         Mean Sou Surface (1). Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OPPE_SR_COPR_2_202004111025818_202004111025744_C001         Mean Sou Surface (1). Mean Dynamic<br>Topography height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)           CS_OPPE_SR_COPR_2_202004111025818_202004111057842_202004111058420_C001         Mean Sea Surface (1). Mean Dynamic<br>Topography height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)           CS_OPFL_SIR_JOPR_2_20200411105784_202004111057842_20201         Mean Sea Surface (1). Mean Dynamic<br>Topography height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)           CS_OPFL_SIR_JOPR_2_202004111105784_20201         Mean Sea Surface (1). Mean Dynamic<br>Topography height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)   | CS_OFFL_SIR_IOPR_2_20200411T021046_20200411T021818_C001 |  |   |
| Control         Topography (1)         Topography (1)         Topography (1)           CS_OFF_SIR_JOPR_2_20200411103502_202004111035744_0001         Mean Sea Surface (1), Mean Dynamic         These is an error with the MSD height (solution 1) and the Mean Dynamic           CS_OFF_SIR_JOPR_2_202004111052519_202004111053025_0001         Mean Sea Surface (1), Mean Dynamic         These is an error with the MSD height (solution 1) and the Mean Dynamic           CS_OFF_SIR_JOPR_2_202004111053025_0001         Mean Sea Surface (1), Mean Dynamic         These is an error with the MSD height (solution 1) and the Mean Dynamic           CS_OFF_SIR_JOPR_2_202004111054302_0000111004400         Mean Sea Surface (1), Mean Dynamic         These is an error with the MSD height (solution 1) and the Mean Dynamic           CS_OFF_SIR_UOPR_2_202004111074413_202004111074621         Mean Sea Surface (1), Mean Dynamic         These is an error with the MSD height (solution 1) and the Mean Dynamic           CS_OFF_SIR_UOPR_2_202004111074413_202004111074621         Mean Sea Surface (1), Mean Dynamic         These is an error with the MSD height (solution 1) and the Mean Dynamic           CS_OFF_SIR_UOPR_2_2020041110744143_202004111074621         Mean Sea Surface (1), Mean Dynamic         These is an error with the MSD height (solution 1) and the Mean Dynamic           CS_OFF_SIR_UOPR_2_20200411107474_202004111074621         Mean Sea Surface (1), Mean Dynamic         These is an error with the MSD height (solution 1) and the Mean Dynamic           CS_OFF_SIR_UOPR_2_2020041111064420         Mean Sea Surface (1   | CS_OFFL_SIR_IOPR_2_20200411T022731_20200411T022929_C001 | Mean Dynamic Topography (1)            |   |
| Science Service         Consequency (1)         Topography (1)         Topography (1)           CS_OFFL_SIR_UOPR_2_20200411T052521_20001         Mean See Surface (1). Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_UOPR_2_20200411T052521_20200411T053522_20001         Mean See Surface (1). Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_UOPR_2_20200411T071521_20001         Mean See Surface (1). Mean Dynamic<br>Topography (1)         There is a error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_UOPR_2_20200411T071521_20001         Mean See Surface (1). Mean Dynamic<br>Topography (1)         There is a error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_UOPR_2_20200411T084748_212020411T071521_20001         Mean See Surface (1). Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_UOPR_2_20200411T1024108_2020411T108442_20001         Mean See Surface (1). Mean Dynamic<br>Topography (1)         There is a error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_UOPR_2_20200411T102412_2020411T103452_2000411T12454_20001         Mean See Surface (1). Mean Dynamic<br>Topography Meight (solution 1)         There is a error with the MSS height (solution 1) and the Mean Dynamic<br>Topography Meight (solution 1)           CS_OFFL_SIR_UOPR_2_20200411T1245  | CS_OFFL_SIR_IOPR_2_20200411T034558_20200411T035622_C001 |  |   |
| CS_OFFL_SIR_IOPR_2_2020411103581_2000         Tooggraphy (1)         Topggraphy height (solution 1)           CS_OFFL_SIR_IOPR_2_2020411103582_000411103582_C001         Mean Sea Surface (1), Mean Dynamic<br>Topggraphy height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topggraphy height (solution 1)           CS_OFFL_SIR_IOPR_2_20204111071413_0001         Mean Sea Surface (1), Mean Dynamic<br>Topggraphy height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topggraphy height (solution 1)           CS_OFFL_SIR_IOPR_2_20204111071413_02004111071521_C001         Mean Sea Surface (1), Mean Dynamic<br>Topggraphy height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topggraphy height (solution 1)           CS_OFFL_SIR_IOPR_2_20204111084748_20200411108498_C001         Mean Dynamic Topggraphy (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topggraphy height (solution 1)         Topggraphy height (solution 1) and the Mean Dynamic<br>Topggraphy height (solution 1) and the Mean Dynamic<br>Topggraphy height (solution 1)         Topggraphy height (solution 1) and the Mean Dynamic<br>Topggraphy height (solution 1) and the Mean Dyna   | CS_OFFL_SIR_IOPR_2_20200411T035622_20200411T035744_C001 | • • •                                  |   |
