

## **QA4EO Daily Report for GOP data:**

<u>26/03/2023</u>

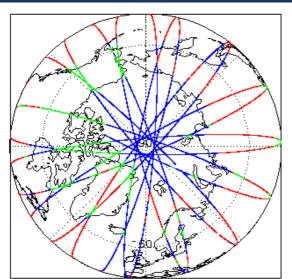
# IDEAS-QA4E0

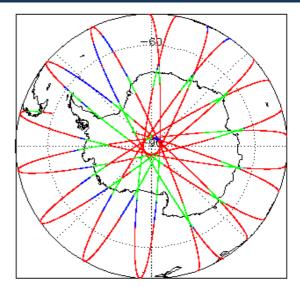
Demant Dreduction.	00 4 0000	Check	L1 & L2	P2P
Report Production:	26-Apr-2023	Server check: science-pds.cryosat.esa.int	Nominal	Nominal
Processor Used:	CryoSat Ocean Processor	Server check: calval-pds.cryosat.esa.int	Nominal	Nominal
Processor Usea:	CryoSal Ocean Processor	Product Software Check	Nominal	Nominal
Data Used:	Geophysical Ocean Products (GOP)	Product Format Check	Nominal	Nominal
Data Useu:	L1B, L2 & P2P Science Data	Product Header Analysis	Nominal	Nominal
		Auxiliary Data File Usage Check	Nominal	Nominal
We would	love to hear from you!	Auxiliary Correction Error Check	See Section 5.4	See Section 6.4
	your feedback about these daily	Measurement Confidence Data Check	See Section 4.5, 4.6 and 5.5	See Section 6.5
quality reports: What	do you like/ dislike? What quality	Range, SWH & Backscatter Measurement Check	See Section 5.6	See Section 6.6
information do you	uneed? Send your feedback to	Ocean Retracking Quality Check	See Section 5.7	See Section 6.7
cs2_qc_t	eam@telespazio.com	QCC Error/ Warning Check	See Section 7.1 and 7.2	See Section 7.1, 7.2 and 7.

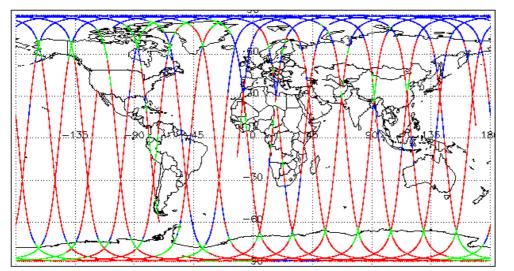
1. Overview

	Mission / Instrument News				
	25-Mar-2023 None				
26-Mar-2023 27-Mar-2023		None			
		Nothing planned			

# 2. Global Coverage







### Mode Coverage



## 3. Instrument Configuration

SIRAL instrument(s) in use:

SIRAL - A

0

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

# 4. GOP 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 NetCDF product file (.nc).

Number of products with errors:

