



S3IPF PDS 007.2 - i2r11 - Auxiliary Data Format Specification - OLCI Level 2

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1 INTRODUCTION

1.1 Scope

This document aims to specify the format of the Sentinel 3 OLCI Level 2 Auxiliary Data Files including the browse processing elements.

The Auxiliary Data Format specification is intended as a living document. It is based on instrument and processing baseline information available at the current time. Parameters and values given in this document may change as the Instrument Processing Facilities (IPFs) evolves.

1.2 Applicable Documents

The following table lists the documents with a direct bearing on the content of this document.

	Document Title	Reference
AD- 1	Sentinel 3 PDGS File Naming Convention	EUM/LEO-SEN3/SPE/10/0070 GMES-S3GS-EOPG-TN-09-0009, 1.4, 24/06/2016
AD- 2	S-3 Core PDGS Implementation, Directory of Acronyms, Abbreviations and Definitions	S3PDGS.GLO.001, i5r1, 08/07/2014
AD- 3	Drivers for the S3 PDGS Processing Function Implementation	GMES-GSEG-EOPG-TN-11-0062, i1r7, 27/06/2014
AD- 4	Sentinels FOS File Format Specifications	GM-IC-ESC-FS-3001, Issue 1.8, 29/09/2014
AD- 5	Sentinel3 PDGS <-> SALP ICD	S3A-ID-M-00012-CN, Issue 1.6, 13/02/2017
AD- 6	GMES Sentinels POD Service File Format Specification	GMES-GSEG-EOPG-FS-10-0075, Issue 1.14, 01/10/2014
AD- 7	Metadata Specification	S3IPF.PDS.008, i3r4
AD- 8	GMES Sentinels - ECMWF to S3 PDGS ICD	GMES-GSEG-EOPG-IC-11-0049, Issue 2.3, 29/11/20146
AD- 9	Product Data Format Specification - Product Structures	S3IPF.PDS.002, Issue 1.7, 09/10/2017
AD- 10	Product Data Format Specification – OLCI Level 2 Marine	S3IPF.PDS.004.3, Issue 2.2 09/10/2017
AD- 11	Sentinel-3 Mission Planning File Format Specifications	GMES-GSEG-EOPG-TN-11-0007, Issue 1.5, 15/04/2014

1.3 Reference Documents

The following reference documents contain information supporting this document.

	Document Title	Reference
RD- 1	CCSDS 661.0-B-0 XFDU structure and construction rules	Issue Sept. 2008
RD- 2	Standard Archive Format for Europe. Control Book. Volume 1. Core Specifications	PGSI-GSEG-EOPG-FS-05-0001, i1r7, 2 Mar. 2009
RD- 3	Earth Observation Mission CFI Software EO_DATA_HANDLING Software User Manual	EO-MA-DMS-GS-0007
RD- 4	Sentinel-3 Level 0, Level 1a/b/c Products Definition Part 2: Optical Products Volume 2: OLCI L0, L1b Products (SY-4)	S3-RS-ACR-SY-00004, Issue: i7r1, 23/07/2013
RD- 5	Level 0, Level 1 Products Definition Part 2 : Optical Products Volume 5: Common Auxiliary Data Files	S3-RS-ACR-SY-00002, Issue: i7r1, 21/08/2013
RD- 6	Sentinel-3 Optical products and Algorithm Definition: OLCI Level 2 Input Output Data Description	S3-L2-SD-08-C-ACR-IODD, Issue: i2r11 , 07/02/2014

1.4 Terminology

Terms, Definitions and Abbreviated Terms are identified in [AD-9].