| DS OFFL SIR JOPR 2 202004111033821 202004111033825 2020         Topography (1)         Topography height (solution 1)           CS_OFFL_SIR_JOPR 2 2020041110771413_202004111071413_20201         Mean Ses Surface (1), Mean Dynamic<br>Topography height (solution 1) and the Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)           CS_OFFL_SIR_JOPR 2 2020041110771413_202004111071521_C001         Mean Ses Surface (1), Mean Dynamic<br>Topography height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)           CS_OFFL_SIR_JOPR 2 20200411108409_202004111085426_C001         Mean Ses Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_JOPR 2 202004111108426_C001         Mean Ses Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_JOPR 2 202004111102342_C020041111123342_C001         Mean Ses Surface (1), Mean Dynamic<br>Topography height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)           CS_OFFL_SIR_JOPR 2 202004111102342_C020041111152556_2020041111153552_C001         Mean Ses Surface (1), Mean Dynamic<br>Topography height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)           CS_OFFL_SIR_JOPR 2 2020041111135556_2020041111153544_C001         Mean Ses Surface (1), Mean Dy   | CS_OFFL_SIR_IOPR_2_20200411T052818_20200411T053521_C001 |  |   |
| CS_OFFL_SIR_IOPR_2_202004111071413_202004111071521_C001         Topography (1)         Topography leight (solution 1)           CS_OFFL_SIR_IOPR_2_202004111071413_202004111071521_C001         Mean Ses Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography leight (solution 1)           CS_OFFL_SIR_IOPR_2_202004111084909_202004111084909_C001         Mean Ses Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography leight (solution 1)           CS_OFFL_SIR_IOPR_2_202004117102902_20200411T121354_C001         Mean Ses Surface (1), Mean Dynamic<br>Topography leight (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography leight (solution 1)           CS_OFFL_SIR_IOPR_2_20200411T152556_20200411T152556_20200411T152556_20200411T152556_20200411T152556_20200411T152556_20200411T152556_20200411T152556_20200411T152556_20200411T152556_20200411T152556_20200411T152556_20200411T152556_20200411T155344_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography leight (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography leight (solution 1)           CS_OFFL_SIR_IOPR_2_20200411T152556_20200411T155344_C001         Mean Sea Surface (1),   | CS_OFFL_SIR_IOPR_2_20200411T053521_20200411T053925_C001 |  |   |
| CS_OFFL_SIR_IOPR_2_2020041110/1415_2020041110/1415_2020041         Topography (1)         Topography (eight (solution 1)           CS_OFFL_SIR_IOPR_2_202004111084748_202004111084909_C001         Mean Dynamic Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)           CS_OFFL_SIR_IOPR_2_202004111084708_202004111084206_C001         Mean Sea Surface (1), Mean Dynamic Topography height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)           CS_OFFL_SIR_IOPR_2_202004111102714_202004111103342_C001         Mean Sea Surface (1), Mean Dynamic Topography height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)           CS_OFFL_SIR_IOPR_2_202004111120902_20200411112354_C001         Mean Sea Surface (1), Mean Dynamic Topography height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)           CS_OFFL_SIR_IOPR_2_202004111134634_202004111135556_C001         Mean Sea Surface (1), Mean Dynamic Topography height (solution 1) and the Mean Dynamic Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)           CS_OFFL_SIR_IOPR_2_20200411115344_C001         Mean Sea Surface (1), Mean Dynamic Topography height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)           CS_OFFL_SIR_IOPR_2_202004111170725_202004111171504_C001         Mean Sea Surface (1), Mean Dynamic Topography height (solution 1)         There is an error with   | CS_OFFL_SIR_IOPR_2_20200411T070954_20200411T071413_C001 |  |   |
| CS_OFFL_SIR_IOPR_2_20200411T08449_20200411T084308_C001         Initial Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)           CS_OFFL_SIR_IOPR_2_20200411T102714_20200411T103342_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)           CS_OFFL_SIR_IOPR_2_20200411T102714_20200411T12344_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)           CS_OFFL_SIR_IOPR_2_20200411T134534_20200411T134542_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)           CS_OFFL_SIR_IOPR_2_20200411T134534_20200411T135552_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_IOPR_2_20200411T132556_20200411T135444_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)           CS_OFFL_SIR_IOPR_2_20200411T170726_20200411T171622_C001         Total Geocentric Ocean Tide (GOT),<br>Total Geocentric Ocean Tide (FES), Non-<br>GOT and solution 2; FES) and the Non-equilbrum Long Period Ocean Tide<br>Fealibrum Long Period Ocean Tide<br>Fealibrum Long Period Ocean Tide<br>Fealibrum Long Period Ocean Tide (SOT),<br>Total Geocentric Ocean Tide (FES), Non-<br>GOT and solution 1; He   | CS_OFFL_SIR_IOPR_2_20200411T071413_20200411T071521_C001 |  |   |