4.1 Er Poduci Header Analysis           Acqueeta, sans are devel de loss are finded to the Mary of Mark and Other, packada una conscisuod by the act and una conscis act and una conscisuod by the act and una conscisuod by the ac					
<form>  Bit Process Cale State S</form>	4.2 L1B Product Header Analysis				
double control of the second of t	For all products, a series of pre-defined checks are performed on the MPH and SI	PH in order to identify any incon	sistencies and/or errors raised by the ground-segment processing chain.		
<form>      Balance of generation of the second of t</form>		OPR and GOPN products beca	use the I1b_processing_quality_hr field is not correctly configured in the OSAR and		
A JI JA Aurian Chain File Usage Check.  Earror and a Check and a protection framework Check Processing and a set of a se	•				
A product is noted to mixely Data One Descriptions of the specific any electronic data data to check the value of data has been encoded. A <b>4.11 B Auxilian Concellon Force (Desc)</b> Concellon data that encode:	Number of products with errors: 0				
<form>         Additional decision of the one of</form>	4.3 L1B Auxilary Data File Usage Check				
A L1 B Auxiliary Correction Error Check Cove and the second of each lease lease second of each lease lease second of each lease second	Each product is checked for missing Data Set Descriptors with respect to a pre-de	etermined baseline and also to o	check the validity of Auxiliary Data Files is correct.		
Population of the second secon	Number of products with errors: 0				
Population of the second secon					
decode solution of the s	4.4 L1B Auxiliary Correction Error Check				
Shifle Measurement Confidence Data Check  Charles Lata Lata Lata Lata Lata Lata Lata Lat	CryoSat L1B data includes a correction error flag for each measurement record. T	he bit value of this flag indicate	s any problems when set.		
Gradin Linds data includes a measurement conditioned tog tog data in measurement record. The bit value of the ling includes any proteiner where were.         Predet       Image: Data includes a measurement conditioned to the conditionation taxe. The is being investigated and will be updated in the read BV update.         Predet       Image: Data includes a measurement record. The bit value of the ling includes any proteiner when set.         Copie: Ling: Data includes a measurement record. The bit value of the ling includes any proteiner when set.         Copie: Ling: Data includes a measurement record. The bit value of the ling includes any proteiner when set.         Copie: Ling: Data includes a measurement record. The bit value of the ling includes any proteiner when set.         Copie: Ling: Data includes a measurement record. The bit value of the ling includes any proteiner when set.         Copie: Ling: Data includes a set of the data includes and the ling includes any proteiner when set.         Copie: Ling: Data includes a measure include to set on the ling includes any proteiner when set.         Copie: Ling: Data includes any proteiner bit includes any proteiner when set.         Copie: Ling: Data includes any proteiner bit includes and the ling includes any proteiner bit includes any proteiner bit includes any pr	Number of products with errors: 0				
Address of a more and	4.5 L1B Measurement Confidence Data Check				
Address of a more and	CrvoSat L1B data includes a measurement confidence flag for each measuremen	t record. The bit value of this fla	a indicates any problems when set.		
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City City Nig All city Control Nig Control Nig City City Nig City City City City City City City City	Product	Test Failed	Description		
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Coyali L1 data includes a wavefer data llag for each measurement encod. The la value of list lag indicates any problems when set. Lade of Ede Flag: The flag is currently of the one products over land, but this is to be expected. Name or products with errors: 1 Product Coyali L1 data includes a wavefer data llag for each measurement encod. The la value of list lag indicates any problems when set. Set of L2, Set Coyali L3, Set Coyali			records		
La ga de Da lage. This lag is unenny set to sen ou cluster ou ten une ten out is to be expected. The franching of the final bar out on the method of the final bar of the final	4.6 L1B Waveform Group Data Check				
Name of cycled with status     1       Proceeding the cycle of the tracking on the instanting of the instant	CryoSat L1B data includes a waveform data flag for each measurement record. T	he bit value of this flag indicates	s any problems when set.		
Tark Tailed         Description           CS, OFFL, SL, OOPMIL _20200322101052510_00000         Less of Enho         The tracking enho is missing for one or more mecodes           CS, OFFL, SL, OOPMIL _2020032211030000         Less of Enho         The tracking enho is missing for one or more mecodes           CS, OFFL, SL, OOPMIL _2020032211030000         Less of Enho         The tracking enho is missing for one or more mecodes           CS, OFFL, SL, OOPMIL _2020032210301000         Less of Enho         The tracking enho is missing for one or more mecodes           CS, OFFL, SL, OOPMIL _2020032210301000         Less of Enho         The tracking enho is missing for one or more mecodes           CS, OFFL, SL, OOPMIL _202003221010000         Less of Enho         The tracking enho is missing for one or more mecodes           CS, OFFL, SL, OOPMIL _202030220110000         Less of Enho         The tracking enho is missing for one or more mecodes           CS, OFFL, SL, OOPMIL _202030220110000         Less of Enho         The tracking enho is missing for one or more mecodes           CS, OFFL, SL, OOPMIL _2020302201100000         Less of Enho         The tracking enho is missing for one or more mecodes           CS, OFFL, SL, OOPMIL _20203022011000000         Less of Enho         The tracking enho is missing for one or more mecodes           CS, OFFL SL, OOPMIL _202030220110000000000000000000000000000	Loss of Echo Flag: This flag is currently set for some products over land, but this	s is to be expected.			
G., OFFL, SIM, COMME B.202030281703589, 202030281705490, 2001         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281703580, 2020         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281703580, 2020         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281704580, 2020         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281704580, 2020         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281704580, 2020         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281704591, 202030281704591, 2001         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.20203028179270, 202030281703278, 2001         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.20203028179270, 202030281703278, 2001         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281792704, 202030281703278, 2001         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281703278, 2001         Less of Exho         The tracking exho is measing for one o	Number of products with errors: 14				
G., OFFL, SIM, COMME B.202030281703589, 202030281705490, 2001         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281703580, 2020         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281703580, 2020         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281704580, 2020         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281704580, 2020         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281704580, 2020         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281704591, 202030281704591, 2001         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.20203028179270, 202030281703278, 2001         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.20203028179270, 202030281703278, 2001         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281792704, 202030281703278, 2001         Less of Exho         The tracking exho is measing for one or more meands.           GS, OFFL, SIM, COMME B.202030281703278, 2001         Less of Exho         The tracking exho is measing for one o	Product	Test Failed	Description		
G.G. OFF, SR. GOP MIB. 2023030261713/07.2 202303261702486. COM     Loss of Enh     The tracking enho is missing for one or more records       G.S. OFF, SR. GOP MIB. 2023030261703272.2 202303261702488. COM     Loss of Enho     The tracking enho is missing for one or more records       G.S. OFF, SR. GOP MIB. 2023030261703419. 202303261703249. COM     Loss of Enho     The tracking enho is missing for one or more records       G.S. OFF, SR. GOP MIB. 2023030261703419. 202303261703490. COM     Loss of Enho     The tracking enho is missing for one or more records       G.S. OFF, SR. GOP MIB. 2023030261703414. 20230326171540. COM     Loss of Enho     The tracking enho is missing for one or more records       G.S. OFF, SR. GOP MIB. 202303261703414. 20230326171540. COM     Loss of Enho     The tracking enho is missing for one or more records       G.S. OFF, SR. GOP MIB. 202303261712474. 20230326171540. COM     Loss of Enho     The tracking enho is missing for one or more records       G.S. OFF, SR. GOP MIB. 202303261712474. 2023032617154270. COM     Loss of Enho     The tracking enho is missing for one or more records       G.S. OFF, SR. GOP MIB. 202303261712474. 202303261712440. 202303261712440. 202303261712474. 202303261712440. 20230					