2 OLCI LEVEL 2 AUXILIARY DATA FILES

The following sections describe the static Auxiliary data files used by the OLCI Level 2 Processing chain

Table 1 OLCI Level 2 Auxiliary Data Files List

File	Proc. Level	Internal/ External	Static/ Dynamic	Reference Source	Generation Frequency	Format	Product Type PDGS	Auxiliary Data Size
Processing Control Parameter File	L2	I	S	IPF Consortium (OLCI L2P TDS)	Infrequently	NetCDF4	OL_2_PCP_AX	32KB
Pre-Processing Data File	L2	I	S	L2 O-PAD TDS	Infrequently	NetCDF4	OL_2_PPP_AX	9MB
Water Vapour Data File	L2	I	S	L2 O-PAD TDS	Infrequently	NetCDF4	OL_2_WVP_AX	29MB
Atmospheric Correction Data File	L2	I	S	L2 O-PAD TDS	Infrequently	NetCDF4	OL_2_ACP_AX	1.4GB
Ocean Colour Data File	L2	I	S	L2 O-PAD TDS	Infrequently	NetCDF4	OL_2_OCP_AX	4MB
Vegetation Data File	L2	I	S	L2 O-PAD TDS	Infrequently	NetCDF4	OL_2_VGP_AX	19KB
Climatology Data File	L2	I	S	L2 O-PAD TDS	Infrequently	NetCDF4	OL_2_CLP_AX	59MB
Reference Orbit Scenario File	L2	I	D	L2 O-PAD TDS	Infrequently	xml	AX__OSF_AX	0.068
FOS Orbit File (Restituted), time_init	L2	I	D	L2 O-PAD TDS	Frequently	xml	AX__FRO_AX	17.2

2.1 Processing Control Parameter File

The OLCI L2 Processing Control Parameter File contains the L2 processor configuration parameters.

FILE Type	Update rate	Size <i>(may vary if LUTs dimensions change)</i>
OL_2_PCP_AX	Infrequently	~32 KB

The file is in NetCDF format. The detailed structure and content of this file is presented in table below.

Table 2 Detailed structure of the OLCI L2 Processing Control Parameter File

Element name	Description	Range or value	T	D
<global common attributes>	Common global attributes as defined in [RD- 4]			
bands	Number of bands	21		
pair	Number of elements in a pair	2		
lambda_theo	Theoretical wavelengths		fl	bands
units	UDUNITS unit name	nm	S	1
ac_switch	Switch selecting the atmospheric correction model: 0 = Paralell branches 1 = Baseline 2 = Alternate	[0, 2]	us	1
land_ref_corr_switches	Switches enabling Smile Effect Correction for land pixels reflectance for each band		us	bands

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
land_ref_corr_bands	Pair of band indices (lower first, then upper) for land pixels estimation of reflectance spectral derivative for each band		us	bands pair
water_ref_corr_switches	Switches enabling Smile Effect Correction for water pixels reflectance for each band		us	bands
water_ref_corr_bands	Pair of band indices (lower first, then upper) for water pixels estimation of reflectance spectral derivative for each band		us	bands pair
error_estimates_switch	Switch enabling error estimate calculations	[0, 1]	us	1
theta_s_limit	Limit on SZA above which HISOLZEN flag is set		fl	1
add_offset_rxxx	add_offset value for the Rxxx products		fl	1
add_offset_adg_443_NN	add_offset value for the ADG443_NN product		fl	1
units	UDUNITS unit name	lg(re m-1)	S	1
add_offset_chl	add_offset value for the CHL_OC4ME and CHL_NN products		fl	1
units	UDUNITS unit name	lg(re mg.m-3)	S	1
add_offset_TSM_NN	add_offset value for the TSM_NN product		fl	1
units	UDUNITS unit name	lg(re g.m-3)	S	1
add_offset_kd_490_m07	add_offset value for the KD490_M07 product		fl	1
units	UDUNITS unit name	lg(re m-1)	S	1
add_offset_PAR	add_offset value for the PAR product		fl	1
units	UDUNITS unit name	microeinstein.m-2.s	S	1
add_offset_a_865	add_offset value for the A865 product		fl	1
add_offset_t_865	add_offset value for the T865 product		fl	1
add_offset_IWV	add_offset value for the IWV product		fl	1