| CS_OFFL_SIR_IOPR_2_20200411T102714_20200411T103342_C001         Topography (1)         Topography leight (solution 1)           CS_OFFL_SIR_IOPR_2_20200411T102714_20200411T103342_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_IOPR_2_20200411T102902_20200411T12354_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_IOPR_2_20200411T135552_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_IOPR_2_20200411T152556_20200411T153444_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_IOPR_2_20200411T170725_20200411T17054_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography Height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_IOPR_2_20200411T170725_20200411T17054_20200411T171542_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography Height (solution 1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_IOPR_2_20200411T171545_20200411T171545_20200411T171545_20200411T171545_20200411T171545_20200411T171545_20200411T171545_20200411T171545_20200411T171545_20200411T171545_20200411T171545_20200411T171545_20200411T171545_2   | CS_OFFL_SIR_IOPR_2_20200411T084748_20200411T084909_C001 | Mean Dynamic Topography (1)            |   |
| CS_OFFL_SIR_IOPR_2_20200411T102714_20200411T103342_C001       Topography (1)       Topography height (solution 1)         CS_OFFL_SIR_IOPR_2_20200411T120902_20200411T121354_C001       Mean Sea Surface (1), Mean Dynamic<br>Topography (1)       There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)         CS_OFFL_SIR_IOPR_2_20200411T136552_C001       Mean Sea Surface (1), Mean Dynamic<br>Topography (1)       There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)         CS_OFFL_SIR_IOPR_2_20200411T152556_20200411T153444_C001       Mean Sea Surface (1), Mean Dynamic<br>Topography (1)       There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)         CS_OFFL_SIR_IOPR_2_20200411T152556_20200411T153444_C001       Mean Sea Surface (1), Mean Dynamic<br>Topography (1)       There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)         CS_OFFL_SIR_IOPR_2_20200411T170725_20200411T17504_C001       Mean Sea Surface (1), Mean Dynamic<br>Topography (1)       There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)         CS_OFFL_SIR_IOPR_2_20200411T17545_20200411T17622_C001       Total Geocentric Ocean Tide (GOT),<br>Total Geocentric Ocean Tide (GOT),<br>Total Geocentric Ocean Tide       There is an error with the MSS height (solution 1)         CS_OFFL_SIR_IOPR_2_20200411T176453_20200411T17625_C001       Mean Sea Surface (1), Mean Dynamic<br>Topography (1)       There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Top   | CS_OFFL_SIR_IOPR_2_20200411T084909_20200411T085426_C001 |  |   |
| CS_OFFL_SIR_IOPR_2_20200411112034_20001         Topography (1)         Topography height (solution 1)           CS_OFFL_SIR_IOPR_2_202004111134534_202004111135552_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_IOPR_2_202004111135552_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_IOPR_2_202004111155556_202004111153444_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_IOPR_2_202004111170725_202004111171504_C001         Mean Sea Surface (1), Mean Dynamic<br>Topography (1)         There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)           CS_OFFL_SIR_IOPR_2_202004111171545_202004111171622_C001         Total Geocentric Ocean Tide (GOT),<br>Total Geocentric Ocean Tide (FES), Non-<br>Total Geocentric Ocean Tide (GOT),<br>Total Geocentric Ocean Tide (GOT),<br>Top   | CS_OFFL_SIR_IOPR_2_20200411T102714_20200411T103342_C001 |  |   |
| CS_OFFL_SIR_IOPR_2_202004111134534_202004111133532_20001Topography (1)Topography height (solution 1)CS_OFFL_SIR_IOPR_2_202004111152556_202004111153444_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1)There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)CS_OFFL_SIR_IOPR_2_202004111170725_20200411117054_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1)There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)CS_OFFL_SIR_IOPR_2_20200411117055_202004111171622_C001Total Geocentric Ocean Tide (GOT),<br>Total Geocentric Ocean Tide (GOT),<br>Total Geocentric Ocean Tide (FES), Non<br>Equilibrium Long Period Ocean TideThere is an error with the Total Geocentric Ocean Tide height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)CS_OFFL_SIR_IOPR_2_202004111171545_202004111171622_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1)There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)CS_OFFL_SIR_IOPR_2_202004111120017_2020041111200255_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean Tide (GOT)There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography (solution 1), the Total Geocentric Ocean Tide (solution 1)CS_OFFL_SIR_IOPR_2_20200411120017_202004111200255_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (solution 1), the Total Geocentric Ocean Tide (solution 1)CS_OFFL_SIR_IOPR_2_202004111202547_202004111203241_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (solution 1), the Total Geocentric Ocean Tide (solution 1)CS_OFFL_SIR_IOPR_2_202004111220426_202004111220326_0001Mean  | CS_OFFL_SIR_IOPR_2_20200411T120902_20200411T121354_C001 |  |   |