G., OFFL SHR, GOPNIH B, 202303025170272, 20230251702498, COUI     Loss of Enb     The tracking orb is missing for one or more records       G., OFFL, SHR, COPNIB, 202303251704459, 202303251704459, COUI     Loss of Enb     The tracking orb is missing for one or more records       G., OFFL, SHR, COPNIB, 202303251704459, 202303251704459, COUI     Loss of Enb     The tracking orb is missing for one or more records       G., OFFL, SHR, COPNIB, 202303251704459, 202303251704459, 202303251704459, 202303251704459, 20230325170459, 20201     Loss of Enb     The tracking orb is missing for one or more records       G., OFFL, SHR, COPNIB, 20230325170414, 20230325170151651, COUI     Loss of Enb     The tracking orb is missing for one or more records       G., OFFL, SHR, COPNIB, 2023032517032547, 202303271032770, COUIL     Loss of Enb     The tracking orb is missing for one or more records       G., OFFL, SHR, COPNIB, 2023032517032547, 202303718, 2001     Loss of Enb     The tracking orb is missing for one or more records       G., OFFL, SHR, COPNIB, 2023032517032547, 202303718, 2001     Loss of Enb     The tracking orb is missing for one or more records       G., OFFL, SHR, COPNIB, 2023032517032547, 202303718, 2001     Loss of Enb     The tracking orb is missing for one or more records       SL, OFFL, SHR, COPNIB, 202303718, 202303251703245470, 202303718, 20201     Loss of Enb     The tracking orb is missing for one or more records       SL, OFFL, SHR, COPNIB, 20230371718, 2021     Loss of Enb     The tracking orb is missing for one or more records       SL, DE COP <t< td=""><td>CS_OFFL_SIR_GOPM1B_20230326T053647_20230326T054007_C001</td><td>Loss of Echo</td><td>The tracking echo is missing for one or more records</td></t<>	CS_OFFL_SIR_GOPM1B_20230326T053647_20230326T054007_C001	Loss of Echo	The tracking echo is missing for one or more records		
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GS_OFFL_SIR_GOPNIB_202320327034198_2023203044989_001     Loss of Echo     The tacking echo is missing for one or more records       GS_OFFL_SIR_GOPNIB_2023203704194_2023023036716415_001     Loss of Echo     The tacking echo is missing for one or more records       GS_OFFL_SIR_GOPNIB_20230320716141_20230320716151_001     Loss of Echo     The tacking echo is missing for one or more records       GS_OFFL_SIR_GOPNIB_20230320716145_020230320716151_001     Loss of Echo     The tacking echo is missing for one or more records       GS_OFFL_SIR_GOPNIB_20230320716145_0202303207161573_001     Loss of Echo     The tacking echo is missing for one or more records       CS_OFFL_SIR_GOPNIB_20230320716145_0202303207163738_001     Loss of Echo     The tacking echo is missing for one or more records       CS_OFFL_SIR_GOPNIB_20230320716385_02033207103738_001     Loss of Echo     The tacking echo is missing for one or more records       CS_OFFL_SIR_GOPNIB_20230320710378_001     Loss of Echo     The tacking echo is missing for one or more records       CS_OFFL_SIR_GOPNIB_20230320712385_001     Loss of Echo     The tacking echo is missing for one or more records       CS_OFFL_SIR_GOPNIB_2023030710378_001     Loss of Echo     The tacking echo is missing for one or more records       CS_OFFL_SIR_GOPNIB_2023030710378_001     Loss of Echo     The tacking echo is missing for one or more records       CS_OFFL_SIR_GOPNIB_2023030710378_001     Loss of Echo     The tacking echo is missing for one or more records       SIR_SOFFL_SIR_GOPNIB_202303710378_001					
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CS_OFFL_SIR_GOPNIB_20230326T192074_20230326T192877_Q011       Loss of Echo       The tracking echo is missing for one or more records         CS_OFFL_SIR_GOPNIB_20230326T033867_2023032T033873_2001       Loss of Echo       The tracking echo is missing for one or more records         CS_OFFL_SIR_GOPNIB_20230326T023857_2023032T02305EQ4_001       Loss of Echo       The tracking echo is missing for one or more records         CS_OFFL_SIR_GOPNIB_20230326T220541_2023032ET22054_001       Loss of Echo       The tracking echo is missing for one or more records         CS_OFFL_SIR_GOPNIB_20230326T220541_2023032ET22054_001       Loss of Echo       The tracking echo is missing for one or more records         CS_OFFL_SIR_GOPNIB_20230326T220541_2023032ET22054_001       Loss of Echo       The tracking echo is missing for one or more records         CS_OFFL_SIR_GOPNIB_2023032F1220541_2023032ET220541_2023032ET220541_2023032ET220541_2023032ET220541_2023032ET220541_2023032ET220541_2023032ET220541_2023032ET220541_2023032ET220541_2023032ET220541_2023032ET220541_2023032ET220541_2023032ET220541_2023032ET220541_2023032ET20541_2023032ET20541_2023032ET20541_2023032ET20541_2023032ET20541_2023032ET20541_2023032ET20541_2023032ET20541_2023032ET20541_2023032ET20541_2023032ET20541_2023032ET20541_2023032ET20541_2023032ET20541_2023032ET20541_202302ET10230ET20541_202302ET20541_202302ET1020541_202302ET1020541_202302ET1020541_202302ET1020541_202302ET102054_2000541_202302ET102054_200055_200054_2000054_200054_200054_2000054_200054_200054_200054_200054_200054_200					
CS_OFFL_SIR_GOPRIB_20230326T033736_0230326T033738_0001       Loss of Echo       The tracking echo is missing for one or more records         CS_OFFL_SIR_GOPRIB_20230326T065238_20230326T065454_0001       Loss of Echo       The tracking echo is missing for one or more records         CS_OFFL_SIR_GOPRIB_20230328T220541_20230328T220584_0001       Loss of Echo       The tracking echo is missing for one or more records         COMPLEXED Extends         State Product Format Check         State Product Format Check         State Product Reader Analysis         For al products, retrieved and unpacked from the science server, is checked to ensure it consists of both an XML header file (.HDR) and a NetCOF product file (.nc).         Number of products with errors:         0         State Decide 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         State Auxiliary Data File Usage Check         State Auxiliary Correction Error Check         For al products, with errors:         0         State Auxiliary Correction Error Check         For al products, with errors:         0 <td colspa<="" td=""><td></td><td></td><td></td></td>	<td></td> <td></td> <td></td>				
CS_OFFL_SIR_GOPRIB_20230326T220859_C001 Los of En/o The tracking echo is missing for one or more records   S. GOP Level 2 Data Quality Check Solution 2 Data Quality Check For al products with errors O Solution 2 Data Quality Check For al products with errors O Solution 2 Data Quality Check For al products with errors O Solution 2 Data Quality Check For al products with errors O Solution 2 Data Quality Check For al products with errors For al products with errors O Solution 2 Data Quality Check For al products with errors For al products wi					
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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 products 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 correction errors raised in the Level 2 products that are expected, due to surface type. All common flags are summarised in the list below, followed by atable highlighting any additional issues that may arise from this test. > Corrections: Currently the following corrections are not computed over CONTINENTAL ICE: Dry Tropospheric Correction, Inverse Barometric Correction, Inverse Barometric Correction in the Level Advise over CONTINENTAL ICE: Dry Tropospheric Correction, Wet Tropospheric Correction, Inverse Barometric Correction in the Level Advise over CONTINENTAL ICE: Dry Tropospheric Correction, Inverse Barometric Correction in the Level Advise over CONTINENTAL ICE: Dry Tropospheric Correction, Wet Tropospheric Correction, Inverse Barometric Correction in the Level Advise over CONTINENTAL ICE: Dry Tropospheric Correction, Inverse Barometric Correction in the Level Barometric Correction 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 Blas & Sea State Blas PLRM: The error value is currently set for products over sea ice, but this is to be expected. > Altimetric Wind Speed Error: The error value is currently set for p	5.1 L2 Product Format Check				
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 errors raised for the default error value (32767).         Currently, there are some common auxiliary correction errors raised in the Level 2 products that are expected, due to surface type. All common flags are summarised in the list below, followed by a table highlighting any additional issues that may arise from this test.         > ECMWF Meteo Corrections:       Currently the following corrections are not computed over CONTINENTAL ICE: Dry Tropospheric Corection, Net Tropospheric Corection, 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.         > Altimetric Wind Speed Error: The error value is currently set for products over sea ice, but this is to be expected.         > Altimetric Wind Speed E	Each product, retrieved and unpacked from the science server, is checked to ensu	ure it consists of both an XML h	neader file (.HDR) and a NetCDF product file (.nc).		
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followed by a table highlighting any additional issues that may arise from this test.         > ECMWF Meteo Corrections: Currently the following corrections are not computed over CONTINENTAL ICE: Dry Tropospheric Correction, 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.         > 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:       56	For all products, the auxiliary corrections within the Geophysical Group are checked	ed for the default error value (32	2767).		
<ul> <li>&gt; 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.</li> <li>&gt; Sea State Bias &amp; Sea State Bias PLRM: The error value is currently set for products over sea ice, but this is to be expected.</li> <li>&gt; Altimetric Wind Speed Error: The error value is currently set for products over land and sea ice, but this is to be expected.</li> <li>Number of products with errors: 56</li> </ul>			ected, due to surface type. All common flags are summarised in the list below,		
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.  > 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: 56			Dry Tropospheric Corection. Wet Tropospheric Correction. Inverse Barometric		
<ul> <li>&gt; Sea State Bias &amp; Sea State Bias PLRM: The error value is currently set for products over sea ice, but this is to be expected.</li> <li>&gt; Altimetric Wind Speed Error: The error value is currently set for products over land and sea ice, but this is to be expected.</li> <li>Number of products with errors: 56</li> </ul>	Correction and the U-Wind and V-Wind components of the ECMWF model wind v				
<ul> <li>&gt; Altimetric Wind Speed Error: The error value is currently set for products over land and sea ice, but this is to be expected.</li> <li>Number of products with errors: 56</li> </ul>	•	nducts over sea ice, but this is t	o be expected		
Number of products with errors: 56					
	•	Test Failed	Description		