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
units	UDUNITS unit name	kg.m-2	S	1
add_offset_OGVI	add_offset value for the OGVI product		fl	1
add_offset_rc_681	add_offset value for the RC681 product		fl	1
add_offset_rc_865	add_offset value for the RC865 product		fl	1
add_offset_OTCI	add_offset value for the OTCI product		fl	1
scale_factor_rxxx	scale_factor value for the Rxxx products		fl	1
scale_factor_adg_443_NN	scale_factor value for the ADG443_NN product		fl	1
units	UDUNITS unit name	lg(re m-1)	S	1
scale_factor_chl	scale_factor value for the CHL_OC4ME and CHL_NN products		fl	1
units	UDUNITS unit name	lg(re mg.m-3)	S	1
scale_factor_TSM_NN	scale_factor value for the TSM_NN product		fl	1
units	UDUNITS unit name	lg(re g.m-3)	S	1
scale_factor_kd_490_m07	scale_factor value for the KD490_M07 product		fl	1
units	UDUNITS unit name	lg(re m-1)	S	1
scale_factor_PAR	scale_factor value for the PAR product		fl	1
units	UDUNITS unit name	microeinstein.m-2.s	S	1
scale_factor_a_865	scale_factor value for the A865 product		fl	1
scale_factor_t_865	scale_factor value for the T865 product		fl	1
scale_factor_IWV	scale_factor value for the IWV product		fl	1

<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
units	UDUNITS unit name	kg.m-2	S	1
scale_factor_OGVI	scale_factor value for the OGVI product		fl	1
scale_factor_rc_681	scale_factor value for the RC681 product		fl	1
scale_factor_rc_865	scale_factor value for the RC865 product		fl	1
scale_factor_OTCI	scale_factor value for the OTCI product		fl	1

2.2 Pre-Processing Data File

The OLCI L2 Pre-Processing Data File contains the parameters used by the pixel classification step. The data is described in the following table, gathered by topic in groups.

Table 3 Groups of the OLCI L2 Pre-Processing Data File

<i>Name</i>	<i>Description</i>
classification_1	giving the the parameters dedicated to the clouds/snow/ice classification
gas_correction	providing the gas correction parameters
classification_2	providing the consolidated land/water classification parameters

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FILE Type	Update rate	Size (may vary if LUTs dimensions change)
OL_2_PPP_AX	Infrequently	< 10 MB

The file is in NetCDF format. The detailed structure and content of this file is presented in table below.

Table 4 Detailed structure of the OLCI L2 Pre-Processing Data File

Element name	Description	Range or value	T	D
<global common attributes>	Common global attributes as defined in [RD- 4]			
bands	Number of bands	21		
pair	Number of elements in a pair	2		
SZA_classif	Number of Sun Zenith Angles in several classification LUTs	12		
VZA_classif	Number of View Zenith Angles in several classification LUTs	12		
RAA_classif	Number of Relative Azimuth Angles in several classification LUTs	19		
tau_rayleigh	Rayleigh optical thickness at standard pressure for all bands, as used for LUTs computations		fl	bands
standard_pressure	Standard value of the surface pressure		fl	1
units	UDUNITS unit name	hPa	S	1
pressure_scale_height	Pressure scale height		fl	1
units	UDUNITS unit name	m	S	1
L_typ	Typical TOA radiance level for clear waters		fl	bands

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
units	UDUNITS unit name	mW.m-2.sr-1.nm-1	S	1
sigma_typ	Typical radiometric uncertainty at typical radiance level		fl	bands
units	UDUNITS unit name	mW.m-2.sr-1.nm-1	S	1
classification_1				
ti_rayleigh	Number of rayleigh transmittance coefficients	3		
tau_ray_alb	Number of optical thickness in ray_alb_LUT	15		
wind_az_rho_g	Number of wind azimuth angles in rho_g_LUT	7		
VZA_rho_g	Number of View Zenith Angles in rho_g_LUT	24		
RAA_rho_g	Number of Relative Azimuth Angles in rho_g_LUT	25		
windm_rho_g	Number of wind speed modulus in rho_g_LUT	5		
SZA_rho_g	Number of Sun Zenith Angles in rho_g_LUT	27		
fourier_poly_orders	Number of Fourier polynomial coefficient orders in ray_scatt_coeff_LUT	4		
fourier_series	Number of Fourier series terms in ray_scatt_coeff_LUT	3		
wavelengths_t_o2	Number of wavelengths in several pressure LUTs	21		
SZA_t_o2	Number of Sun Zenith Angles in several pressure LUTs	24		
VZA_t_o2	Number of View Zenith Angles in several pressure LUTs	24		
pressures_t_o2_atm	Number of pressure layers in t_o2_atm_LUT	21		
scatt_angles_APF_junge	Number of scattering angles in APF_junge_LUT	181		
angles_fresnel_coeff	Number of angles in fresnel_coeff_LUT	91		