| CS_OFFL_SIR_IOPR_2_20200411T152536_20200411T153444_C001Topography (1)Topography height (solution 1)CS_OFFL_SIR_IOPR_2_20200411T170725_20200411T171504_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1)There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)CS_OFFL_SIR_IOPR_2_20200411T171545_20200411T171622_C001Total Geocentric Ocean Tide (GOT),<br>Total Geocentric Ocean Tide (FES), Non<br>Equilibrium Long Period Ocean TideThere is an error with the Total Geocentric Ocean Tide height (solution 1)CS_OFFL_SIR_IOPR_2_20200411T184633_20200411T185348_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1)There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)CS_OFFL_SIR_IOPR_2_20200411T200117_20200411T200255_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography (solution 1), the Total Geocentric Ocean Tide (solution 1)CS_OFFL_SIR_IOPR_2_20200411T200117_20200411T200255_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)There is an error with the MSS height (solution 1), the Mean Dynamic<br>GOT for one or more recordsCS_OFFL_SIR_IOPR_2_20200411T202547_20200411T203241_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1)There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)CS_OFFL_SIR_IOPR_2_20200411T202547_20200411T203241_C001Mean Sea Surface (1), Mean Dynamic<br>Topography height (solution 1)There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1) <td>CS_OFFL_SIR_IOPR_2_20200411T134534_20200411T135552_C001</td> <td></td> <td></td>   | CS_OFFL_SIR_IOPR_2_20200411T134534_20200411T135552_C001 |  |   |
| CS_OFFL_SIR_IOPR_2_202004111170725_20200411117034_C0011Topography (1)Topography height (solution 1)CS_OFFL_SIR_IOPR_2_202004111171545_202004111171545_202004111171545_202004111171545_202004111171545_202004111171545_2020041111171545_2020041111171545_2020041111171545_2020041111171545_2020041111171545_2020041111171545_2020041111171545_202004111111111111111111111111111111111  | CS_OFFL_SIR_IOPR_2_20200411T152556_20200411T153444_C001 |  |   |
| CS_OFFL_SIR_IOPR_2_20200411T171545_20200411T171622_C001Total Geocentric Ocean Tide (FES), Non-<br>Equilibrium Long Period Ocean TideGOT and solution 2: FES) and the Non-equilibrium Long Period Ocean<br>Tide height for one or more recordsCS_OFFL_SIR_IOPR_2_20200411T184633_20200411T185348_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1)There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)CS_OFFL_SIR_IOPR_2_20200411T200117_20200411T200255_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography (solution 1), the Total Geocentric Ocean Tide (solution 1:<br>GOT) for one or more recordsCS_OFFL_SIR_IOPR_2_20200411T202547_20200411T203241_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1)There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography (1)CS_OFFL_SIR_IOPR_2_20200411T202547_20200411T203241_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1)There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)CS_OFFL_SIR_IOPR_2_20200411T202547_20200411T203241_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1)There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)   | CS_OFFL_SIR_IOPR_2_20200411T170725_20200411T171504_C001 |  |   |
| CS_OFFL_SIR_IOPR_2_202004111184033_202004111183348_C001       Topography (1)       Topography (1)       Topography (1)         CS_OFFL_SIR_IOPR_2_202004117200117_202004117200255_C001       Mean Sea Surface (1), Mean Dynamic Topography (solution 1), the Total Geocentric Ocean Tide (solution 1)       There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1), the Total Geocentric Ocean Tide (solution 1)         CS_OFFL_SIR_IOPR_2_202004117202547_202004117203241_C001       Mean Sea Surface (1), Mean Dynamic Topography (1)       There is an error with the MSS height (solution 1) and the Mean Dynamic Topography (1)         CS_OFFL_SIR_IOPR_2_20200411720426_202004117221036_C001       Mean Sea Surface (1), Mean Dynamic Topography height (solution 1)       There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)   | CS_OFFL_SIR_IOPR_2_20200411T171545_20200411T171622_C001 | Total Geocentric Ocean Tide (FES), Non | GOT and solution 2: FES) and the Non-equilibrium Long Period Ocean      |
| CS_OFFL_SIR_IOPR_2_20200411T200117_20200411T200255_C001Topography (1), Total Geocentric Ocean<br>Tide (GOT)Topography (solution 1), the Total Geocentric Ocean Tide (solution 1:<br>GOT) for one or more recordsCS_OFFL_SIR_IOPR_2_20200411T202547_20200411T203241_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1)There is an error with the MSS height (solution 1) and the Mean Dynamic<br>Topography height (solution 1)CS_OFFL_SIR_IOPR_2_20200411T220426_20200411T221036_C001Mean Sea Surface (1), Mean Dynamic<br>Topography (1)There is an error with the MSS height (solution 1) and the Mean Dynamic  | CS_OFFL_SIR_IOPR_2_20200411T184633_20200411T185348_C001 |  |   |
| CS_OFFL_SIR_IOPR_2_202004111202547_202004111203241_C001       Topography (1)       Topography height (solution 1)         CS_OFFL_SIR_IOPR_2_202004111202547_202004111203241_C001       Mean Sea Surface (1), Mean Dynamic       Topography height (solution 1)   | CS_OFFL_SIR_IOPR_2_20200411T200117_20200411T200255_C001 | Topography (1), Total Geocentric Ocean | Topography (solution 1), the Total Geocentric Ocean Tide (solution 1:   |
|   | CS_OFFL_SIR_IOPR_2_20200411T202547_20200411T203241_C001 |  |   |
|   | CS_OFFL_SIR_IOPR_2_20200411T220426_20200411T221036_C001 |  |   |