Tioddet	reatraileu	Description
CS_OFFL_SIR_GOPM_2_20230326T035335_20230326T040315_C001	Iviean Dynamic Topography (T)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records

CS_OFFL_SIR_GOPM_2_20230326T075606_20230326T082459_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T010802_20230326T011039_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T011232_20230326T011858_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T020316_20230326T020436_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT)	There is an error with the MSS height (solution 1), the Mean Dynamic Topography height (solution 1) and the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T024536_20230326T024935_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T034231_20230326T034337_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T042534_20230326T042729_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T043549_20230326T043737_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T052145_20230326T052651_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT)	There is an error with the MSS height (solution 1), the Mean Dynamic Topography height (solution 1) and the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T060507_20230326T060626_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T074634_20230326T074834_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the MSS height (solution 1), the Mean Dynamic Topography height (solution 1), the Total Geocentric Ocean Tide (solution 1: GOT and solution 2: FES) and the Non-Equilibrium Long Period Ocean Tide for one or more records
CS_OFFL_SIR_GOPN_2_20230326T092421_20230326T092743_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T093307_20230326T093426_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T102308_20230326T102634_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T110319_20230326T110639_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T115251_20230326T115536_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T125033_20230326T125203_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T133335_20230326T133438_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T142755_20230326T143000_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T151137_20230326T151353_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T155809_20230326T155956_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T161457_20230326T161754_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the MSS height (solution 1), the Mean Dynamic Topography height (solution 1), the Total Geocentric Ocean Tide (solution 1: GOT and solution 2: FES) and the Non-Equilibrium Long Period Ocean Tide for one or more records
CS_OFFL_SIR_GOPN_2_20230326T164805_20230326T165224_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T174730_20230326T174937_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T182425_20230326T183047_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T205650_20230326T205815_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T223620_20230326T223746_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPN_2_20230326T224258_20230326T224600_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T001625_20230326T002317_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T002317_20230326T002904_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T015600_20230326T020206_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T020206_20230326T020316_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records

CS_OFFL_SIR_GOPR_2_20230326T024453_20230326T024536_C001	Mean Sea Surface (1)	There is an error with the MSS height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T033604_20230326T033653_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T033657_20230326T033738_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T033803_20230326T034006_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T034006_20230326T034231_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GPD Wet Tropospheric correction, the MSS height (solution 1) and tidal corrections for one or more records
CS_OFFL_SIR_GOPR_2_20230326T051556_20230326T052145_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T065701_20230326T070206_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T082500_20230326T082533_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T083056_20230326T083232_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T083423_20230326T084409_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T101443_20230326T102308_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T115536_20230326T120248_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T133438_20230326T134023_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T151353_20230326T151533_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T151533_20230326T152036_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T164750_20230326T164800_C001	Mean Dynamic Topography (1)	There is an error with the Mean Dynamic Topography (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T165224_20230326T165745_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T183047_20230326T184038_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T200751_20230326T201528_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T214705_20230326T215350_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T215350_20230326T215649_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOPR_2_20230326T232608_20230326T233250_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records

### 5.5 L2 Measurement Confidence Data Check

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

#### Number of products with errors:

Product	Test Failed	Description
CS_OFFL_SIR_GOPM_2_20230326T163803_20230326T164348_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 (20 Hz)

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.

1

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

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#### Number of products with errors:

Product	Test Failed	Description
CS_OFFL_SIR_GOPM_2_20230325T233839_20230326T001224_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T003807_20230326T010103_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T010415_20230326T010444_C001		The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

CS_OFFL_SIR_GOPM_2_20230326T011913_20230326T013502_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T013506_20230326T013652_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T014134_20230326T014947_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T015334_20230326T015341_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T020927_20230326T022535_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T022749_20230326T024226_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T024935_20230326T025144_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T025233_20230326T025646_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T025822_20230326T031055_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T031558_20230326T032519_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T033148_20230326T033545_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T033653_20230326T033657_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T035335_20230326T040315_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T040959_20230326T042506_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T042729_20230326T043549_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T043745_20230326T045452_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T045718_20230326T045929_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T053647_20230326T054007_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T054019_20230326T060359_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T060626_20230326T060826_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T060911_20230326T061413_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T061655_20230326T064233_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T065221_20230326T065238_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T071425_20230326T074249_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T074834_20230326T075435_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T075606_20230326T082459_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