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
cloudclassif_inp_dim1		21		
cloudclassif_inp_dim2		2		
cloudclassif_out_dim1		1		
cloudclassif_out_dim2		2		
cloudclassif_thr_dim1		1		
cloudclassif_thr_dim2		4		
Nb_CloudClassif_inputs		21		
Nb_CloudClassif_outputs		1		
CloudClassifvect_Size		10984		
a_b_rayleigh	Coefficients to correct for molecule anisotropy		fl	pair
ti_rayleigh	Rayleigh transmittance coefficients		fl	ti_rayleigh
b_bright_land	Index of band for test on Rayleigh corrected reflectance over land	[1, 21]	us	1
b_bright_water	Index of band for test on Rayleigh corrected reflectance over water	[1, 21]	us	1
b_bright_toa	Index of band for test on TOA reflectance over water	[1, 21]	us	1
b_slope1_n	Index of numerator band for slope test 1	[1, 21]	us	1
b_slope1_d	Index of denominator band for slope test 1	[1, 21]	us	1
b_slope2_n	Index of numerator band for slope test 2	[1, 21]	us	1
b_slope2_d	Index of denominator band for slope test 2	[1, 21]	us	1
b1_ODSI	First band index for ODSI computation (bluest band)	[1, 21]	us	1
b2_ODSI	Second band index for ODSI computation (reddest band)	[1, 21]	us	1

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
slope1_low	Lower limit of slope range for test 1		fl	1
slope1_high	Upper limit of slope range for test 1		fl	1
slope2_low	Lower limit of slope range for test 2		fl	1
slope2_high	Upper limit of slope range for test 2		fl	1
rho_toa_threshold	Thresholds on TOA reflectance at band b_bright_toa		fl	pair
ODSI_threshold	Threshold on ODSI		fl	1
p1_threshold	Apparent pressure threshold over land, far and close to coast		fl	pair
units	UDUNITS unit name	hPa	S	1
rho_754_threshold	Minimum b754 reflectance value to consider apparent pressure over land		fl	1
p_scatt_threshold	Apparent pressure threshold over water		fl	1
units	UDUNITS unit name	hPa	S	1
r_754_779_threshold	Minimum b754-b779 spectral slope value to consider apparent pressure over water		fl	1
high_glint_threshold	High glint threshold		fl	1
wind_az_rho_g	Wind azimuth angles of rho_g_LUT		fl	wind_az_rho_g
units	UDUNITS unit name	degrees	S	1
VZA_rho_g	View Zenith Angles of rho_g_LUT		fl	VZA_rho_g
units	UDUNITS unit name	degrees	S	1
RAA_rho_g	Relative Azimuth Angles of rho_g_LUT		fl	RAA_rho_g
units	UDUNITS unit name	degrees	S	1
windm_rho_g	Wind speed modulus of rho_g_LUT		fl	windm_rho_g