## **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.

1

| Product   | Test Failed         | Description   |
|---|---------------------|---|
| CS_OFFL_SIR_IOPM_2_20200411T104156_20200411T105232_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |

### 5.6 L2 Measurement Quality Flag Check

#### L2 Quality Flags (20Hz)

CryoSat L2 data includes Quality Flags for each 20 Hz, 20 Hz PLRM and 1 Hz measurement record. The bit value of this flag indicates any problems when set.

Currently, there are several common flags raised in the Level 2 products, which are summarised below. The table provides the full list of products flagged.

> Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags: These flags are currently set for some records over ocean.

> OCOG Altimeter Range and Backscatter Quality Flags: These flags are currently set for some records over continental ice.

84

Number of products with errors:

Description **Test Failed** Product Ocean Altimeter Range, SSHA, SWH The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and Backscatter Quality, OCOG and the OCOG Altimeter Range and Backscatter Quality Flags have been CS\_OFFL\_SIR\_IOPM\_2\_20200410T235300\_20200411T002143\_C001 Altimeter Range and Backscatter Quality set for one or more records. Ocean Altimeter Range, SSHA, SWH The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and Backscatter Quality, OCOG and the OCOG Altimeter Range and Backscatter Quality Flags have been CS\_OFFL\_SIR\_IOPM\_2\_20200411T005308\_20200411T011920\_C001 Altimeter Range and Backscatter Quality set for one or more records. OCOG Altimeter Range Quality, OCOG The OCOG Altimeter Range and Backscatter Quality Flags have been set CS\_OFFL\_SIR\_IOPM\_2\_20200411T012100\_20200411T012600\_C001 Backscatter Quality for one or more records. OCOG Altimeter Range Quality, OCOG The OCOG Altimeter Range and Backscatter Quality Flags have been set CS\_OFFL\_SIR\_IOPM\_2\_20200411T012607\_20200411T012936\_C001 Backscatter Quality for one or more records. Ocean Altimeter Range, SSHA, SWH The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and Backscatter Quality, OCOG and the OCOG Altimeter Range and Backscatter Quality Flags have been CS\_OFFL\_SIR\_IOPM\_2\_20200411T013301\_20200411T020729\_C001 Altimeter Range and Backscatter Quality set for one or more records. OCOG Altimeter Range Quality, OCOG The OCOG Altimeter Range and Backscatter Quality Flags have been set CS\_OFFL\_SIR\_IOPM\_2\_20200411T022651\_20200411T022731\_C001 Backscatter Quality for one or more records. Ocean Altimeter Range, SSHA, SWH The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and Backscatter Quality, OCOG and the OCOG Altimeter Range and Backscatter Quality Flags have been CS\_OFFL\_SIR\_IOPM\_2\_20200411T023159\_20200411T023912\_C001 Altimeter Range and Backscatter Quality set for one or more records.