CS_OFFL_SIR_GOPM_2_20230326T083232_20230326T083422_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T084734_20230326T092218_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T092743_20230326T093307_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T093436_20230326T094101_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T094351_20230326T094721_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T101115_20230326T101442_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T102716_20230326T103545_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T103830_20230326T110137_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T110752_20230326T111200_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T111336_20230326T112708_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T112852_20230326T113334_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T120603_20230326T123936_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T124151_20230326T124646_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T124652_20230326T124659_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T124707_20230326T125033_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T125257_20230326T125459_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T125747_20230326T132901_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T133121_20230326T133335_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T134908_20230326T135626_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T140210_20230326T141854_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T142032_20230326T142545_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T143547_20230326T144926_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T145240_20230326T150314_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T153108_20230326T153935_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T153952_20230326T154128_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPM_2_20230326T154308_20230326T155802_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
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CS_OFFL_SIR_GOPM_2_20230326T155956_20230326T160457_C001       OCOG Altimeter Range Quality, OCOG Backscatter Quality       The OCOG Altimeter Range and Backscatter Quality Flags had for one or more records         CS_OFFL_SIR_GOPM_2_20230326T161332_20230326T161456_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality       The OCOG Altimeter Range, SSHA, SWH and Backscatter Quality         CS_OFFL_SIR_GOPM_2_20230326T161332_20230326T161456_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality       The OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range, SSHA, SWH and Backscatter Quality Flags set for one or more records         CS_OFFL_SIR_GOPM_2_20230326T163032_20230326T163519_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       The Ocean Altimeter Range, SSHA, SWH and the OCOG Altimeter Range and Backscatter Quality set for one or more records         CS_OFFL_SIR_GOPM_2_20230326T163032_20230326T163519_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality       The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality records         CS_OFFL_SIR_GOPM_2_20230326T171407_20230326T173715_C001       Ocean Altimeter Range and Backscatter Quality Altimeter Range and Backscatter Quality       The Ocean Altimeter Range and Backscatter Quality Flags and the OCOG Altimeter Range and	uality Flags s have been uality Flags s have been uality Flags s have been uality Flags
CS_OFFL_SIR_GOPM_2_20230326T161332_20230326T161456_C001       and Backscatter Quality, OCOG       and the OCOG Altimeter Range and Backscatter Quality Flags         CS_OFFL_SIR_GOPM_2_20230326T161754_20230326T162653_C001       Ocean Altimeter Range, SSHA, SWH       and the OCOG Altimeter Range, SSHA, SWH         CS_OFFL_SIR_GOPM_2_20230326T161754_20230326T162653_C001       Ocean Altimeter Range, SSHA, SWH       The Ocean Altimeter Range, SSHA, SWH         CS_OFFL_SIR_GOPM_2_20230326T163032_20230326T163519_C001       Ocean Altimeter Range, SSHA, SWH       The Ocean Altimeter Range, SSHA, SWH         CS_OFFL_SIR_GOPM_2_20230326T17407_20230326T173715_C001       Ocean Altimeter Range, SSHA, SWH       The Ocean Altimeter Range, SSHA, SWH         CS_OFFL_SIR_GOPM_2_20230326T174031_20230326T173715_C001       Ocean Altimeter Range, SSHA, SWH       The Ocean Altimeter Range, SSHA, SWH         CS_OFFL_SIR_GOPM_2_20230326T174031_20230326T174015_C001       Ocean Altimeter Range, SSHA, SWH       The Ocean Altimeter Range, SSHA, SWH         CS_OFFL_SIR_GOPM_2_20230326T174031_20230326T173715_C001       Ocean Altimeter Range, SSHA, SWH       The Ocean Altimeter Range, SSHA, SWH         CS_OFFL_SIR_GOPM_2_20230326T174031_20230326T174045_C001       OCOG Altimeter Range Quality, OCOG       The Ocean Altimeter Range and Backscatter Quality Flags	s have been uality Flags s have been uality Flags s have been uality Flags
CS_OFFL_SIR_GOPM_2_20230326T161754_20230326T162653_C001       and Backscatter Quality, OCOG       and the OCOG Altimeter Range and Backscatter Quality Flags         CS_OFFL_SIR_GOPM_2_20230326T163032_20230326T163519_C001       Ocean Altimeter Range, SSHA, SWH       and the OCOG Altimeter Range, SSHA, SWH         CS_OFFL_SIR_GOPM_2_20230326T163032_20230326T163519_C001       Ocean Altimeter Range, SSHA, SWH       and Backscatter Quality, OCOG         CS_OFFL_SIR_GOPM_2_20230326T17407_20230326T173715_C001       Ocean Altimeter Range, SSHA, SWH       The Ocean Altimeter Range, SSHA, SWH         CS_OFFL_SIR_GOPM_2_20230326T174031_20230326T173715_C001       Ocean Altimeter Range, SSHA, SWH       The Ocean Altimeter Range, SSHA, SWH         CS_OFFL_SIR_GOPM_2_20230326T174031_20230326T173715_C001       Ocean Altimeter Range and Backscatter Quality, OCOG       The Ocean Altimeter Range and Backscatter Quality Flags         CS_OFFL_SIR_GOPM_2_20230326T174031_20230326T173715_C001       OCOG Altimeter Range Quality, OCOG       The OCCOG Altimeter Range and Backscatter Quality Flags	s have been uality Flags s have been uality Flags
CS_OFFL_SIR_GOPM_2_20230326T163032_20230326T163519_C001       and Backscatter Quality, OCOG       and the OCOG Altimeter Range and Backscatter Quality Flags         CS_OFFL_SIR_GOPM_2_20230326T171407_20230326T173715_C001       Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG       The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG         CS_OFFL_SIR_GOPM_2_20230326T171407_20230326T173715_C001       Ocean Altimeter Range and Backscatter Quality, OCOG       The Ocean Altimeter Range and Backscatter Quality Flags         CS_OFFL_SIR_GOPM_2_20230326T174031_20230326T173715_C001       OCOG Altimeter Range Quality, OCOG       The OCOG Altimeter Range and Backscatter Quality Flags	s have been uality Flags
CS_OFFL_SIR_GOPM_2_20230326T171407_20230326T173715_C001 and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags Altimeter Range and Backscatter Quality Set for one or more records OCOG Altimeter Range Quality, OCOG The OCOG Altimeter Range and Backscatter Quality Flags has been been been been been been been bee	
	ive been set
CS_OFFL_SIR_GOPM_2_20230326T175014_20230326T181819_C001 Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, OCOG Strimeter Range and Backscatter Quality Flags	
CS_OFFL_SIR_GOPM_2_20230326T182133_20230326T182424_C001 OCOG Altimeter Range Quality, OCOG Altimeter Range and Backscatter Quality Flags has for one or more records	ive been set
CS_OFFL_SIR_GOPM_2_20230326T185053_20230326T191639_C001 Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG and the OCOG Altimeter Range and Backscatter Quality Flags to rome or more records	
CS_OFFL_SIR_GOPM_2_20230326T191814_20230326T192330_C001 OCOG Altimeter Range Quality, OCOG Altimeter Range and Backscatter Quality Flags has for one or more records	ive been set
CS_OFFL_SIR_GOPM_2_20230326T192337_20230326T192703_C001 OCOG Altimeter Range Quality, OCOG Altimeter Range and Backscatter Quality Flags has for one or more records	ive been set
CS_OFFL_SIR_GOPM_2_20230326T192934_20230326T200343_C001 Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG and the OCOG Altimeter Range and Backscatter Quality Flags	
CS_OFFL_SIR_GOPM_2_20230326T202709_20230326T204019_C001 Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG and the OCOG Altimeter Range and Backscatter Quality Flags to rome or more records	
CS_OFFL_SIR_GOPM_2_20230326T204023_20230326T204533_C001 Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG and the OCOG Altimeter Range and Backscatter Quality Flags	
CS_OFFL_SIR_GOPM_2_20230326T205005_20230326T205639_C001 Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, OCOG Set or more records of the three	
CS_OFFL_SIR_GOPM_2_20230326T205815_20230326T210405_C001 OCOG Altimeter Range Quality, OCOG Altimeter Range and Backscatter Quality Flags has for one or more records	ive been set
CS_OFFL_SIR_GOPM_2_20230326T210857_20230326T213257_C001 Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, OCOG Set or more records of the other than the the term of ter	
CS_OFFL_SIR_GOPM_2_20230326T213307_20230326T214304_C001 Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, OCOG Stimuter Range and Backscatter Quality Flags	
CS_OFFL_SIR_GOPM_2_20230326T215649_20230326T215743_C001 Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, OCOG Set or more records of the three	, ,
CS_OFFL_SIR_GOPM_2_20230326T221858_20230326T222051_C001 Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality Flags	
CS_OFFL_SIR_GOPM_2_20230326T222245_20230326T2223608_C001 Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality, OCOG Set or more records of the three	
CS_OFFL_SIR_GOPM_2_20230326T224818_20230326T231111_C001 Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG and the OCOG Altimeter Range and Backscatter Quality Flags	
CS_OFFL_SIR_GOPM_2_20230326T231356_20230326T232312_C001 Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG and the OCOG Altimeter Range and Backscatter Quality Flags	
CS_OFFL_SIR_GOPM_2_20230326T232428_20230326T232434_C001 OCOG Altimeter Range Quality, OCOG Backscatter Quality Tlags has for one or more records	ave been set
CS_OFFL_SIR_GOPM_2_20230326T233455_20230326T233539_C001 Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG and the OCOG Altimeter Range and Backscatter Quality Flags Straight for one or more records	
	ave been set