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
units	UDUNITS unit name	m.s-1	S	1
SZA_rho_g	Sun Zenith Angles of rho_g_LUT		fl	SZA_rho_g
units	UDUNITS unit name	degrees	S	1
rho_g_LUT	Sun glint reflectance LUT		fl	wind_az_rho_g VZA_rho_g RAA_rho_g windm_rho_g SZA_rho_g
tau_ray_alb	Optical thickness of ray_alb_LUT		fl	tau_ray_alb
ray_alb_LUT	Rayleigh spherical albedo as a function of optical thickness		fl	tau_ray_alb
SZA_classif	Sun Zenith Angles of several classification LUTs		fl	SZA_classif
units	UDUNITS unit name	degrees	S	1
VZA_classif	View Zenith Angles of several classification LUTs		fl	VZA_classif
units	UDUNITS unit name	degrees	S	1
RAA_classif	Relative Azimuth Angles of several classification LUTs		fl	RAA_classif
units	UDUNITS unit name	degrees	S	1
ray_scatt_coeff_LUT	LUT of polynomial coefficients for the Fourier series terms used to compute the correction factor for Rayleigh multiple scattering		fl	fourier_poly_orders fourier_series SZA_classif VZA_classif
rho_rc_LUT	LUT of brightness thresholds on Rayleigh corrected reflectance for land first, then water		fl	pair SZA_classif VZA_classif RAA_classif
wavelengths_t_o2	Wavelengths of several pressure LUTs		fl	wavelengths_t_o2

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
units	UDUNITS unit name	nm	S	1
SAZ_t_o2	Sun Zenith Angles of several pressure LUTs		fl	SAZ_t_o2
units	UDUNITS unit name	degrees	S	1
VZA_t_o2	View Zenith Angles of several pressure LUTs		fl	VZA_t_o2
units	UDUNITS unit name	degrees	S	1
t_o2_ray_LUT	O2 Rayleigh transmittance LUT		fl	wavelengths_t_o2 SAZ_t_o2 VZA_t_o2
t_o2_atm_aero_LUT	O2 aerosol atmospheric transmittance LUT for Ha=2km		fl	wavelengths_t_o2 SAZ_t_o2 VZA_t_o2
t_o2_fresnel_LUT	O2 aerosol Fresnel LUT		fl	wavelengths_t_o2 SAZ_t_o2 VZA_t_o2
pressures_t_o2_atm	Pressure of t_o2_atm_LUT		fl	pressures_t_o2_atm
units	UDUNITS unit name	hPa	S	1
t_o2_atm_LUT	O2 atmospheric transmittance LUT		fl	wavelengths_t_o2 pressures_t_o2_atm SAZ_t_o2 VZA_t_o2
adInpRange_CloudClassif	Input Neural Network for Cloud Classification		db	cloudclassif_inp_dim1 cloudclassif_inp_dim2
adOutRange_CloudClassif	Output Neural Network for Cloud Classification		db	cloudclassif_out_dim1, cloudclassif_out_dim2
CloudClassif_Range_SNOWICE	Min (excluded) and max (included) values for SNOW-ICE class		db	pair
CloudClassif_Range_CLOUD_SURE	Min (excluded) and max (included) values for CLOUD_SURE class (opaque clouds)		db	pair

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
CloudClassif_Range_ST_CLOUD	Min (excluded) and max (included) values for semi-transparent clouds class		db	pair
CloudClassif_Range_SPMX_LAND	Min (excluded) and max (included) values for spatially mixed clouds class over Land surfaces		db	pair
CloudClassif_Range_SPMX_WATER_NOGLINT	Min (excluded) and max (included) values for spatially mixed clouds class over Water surfaces without glint		db	pair
CloudClassif_Range_SPMX_WATER_GLINT	Min (excluded) and max (included) values for spatially mixed clouds class over Water surfaces with glint		db	pair
CloudClassifvect	Cloud Classification Data Vector		ub	CloudClassifvect_Size
b_CloudClassif_MinBrightness	Indices of bands CloudClassif_MinBrightness test (over land first, then water, 1-based)		us	pair
CloudClassif_MinBrightness_Cloud	Minimum brightness thresholds on TOA reflectance allowing to consider valid the CLOUD class (over land first, then water)		db	pair
CloudClassif_MinBrightness_CloudAmbiguous	Minimum brightness thresholds on TOA reflectance allowing to consider valid the CLOUD_AMBIGUOUS class(over land first, then water)		db	pair
APF_junge_LUT	LUT of the APF of the reference Junge aerosol model		fl	scatt_angles_APB_junge
fresnel_coeff_LUT	Fresnel coefficients LUT		fl	angles_fresnel_coeff
RR_cloud_mask_dilatation_factor	RR_cloud_mask_dilatation_factor		us	1
FR_cloud_mask_dilatation_factor	FR_cloud_mask_dilatation_factor		us	1
cloud_wang_shi_bands	Index of bands for cloud test of Wang and Shi, 2006, IEEE TGRS	[1, 21]	us	pair
cloud_wang_shi_thresholds	Two thresholds for cloud test of Wang and Shi, 2006, IEEE TGRS, rho_rc[b2] >= thre[0] && rho_rc[b1]/rho_rc[b2] <= thre[1]		db	pair
gas_correction				
lambda_t_h2o_709	Number of reference wavelengths for water vapour absorption at 709nm	21		
ncoefs_t_h2o		5		
ncoefs_t_h2o_709		8		