| CS_OFFL_SIR_IOPM_2_20200411T025247_20200411T025903_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
|---|--|--|
| CS_OFFL_SIR_IOPM_2_20200411T030058_20200411T030632_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T031217_20200411T034558_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T035937_20200411T040044_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T041859_20200411T043816_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T044018_20200411T044527_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T045123_20200411T052534_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T055004_20200411T055431_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T055520_20200411T061259_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T061601_20200411T061623_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T063137_20200411T064617_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T065333_20200411T070043_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T072040_20200411T073815_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T073946_20200411T075348_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T080138_20200411T080341_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T080445_20200411T080843_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |

| CS_OFFL_SIR_IOPM_2_20200411T081033_20200411T082600_C001 | •   | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been                                 |
|---|---|--|
| CS_OFFL_SIR_IOPM_2_20200411T082802_20200411T083725_C001 | Altimeter Range and Backscatter Quality<br>Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been                                 |
| CS_OFFL_SIR_IOPM_2_20200411T085535_20200411T085640_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality   | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T090514_20200411T091625_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T093224_20200411T093636_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T093942_20200411T094745_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality   | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T095003_20200411T100508_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T104156_20200411T105232_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T105235_20200411T111545_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T112056_20200411T112629_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality   | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T112915_20200411T115416_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T121800_20200411T121848_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality   | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T122627_20200411T125413_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T130028_20200411T130510_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality   | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T130543_20200411T130625_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality   | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T130757_20200411T133725_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T134509_20200411T134534_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T140003_20200411T143324_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T143937_20200411T144509_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality   | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T144651_20200411T145257_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T145614_20200411T150359_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality   | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T150525_20200411T151041_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality   | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T152402_20200411T152556_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T153902_20200411T161245_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T161840_20200411T162353_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality   | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T162601_20200411T164535_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |

| CS_OFFL_SIR_IOPM_2_20200411T171721_20200411T173746_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
|---|--|--|
| CS_OFFL_SIR_IOPM_2_20200411T173825_20200411T175101_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T180536_20200411T184113_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T184240_20200411T184524_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T190049_20200411T190816_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T191257_20200411T191717_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T191747_20200411T193028_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T193219_20200411T193738_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T193756_20200411T193954_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T194816_20200411T200117_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T200331_20200411T201549_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T201814_20200411T201920_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T204251_20200411T205316_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T205456_20200411T210934_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T211145_20200411T211648_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T211712_20200411T211827_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T212521_20200411T212619_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T213333_20200411T213721_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T214417_20200411T214709_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T214831_20200411T215541_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T222717_20200411T224831_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPM_2_20200411T225157_20200411T225605_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPM_2_20200411T230225_20200411T232614_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20200411T020729_20200411T020856_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T024456_20200411T024500_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T120328_20200411T120358_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
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| CS_OFFL_SIR_IOPN_2_20200411T120359_20200411T120449_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
|---|--|--|
| CS_OFFL_SIR_IOPN_2_20200411T120713_20200411T120735_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20200411T125846_20200411T130028_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPR_2_20200411T020913_20200411T020941_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPR_2_20200411T070239_20200411T070247_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPR_2_20200411T125414_20200411T125558_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T134534_20200411T135552_C001 |  | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T173746_20200411T173825_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality, OCOG<br>Altimeter Range and Backscatter Quality | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T191717_20200411T191747_C001 | OCOG Altimeter Range Quality, OCOG<br>Backscatter Quality  | The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records.  |

#### L2 Quality Flags (20Hz PLRM)

Currently, there are several common flags raised in the Level 2 products, which are summarised below. The table provides the full list of products flagged.

> Ocean Altimeter Range, SSHA, SWH and Backscatter PLRM Quality Flags: These flags are currently set for occasional records over sea ice.

- > OCOG Altimeter Range and Backscatter PLRM Quality Flags: These flags are currently set for occasional records over continental ice.

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| Product   | Test Failed   | Description  |
|---|---|--|
| CS_OFFL_SIR_IOPN_2_20200411T004834_20200411T004940_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T023952_20200411T024326_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T040044_20200411T040201_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T044527_20200411T044840_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20200411T055431_20200411T055520_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T062431_20200411T063004_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20200411T075902_20200411T080138_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20200411T080843_20200411T081021_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T083725_20200411T084006_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T085426_20200411T085535_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T091625_20200411T091633_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T092624_20200411T093224_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T094745_20200411T094933_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20200411T101919_20200411T101931_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |

| CS_OFFL_SIR_IOPN_2_20200411T103342_20200411T103936_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
|---|---|--|
| CS_OFFL_SIR_IOPN_2_20200411T115416_20200411T115519_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T115638_20200411T115820_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T120713_20200411T120735_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20200411T121354_20200411T121800_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T130625_20200411T130748_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20200411T143605_20200411T143937_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T144509_20200411T144625_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20200411T150359_20200411T150525_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T161518_20200411T161840_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T162353_20200411T162517_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20200411T164535_20200411T164859_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T193954_20200411T194149_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20200411T202330_20200411T202547_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20200411T203928_20200411T204251_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20200411T213038_20200411T213333_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T213721_20200411T214236_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T215541_20200411T215704_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T215914_20200411T220426_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPN_2_20200411T222026_20200411T222352_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPN_2_20200411T225823_20200411T230118_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
|   |   |  |