### L2 Quality Flags (20 Hz 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.

Product	Test Failed	Description
CS_OFFL_SIR_GOPN_2_20230326T002904_20230326T002922_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flags have bee set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T010802_20230326T011039_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flags have bee set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T020316_20230326T020436_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flags have bee set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T020722_20230326T020836_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one more records
CS_OFFL_SIR_GOPN_2_20230326T024536_20230326T024935_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flags have bee set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T032519_20230326T032658_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one more records
CS_OFFL_SIR_GOPN_2_20230326T034231_20230326T034337_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one more records
CS_OFFL_SIR_GOPN_2_20230326T040450_20230326T040959_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one more records
CS_OFFL_SIR_GOPN_2_20230326T042534_20230326T042729_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one more records
CS_OFFL_SIR_GOPN_2_20230326T050231_20230326T050618_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one more records
CS_OFFL_SIR_GOPN_2_20230326T050656_20230326T050747_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one more records
CS_OFFL_SIR_GOPN_2_20230326T052145_20230326T052651_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flags have bee set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T060507_20230326T060626_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one more records
CS_OFFL_SIR_GOPN_2_20230326T061414_20230326T061651_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one more records
CS_OFFL_SIR_GOPN_2_20230326T065454_20230326T065526_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one more records
CS_OFFL_SIR_GOPN_2_20230326T065641_20230326T065701_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flags have bee set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T084409_20230326T084734_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one more records
CS_OFFL_SIR_GOPN_2_20230326T100644_20230326T100658_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one more records
CS_OFFL_SIR_GOPN_2_20230326T102308_20230326T102634_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one more records
CS_OFFL_SIR_GOPN_2_20230326T110319_20230326T110639_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flags have bee set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T113335_20230326T113700_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one more records
CS_OFFL_SIR_GOPN_2_20230326T115251_20230326T115536_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one more records
CS_OFFL_SIR_GOPN_2_20230326T142755_20230326T143000_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flags have bee set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T151137_20230326T151353_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flag and the OCOG Altimeter Range and Backscatter Quality Flags have be set for one or more records

CS_OFFL_SIR_GOPN_2_20230326T152834_20230326T153108_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T155809_20230326T155956_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T161457_20230326T161754_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T162654_20230326T163032_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T163519_20230326T163642_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T164349_20230326T164417_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T164805_20230326T165224_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T165745_20230326T165806_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T170831_20230326T171230_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T173715_20230326T174031_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T174730_20230326T174937_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T181915_20230326T182133_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T182425_20230326T183047_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T191639_20230326T191814_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T200343_20230326T200751_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T205650_20230326T205815_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T214458_20230326T214705_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T221325_20230326T221509_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T223620_20230326T223746_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPN_2_20230326T224258_20230326T224600_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T001625_20230326T002317_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T002317_20230326T002904_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T010445_20230326T010802_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T013653_20230326T014134_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T015111_20230326T015221_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T015600_20230326T020206_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

CS_OFFL_SIR_GOPR_2_20230326T022535_20230326T022749_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T024453_20230326T024536_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T031358_20230326T031538_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T033657_20230326T033738_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T033803_20230326T034006_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T035139_20230326T035236_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T042506_20230326T042534_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T051556_20230326T052145_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T052700_20230326T052948_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T053532_20230326T053647_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T065238_20230326T065454_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T083056_20230326T083232_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T083423_20230326T084409_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T094341_20230326T094351_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T100735_20230326T101008_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T101443_20230326T102308_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T110138_20230326T110319_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T114313_20230326T114751_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T114751_20230326T115251_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T115536_20230326T120248_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T133438_20230326T134023_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T134030_20230326T134153_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T134424_20230326T134854_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T143000_20230326T143547_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T144927_20230326T145020_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T145022_20230326T145240_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records

CS_OFFL_SIR_GOPR_2_20230326T150541_20230326T150818_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T150938_20230326T151137_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T151533_20230326T152036_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T164454_20230326T164728_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T165224_20230326T165745_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T183047_20230326T184038_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T200751_20230326T201528_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T201604_20230326T202036_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T214423_20230326T214458_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one o more records
CS_OFFL_SIR_GOPR_2_20230326T214705_20230326T215350_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_GOPR_2_20230326T215350_20230326T215649_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
L2 Quality Flags (1 Hz & 1 Hz PLRM)	·	
Currently, there are several common flags raised in the Level 2 products,	which are summarised below.	
> 1 Hz and 1 Hz Ocean SSHA Quality Flags: These flags are currently set for	r products over sea ice, which is to be expected	əd.
Number of products with errors: 185		
5.8 L2 Ocean Retracking Quality Check		
L2 Retracking Flags (20 Hz)		

#### L2 Retracking Flags (20 Hz)

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:

#### L2 Retracking Flags (20 Hz 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 GOPR and GOPN products over sea ice, but this is to be expected.

