









S3 Product Notice – OLCI

Mission	S3-A				
Sensor	OLCI				
Product	OL_1_EFR in NRT and NTC				
Product	OL_1_ERR in NRT and NTC				
Product Notice ID	S3A.PN-OLCI-L1.03				
Issue/Rev Date	14/03/2018				
Version	1.0				
Preparation	This Product Notice was prepared by the S3 Mission Performance Centre and by ESA and EUMETSAT experts				
Approval	Joint ESA-EUM Mission Management				

Summary

This is a Product Notice for Sentinel-3 Ocean and Land Colour Instrument (OLCI) Level-1B products at Near Real Time (NRT) and Non Time Critical (NTC) timeliness. It corresponds to the abovementioned products generated by the processing baseline deployed for the Marine and Land Level 1 public release.

The Notice describes the OLCI current processing baseline, product and quality limitations, and product availability status.











Processing Baseline					
Processing Baseline	IPF Processing Baseline: 2.29				
IPFs version	• OL_1 IPF version: 06.07				
	• PUG version: 03.34				

Current Operational Processing Baseline					
IPF	IPF Version	In operation since (creation time)			
OL1	06.07	Land Centres:			
		NRT mode: 14/03/2018 TBD UTC NTC mode: 14/03/2018 TBD UTC			
		Marine Centre:			
		NRT mode: 14/03/2018 TBD UTC NTC mode: 14/03/2017 TBD UTC			
PUG	03.34	Land Centres:			
		NRT mode: 07/03/2018 10:03 UTC NTC mode: 07/03/2018 10:19 UTC			
		Marine Centre:			
		NRT mode: 07/03/2018 10:39 UTC NTC mode: 07/03/2018 10:39 UTC			











Status of the Processing Baseline

The current processing baseline for Sentinel-3A OLCI Level-1B products is v2.29. The baseline was deployed in the processing centres on 14/03/2018 at the Land and Marine Centres. The status of the baseline is as follows:

The major changes from the last processing baseline 2.23 are the following:

- Update of the Geometric Calibration to correct for the geolocation drift mostly affecting camera 3
- Update of the Dark Correction Tables to minimize Periodic Noise impact

The quality status of this baseline products is as follows:

Geometric Calibration

OLCI geolocation accuracy meets the mission requirements in terms of global RMS value (0.5 pixel according to <u>S3 MRTD</u>, <u>2011</u>). Validation of the updated Geometric Calibration, using Landsat ground control points on a partial reprocessing covering mid-October 2017 to end of January 2018 shows the following geolocation accuracy per camera:

Camera Module	Across Track Pixel Bias	Along Track Pixel Bias		
1	0.04	0.06		
2	0.06	0.04		
3	0.09	0.04		
4	0.08	0.04		
5	0.09	0.04		

Spectral Calibration

OLCI spectral model accuracy meets the mission requirements (<u>S3 MRTD</u>, <u>2011</u>). The model uses in-flight data from spectral calibrations. The calibrations bring small changes to the central wavelengths compared to OLCI pre-launch characterizations and a more significant change to channel Oa1 (400 nm) with up to 0.4nm difference. Consistently with the solar spectrum variability, the most significant change is in in-band irradiance of channel Oa1 (up to around 1.5%) with the same impact on radiometry. OLCI spectral response information and datasets are provided in a separate note (<u>S3 OLCI-A SRF</u>, <u>2016</u>).











Radiometric Calibration

- Radiometric validation results demonstrate that OLCI absolute radiometric calibration is comparable with its heritage instrument, MERIS, and that OLCI has a positive bias of about 2 to 3 percent throughout all bands, with the exception of band Oa21 (1020nm) at about 6 percent, OLCI being too bright. Actions are in place to achieve OLCI radiometric compliancy (2% absolute accuracy below 900 nm, 5% above 900 nm, <u>S3 MRTD</u>).
- The OLCI Radiometric Model is based on the entire set of in-flight radiometric calibrations. It includes radiometric gain coefficients at a reference date and a long-term evolution model. The set of radiometric gain coefficients used to derive both the Reference Gains and the Evolution Model have been computed using up-to-date geometric and spectral calibration and instrument settings and most of all an upgraded diffuser BRDF model based on in-flight data and diffuser ageing (browning) correction. The Radiometric Model is continuously monitored against new Radiometric Calibration acquisitions.

Known product quality limitations

Radiometric Calibration

- Vertical striping at the first 100 pixels at camera interfaces can be observed in bands O19 and O20. The effect is known as periodic noise. Correction is investigated.
- Single anomalous pixels, in particular in the region of the South Atlantic Anomaly, may occur due to prompt particle events.

Straylight

Verification of the OLCI straylight correction is ongoing.

Flags

• Accuracy of OLCI L1B product flags is under assessment. No issue has been identified so far.

Per-pixel uncertainty estimates

• Uncertainty estimates for OLCI radiances for all bands are not yet available in the products.











Products Availability

X	Copernicus Open Acces	s Hub	(https:/	/scihub.co	nernicus eu	/).	NRT	and NTC
\sim	CODCITICUS ODCITACCES	JIIUD	THUEDS./	/ Juli lub.cu	permeas.eu	, ,,	1 1 1 1 1	

- ☐ Copernicus Online Data Access (https://coda.eumetsat.int/), NRT and NTC
- ⋈ EUMETCast (https://eoportal.eumetsat.int/), NRT
- ☑ EUMETSAT Data Centre (https://eoportal.eumetsat.int/), NRT and NTC
- ☐ FTP server address login: login password: password
- ☐ Other

Product	EUMETCast	ODA*	CODA**	EUMETSAT Data Centre
L1 RR	NRT	NRT, NTC	NRT, NTC	NRT, NTC
L1 FR	NRT	NRT, NTC	NRT, NTC	NRT, NTC

^{*} ODA is available only for Copernicus Services and S3VT users

Any other useful information

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User Support

- Questions about OLCI products can be ask to the Sentinel-3 User Support desk at:
 - o eosupport@copernicus.esa.int
 - o ops@eumetsat.int

^{**} CODA is the pilot service Copernicus Online Data Access and is available to all users











References

- Sentinel-3 Mission Requirements Traceability Document (MRTD), C. Donlon, EOP-SM/2184/CD-cd, 2011.
 - https://sentinel.esa.int/documents/247904/1848151/Sentinel-3-Mission-Requirements-Traceability
- Sentinel-3 OLCI-A spectral response functions (SRF), Sentinel 3 CalVal Team, S3-TN-ESA-OL-660, 2016:
 - https://sentinels.copernicus.eu/documents/247904/2700436/Sentinel-3-OLCI-A-spectral-response-functions

Static L1 updated ADFs

■ S3A_OL_1_CAL_AX_20180125T041112_20991231T235959_20180208T120000______MPC_O_AL_018.SEN3

End of the Product Notice