| CS_OFFL_SIR_IOPN_2_20200411T233909_20200411T234248_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
|---|---|--|
| CS_OFFL_SIR_IOPN_2_20200411T235245_20200411T235407_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPR_2_20200411T003241_20200411T004002_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T004002_20200411T004304_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPR_2_20200411T020913_20200411T020941_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |

| CS_OFFL_SIR_IOPR_2_20200411T021046_20200411T021818_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
|---|---|--|
| CS_OFFL_SIR_IOPR_2_20200411T021843_20200411T022345_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T023033_20200411T023159_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPR_2_20200411T030951_20200411T031217_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T034558_20200411T035622_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T040214_20200411T040522_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPR_2_20200411T044840_20200411T045123_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T052534_20200411T052703_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPR_2_20200411T052818_20200411T053521_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T053521_20200411T053925_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T070250_20200411T070524_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPR_2_20200411T071413_20200411T071521_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T073815_20200411T073946_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPR_2_20200411T075348_20200411T075902_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T084748_20200411T084909_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPR_2_20200411T084909_20200411T085426_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T085803_20200411T090232_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPR_2_20200411T100508_20200411T101323_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T102714_20200411T103342_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T103936_20200411T104156_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T120457_20200411T120713_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T120902_20200411T121354_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T125414_20200411T125558_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T134256_20200411T134509_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPR_2_20200411T134534_20200411T135552_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T143324_20200411T143605_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |

| CS_OFFL_SIR_IOPR_2_20200411T151935_20200411T152253_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
|---|---|--|
| CS_OFFL_SIR_IOPR_2_20200411T152556_20200411T153444_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T153630_20200411T153756_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPR_2_20200411T170725_20200411T171504_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T184633_20200411T185348_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T194149_20200411T194816_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T200117_20200411T200255_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T201549_20200411T201814_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T201920_20200411T202330_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T202547_20200411T203241_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T220426_20200411T221036_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
| CS_OFFL_SIR_IOPR_2_20200411T221041_20200411T221135_C001 | OCOG Altimeter Range Quality PLRM,<br>OCOG Backscatter Quality  | The OCOG Range and Backscatter Quality Flags have been set for one or more records.  |
| CS_OFFL_SIR_IOPR_2_20200411T230118_20200411T230157_C001 | Ocean Altimeter Range, SSHA, SWH<br>and Backscatter Quality PLRM, OCOG<br>Altimeter Range and Backscatter Quality<br>PLRM | The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags<br>and the OCOG Altimeter Range and Backscatter Quality Flags have been<br>set for one or more records. |
|   |   |  |

#### L2 Quality Flags (1 Hz & 1Hz PLRM)

Currently, there are several common flags raised in the Level 2 products, which are summarised below.

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> 1Hz and 1Hz Ocean SSHA Quality Flags: These flags are currently set for products over sea ice, which is to be expected.

Number of products with errors:

#### **5.8 L2 Ocean Retracking Quality Check**

# L2 Retracking Flags (20Hz) 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: 59 L2 Retracking Flags (20Hz, PLRM) CryoSat L2 data includes an ocean retracking quality flag for each 20-Hz PLRM measurement record. The bit value of this flag indicates any problems when set. Ocean Retracking Quality Flag (PLRM): This flag is currently set for products IOPR and IOPN products over sea ice, but this is to be expected.

Number of products with errors:

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# 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.



#### 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).

Currently, there are some common auxiliary correction errors 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.

> ECMWF Meteo Corrections: Currently the following corrections are not computed over CONTINENTAL ICE: Dry Tropospheric Corection, Wet Tropospheric Correction, Inverse Barometric Correction and the U-Wind and V-Wind components of the ECMWF model wind vector. This is a known anomaly (CRYO-COP-3) and will be resolved in a future IPF update. The affected products are not reported in the table below.

> Sea State Bias & Sea State Bias PLRM: The error value is currently set for products over sea ice, but this is to be expected.

> Mean Sea Surface: The error value is currently set for products over land and sea ice, but this is to be expected.

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- > Mean Dynamic Topography: The error value is currently set for products over land and sea ice, but this is to be expected.
- > Altimetric Wind Speed Error: The error value is currently set for products over land and sea ice, but this is to be expected.