62

138

Number of products with errors:

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

#### 6.1 P2P Product Format Check

Each product, retrieved and unpacked from the science server, is checked to ensure it consists of both an XML header file (.HDR) and a NetCDF product file (.nc). Number of products with errors: 0

#### 6.2 P2P Product Header Analysis

For all products, a series of pre-defined checks are performed on the MPH and SPH in order to identify any inconsistencies and/or errors raised by the ground-segment processing chain. Number of products with errors: 0

#### 6.3 P2P Auxiliary Data File Usage Check

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

Number of products with errors:

#### 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 that are expected, due to surface type. All common flags are summarised in the list below, followed by a table highlighting any additional issues that may arise from this test.

> ECMWF Meteo Corrections: Currently the following corrections are not computed over CONTINENTAL ICE: Dry Tropospheric Correction, 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.

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

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Product	Test Failed	Description
CS_OFFL_SIR_GOP_2_20230325T233236_20230326T002212_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T002212_20230326T011151_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T011151_20230326T020127_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T020127_20230326T025106_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT)	There is an error with the MSS height (solution 1), the Mean Dynamic Topography height (solution 1) and the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records
CS_OFFL_SIR_GOP_2_20230326T025106_20230326T034041_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T034041_20230326T043020_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T043020_20230326T051956_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T051956_20230326T060935_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT)	There is an error with the MSS height (solution 1), the Mean Dynamic Topography height (solution 1) and the Total Geocentric Ocean Tide height (solution 1: GOT) for one or more records
CS_OFFL_SIR_GOP_2_20230326T060935_20230326T065911_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T065911_20230326T074850_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the MSS height (solution 1), the Mean Dynamic Topography height (solution 1), the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records
CS_OFFL_SIR_GOP_2_20230326T074850_20230326T083826_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T083826_20230326T092805_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T092805_20230326T101740_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T101740_20230326T110719_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T110719_20230326T115655_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T115655_20230326T124634_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T124634_20230326T133610_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T133610_20230326T142549_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T142549_20230326T151525_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T151525_20230326T160503_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T160503_20230326T165439_C001	Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the MSS height (solution 1), the Mean Dynamic Topography height (solution 1), the Total Geocentric Ocean Tide height (solution 2: FES) and the Non-equilibrium Long Period Ocean Tide height for one or more records
CS_OFFL_SIR_GOP_2_20230326T165439_20230326T174418_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_220230326T174418_20230326T183354_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T183354_20230326T192333_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T192333_20230326T201309_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T201309_20230326T210248_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T210248_20230326T215223_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T215223_20230326T224202_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T224202_20230326T233138_C001	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_GOP_2_20230326T233138_20230327T002117_C002	Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the MSS height (solution 1) and the Mean Dynamic Topography height (solution 1) for one or more records

## 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:	1		
Product		Test Failed	Description
CS_OFFL_SIR_GOP_220230326T160503_20230	326T165439_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 (20 Hz)			
CryoSat P2P data includes Quality Flags for each 20	Hz, 20 Hz PLRM and 1 Hz m	easurement record, copied from the corres	ponding L2 products.
Since the P2P Quality Flags are copied directly fr	om the L2 Quality Flags, ple	ease see Section 5.6 for the full list of pr	roducts affected.
Number of products with errors:	30		
P2P Quality Flags (20 Hz PLRM)			
Since the P2P Quality Flags are copied directly fr	om the L2 Quality Flags, ple	ease see Section 5.6 for the full list of pr	roducts affected.
Number of products with errors:	28		
P2P Quality Flags (1 Hz & 1 Hz PLRM)			
Since the P2P Quality Flags are copied directly fr	om the L2 Quality Flags, ple	ease see Section 5.6 for the full list of pr	roducts affected.
Number of products with errors:	30		
6.8 P2P Ocean Retracking Quality C	Check		
<b>P2P Retracking Flags (20 Hz)</b> Cryosat P2P data includes an ocean retracking qualit	y flag (field 19) for each 20 H:	z measurement record. The bit value of this	flag indicates any problems when set.
Ocean Retracking Quality Flag (PLRM): This flag is	s currently set for products GO	OPR and GOPN products over sea ice, but	this is to be expected.
Number of products with errors:	28		
P2P Retracking Flags PLRM			
CryoSat L2 data includes an ocean retracking quality	flag for each 20 Hz PLRM me	easurement record. The bit value of this flag	g indicates any problems when set.
Ocean Retracking Quality Flag (PLRM): This flag is	s currently set for products GO	OPR and GOPN products over sea ice, but	this is to be expected.

Number of products with errors:

30

2151

# 7. GOP QCC Report Analysis

The Quality Control for CryoSat (QCC) facility performs a primary survey of data products immediately after production by the PDS and LTA processing facilities. A list of the tests which raised errors or warnings is provided below.

Product type	No. Products	No. QCC Reports	No. Valid	No. Warnings	No. Errors
SIR_GOPM1B	191	191	7	184	0
SIR_GOPR1B	144	144	0	144	0
SIR_GOPN1B	99	99	3	96	0
SIR_GOPM_2	191	191	133	58	0
SIR_GOPR_2	144	144	60	82	2
SIR_GOPN_2	99	99	41	58	0
SIR_GOP_P2P	29	29	0	27	2

## 7.1 QCC Errors

Number of QCC	Imber of QCC reports with errors: 4										
	Total number of occurrences of each error										
Product Type	RLOBOPNCDF	RL	RLOBOPNCDF	RL	-	-	-	-	-	-	-
SIR_GOPR_2	2	2	2	2							
Product Type	RLOBOPNCDF	RL	RLOBOPNCDF	RL	-	-	-	-	-	-	-
SIR_GOP_2_	2	2	2	2							
Test Descriptio	Test Description Key:										
Abbreviation	Test na	me	ne Details								
RLOBOPNCDF	DBOPNCDF RangeLatitudeOrBlankOP_7NetCDF Latitude should be to			between -90E7 and	d 90E7						

RLOBOPNCDF	RangeLatitudeOrBlankOP_7NetCDF	Latitude should be between -90E7 and 90E7
RL	RangeLatitude_7	Latitude should be between -90E7 and 90E7
RLOBOPNCDF	RangeLongitudeOrBlankOP_7NetCDF	Longitude should be between -180E7 and 180E7
RL	RangeLongitude_7	Longitude should be between -180E7 and 180E7

## 7.2 QCC Warnings

### Number of QCC reports with warnings

			Total nun	ber of occurrences	of each warning		
Product Type	BCSHNCDF	IOHHMOOR	MVIOEPFDNCDF	MVIOEPNCDF	MVIONCDF	RBSZOPOEPFDNCDF	RBSZOPOEPFDPLRMNCE
SIR_GOPM1B	184	0	0	0	0	0	0
SIR_GOPM_2	0	0	45	41	0	44	0
SIR_GOPN1B	95	0	0	0	0	0	0
SIR_GOPN_2	0	0	11	34	4	29	29
SIR_GOPR1B	139	0	0	0	0	0	0
SIR_GOPR_2	0	2	20	38	0	25	18
Product Type	RBSZOPOEPNCDF	RNELPOTONCDF	RPEPOPFDLRMNCDF	RPEPOPFDPLRMSA	RNCERPEPOPFDPLRMSINN	CDIRPEPOPFDSARNCDF	RPEPOPFDSINNCDF
SIR_GOPM1B	0	0	0	0	0	0	0
SIR_GOPM_2	37	0	36	0	0	0	0
SIR_GOPN1B	0	0	0	0	0	0	0
SIR_GOPN_2	15	2	0	0	20	0	33
SIR_GOPR1B	0	0	0	0	0	0	0
SIR_GOPR_2	10	9	0	41	0	48	0
Product Type	RPEPOPLRMNCDF	RPEPOPSARNCDF	RPEPOPSINNCDF	RSSBCONCDF	RSSHAOFDNCDF	RSSHAOFDPLRMNCDF	RSSHAONCDF
SIR_GOPM1B	0	0	0	0	0	0	0
SIR_GOPM_2	24	0	0	7	29	0	2
SIR_GOPN1B	0	0	0	0	0	0	0
SIR_GOPN_2	0	0	29	13	40	49	27
SIR_GOPR1B	0	0	0	0	0	0	0
SIR_GOPR_2	0	38	0	2	64	21	16

Product Type	RSWHOEPFDNCDF	RSWHOEPFDPLRMNCDF	RSWHOEPNCDF	SPHRTASCNSNCDF	SPHRTASCNSNCDF	SOOHHIFHD	SCSTODHRNCDF
SIR_GOPM1B	0	0	0	0	0	0	0
SIR_GOPM_2	42	0	2	0	0	0	0
SIR_GOPN1B	0	0	0	1	0	0	47
SIR_GOPN_2	33	32	12	0	0	0	0
SIR_GOPR1B	0	0	0	0	1	0	144
SIR_GOPR_2	28	41	1	0	1	4	0
-	·					·	
Product Type	IOHHMOOR	MVIOEPFDNCDF	MVIOEPNCDF	MVIONCDF	RBSZOPOEPFDNCDF	RBSZOPOEPFDPLRMNCD	RBSZOPOEPNCDF
SIR_GOP_2_	14	29	29	4	29	17	29
Product Type	RNELPOTONCDF	RPEPOPFDPLRMSINNCD	RPEPOPFDSINNCDF	RPEPOPSINNCDF	RSSBCONCDF	RSSHAOFDNCDF	RSSHAOFDPLRMNCDF
SIR_GOP_2_	7	15	26	22	16	29	17
Product Type	RSSHAONCDF	RSWHOEPFDNCDF	RSWHOEPFDPLRMNCDF	RSWHOEPNCDF	SPHLPQWNCDF	-	-

Test Description Key:	Test name	Datalla
Abbreviation	Test name	Details
BCSHNCDF	BurstCounterStep20HzNetCDF	The burst counter should be one higher with regard to the previous burst counter
IOHHMOOR	IndexOf1Hzin20HzMappingOutOfRange	The mapping of 20 Hz to 1 Hz measurements should be in the range 0 to (number of 1 Hz samples - 1)
MVIOEPFDNCDF	MissingValueIntOceanExcludingPolarFD2NetCDF	The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees
MVIOEPNCDF	MissingValueIntOceanExcludingPolarNetCDF	The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees
MVIONCDF	MissingValueIntOceanNetCDF	The value should not be a 'missing value' for surface type 0 only
RBSZOPOEPFDNCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2NetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RBSZOPOEPFDPLRM NCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2PLRMNetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RBSZOPOEPNCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarNetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RNELPOTONCDF	RangeNELPOceanTideOceanNetCDF	The Non-equilibrium long period ocean loading tide height should be between -40mm and 40mm (or missing) for surface type = ocean
RPEPOPFDLRMNCDF	RangePeakinessExcludingPolarOPFD2LRMNetCDF	The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEPOPFDPLRMSAR NCDF	RangePeakinessExcludingPolarOPFD2PLRMSARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEPOPFDPLRMSINN CDF	RangePeakinessExcludingPolarOPFD2PLRMSINNetCDF	The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEPOPFDSARNCDF	RangePeakinessExcludingPolarOPFD2SARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEPOPFDSINNCDF	RangePeakinessExcludingPolarOPFD2SINNetCDF	The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEPOPLRMNCDF	RangePeakinessExcludingPolarOPLRMNetCDF	The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEPOPSARNCDF	RangePeakinessExcludingPolarOPSARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEPOPSINNCDF	RangePeakinessExcludingPolarOPSINNetCDF	The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RSSBCONCDF	RangeSeaStateBiasCorrectionOceanNetCDF	The sea state bias correction should be between -500mm and 0mm (or missing) for surface type = ocean
RSSHAOFDNCDF	RangeSeaSurfaceHeightAnomalyOceanFD3NetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean
RSSHAOFDPLRMNCD F	RangeSeaSurfaceHeightAnomalyOceanFD3PLRMNetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean
RSSHAONCDF	RangeSeaSurfaceHeightAnomalyOceanNetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean
RSWHOEPFDNCDF	RangeSignificantWaveHeightOceanExcludingPolarFD2NetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RSWHOEPFDPLRMNC	RangeSignificantWaveHeightOceanExcludingPolarFD2PLRMNetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RSWHOEPNCDF	RangeSignificantWaveHeightOceanExcludingPolarNetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
SPHRTASCNSNCDF	SPH_Rel_Time_ASC_Node_Start_v2_NetCDF	Rel_Time_ASC_Node_Start mismatch (DBL ASC, rounded up to 0.1)
SPHRTASCNSNCDF	SPH_Rel_Time_ASC_Node_Stop_v2_NetCDF	Rel_Time_ASC_Node_Stop mismatch
SOOHHIFHD	SameOrOneHigher1HzIndexFor20HzData	The 1 Hz index of a 20 Hz sample should be the same or 1 higher than its previous sample

# 7.3 Missing QCC Reports

Number of products with missing QCC reports:

1

L1B and L2 Product name n/a

P2P Product name CS\_OFFL\_SIR\_GOP\_2\_20230326T233138\_20230327T002117\_C002