#### Number of products with errors:

| Product   | Test Failed  | Description   |
|---|--|---|
| CS_OFFL_SIR_IOP_220200410T234706_20200411T003643_C002 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)                                       | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T003643_20200411T012620_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)                                       | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T012620_20200411T021556_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)                                       | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T021556_20200411T030534_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)                                       | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T030534_20200411T035510_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)                                       | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T035510_20200411T044447_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT) | There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography (solution 1), the Total Geocentric Ocean Tide (solution 1:<br>GOT) for one or more records |
| CS_OFFL_SIR_IOP_220200411T044447_20200411T053423_C001 | Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean               | There is an error with the MSS height (solution 1), the Mean Dynamic Topography (solution 1), and tidal corrections for one or more records                                   |

Tide (FES) Non-Equilibrium Long Period

| CS_OFFL_SIR_IOP_220200411T053423_20200411T062401_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
|---|--|---|
| CS_OFFL_SIR_IOP_220200411T062401_20200411T071337_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T071337_20200411T080314_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T080314_20200411T085251_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T085251_20200411T094228_C001 |  | Topography (solution 1), the Total Geocentric Ocean Tide (solution 2:<br>FES) and the Non-Equilibrium Long Period Ocean Tide for one or more<br>records                       |
| CS_OFFL_SIR_IOP_220200411T094228_20200411T103204_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T103204_20200411T112141_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T112141_20200411T121118_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T121118_20200411T130055_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T130055_20200411T135031_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T135031_20200411T144009_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)                             | There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography (solution 1), the Total Geocentric Ocean Tide (solution 1:<br>GOT) for one or more records |
| CS_OFFL_SIR_IOP_220200411T144009_20200411T152945_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T152945_20200411T161922_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T161922_20200411T170859_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T170859_20200411T175836_C001 | Topography (1), Total Geocentric Ocean<br>Tide (GOT), Total Geocentric Ocean<br>Tide (FES) Non-Equilibrium Long Period | Topography (solution 1), and tidal corrections for one or more records  |
| CS_OFFL_SIR_IOP_220200411T175836_20200411T184812_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T184812_20200411T193749_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |
| CS_OFFL_SIR_IOP_220200411T193749_20200411T202726_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1), Total Geocentric Ocean<br>Tide (GOT)                             | There is an error with the MSS height (solution 1), the Mean Dynamic<br>Topography (solution 1), the Total Geocentric Ocean Tide (solution 1:<br>GOT) for one or more records |
| CS_OFFL_SIR_IOP_220200411T202726_20200411T211703_C001 | Mean Sea Surface (1), Mean Dynamic<br>Topography (1)   | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)  |

| CS_OFFL_SIR_IOP_220200411T211703_20200411T220639_C001 | <br>There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) |
|---|--|
| CS_OFFL_SIR_IOP_220200411T220639_20200411T225617_C001 | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)     |
| CS_OFFL_SIR_IOP_220200411T225617_20200411T234553_C001 | There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1)     |

#### 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_220200411T103204_20200411T112141_C001 | Power scaling error | There is an error in the scaling of the L2 waveform for one or more records |

| 6.6 P2P Measurement Quality Flag Check      |  |  |
|---|--|--|
| P2P Quality Flags (20Hz)                    |  |  |
| CryoSat P2P data includes Quality Flags for | each 20 Hz, 20 Hz PLRM and 1 Hz measurement record, copied from the corresponding L2 products.     |  |
| Since the P2P Quality Flags are copied d    | lirectly from the L2 Quality Flags, please see Section 5.6 for the full list of products affected. |  |
| Number of products with errors:             | 29   |  |
| P2P Quality Flags (20Hz PLRM)               |  |  |
| Since the P2P Quality Flags are copied d    | lirectly from the L2 Quality Flags, please see Section 5.6 for the full list of products affected. |  |
| Number of products with errors:             | 29   |  |
| P2P Quality Flags (1 Hz & 1Hz Pl            | LRM)   |  |

Since the P2P Quality Flags are copied directly from the L2 Quality Flags, please see Section 5.6 for the full list of products affected.

Number of products with errors:

30

1

# 6.8 P2P Ocean Retracking Quality Check

| P2P Retracking Flags (20Hz)  |   |
|--|---|
| 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 (PLRM): This flag is currently set for products IOP    | R and IOPN products over sea ice, but this is to be expected.                   |
| Number of products with errors: 27   |   |
| P2P Retracking Flags PLRM  |   |
|  |   |
| CryoSat L2 data includes an ocean retracking quality flag for each 20-Hz PLRM mea    | surement record. The bit value of this flag indicates any problems when set.    |
| Ocean Retracking Quality Flag (PLRM): This flag is currently set for products IOP    | R and IOPN products over sea ice, but this is to be expected.                   |
| Number of products with errors: 30   |   |