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
SZA_t_o2	Number of Sun Zenith Angles in t_o2_LUT	8		
VZA_t_o2	Number of View Zenith Angles in t_o2_LUT	7		
RAA_t_o2	Number of Relative Azimuth Angles in t_o2_LUT	7		
lambda_t_o2	Number of wavelengths in t_o2_LUT	11		
LN_t_o2	Number of normalized water leaving radiances in t_o2_LUT	9		
u_t_o2	Number of O2 absorber amounts in t_o2_LUT	10		
tau_o3_norm	Ozone optical thickness for 1 kg.m-2		fl	bands
tau_no2_norm	Nitrogen dioxide optical thickness for 1 kg.m-2		fl	bands
SZA_t_o2	Solar Zenith Angles of t_o2_LUT		fl	SZA_t_o2
units	UDUNITS unit name	degrees	S	1
VZA_t_o2	View Zenith Angles of t_o2_LUT		fl	VZA_t_o2
units	UDUNITS unit name	degrees	S	1
RAA_t_o2	Relative Azimuth Angles of t_o2_LUT		fl	RAA_t_o2
units	UDUNITS unit name	degrees	S	1
lambda_t_o2	Wavelengths of t_o2_LUT		fl	lambda_t_o2
units	UDUNITS unit name	nm	S	1
LN_t_o2	Normalized water leaving radiance of t_o2_LUT		fl	LN_t_o2
units	UDUNITS unit name	sr-1	S	1
u_t_o2	O2 absorber amounts of t_o2_LUT		fl	u_t_o2
p_ref_t_o2	Reference pressure to derive the O2 absorber amount from surface pressure		fl	1

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
units	UDUNITS unit name	hPa	S	1
t_o2_LUT	LUT for O2 correction at 779 nm		fl	u_t_o2 lambda_t_o2 LN_t_o2 SZA_t_o2 VZA_t_o2 RAA_t_o2
lambda_t_h2o_709	Reference wavelengths for water vapour transmittance at 709nm		fl	lambda_t_h2o_709
polynomials_t_h2o_709	Coefficients of the polynomials for water vapour transmittance at 709nm		fl	lambda_t_h2o_709, ncoefs_t_h2o_709
polynomials_t_h2o	Coefficients of the polynomials for water vapour transmittance		fl	bands, ncoefs_t_h2o
classification_2				
raa	Number of Relative Azimuth Angles	31		
vza	Number of View Zenith Angles	30		
sza	Number of Sun Zenith Angles	30		
tau	Number of optical thickness	21		
lat	Number of latitudes	90		
wls	Number of wavelengths	21		
z_max_inland	Maximal altitude for a reliable land/water re-classification		fl	1
units	UDUNITS unit name	m	S	1
beta_L	Threshold on spectral slope used in in-land waters screening over land		fl	1
beta_W	Threshold on spectral slope used in island screening over waters		fl	1
alpha_threshold_LW	Constant applying to threshold value derived from land/water reclassification LUT, 1st value for inland waters, 2nd for islands		fl	pair

<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
b_LW	Indices of bands to be used for comparison with threshold within the island and in-land waters screening	[1, 21]	us	pair
rho_threshold_LUT	LUT containing threshold values for in-land waters first, then islands screening		fl	pair SZA_classif VZA_classif RAA_classif
raa	Azimuth angles		fl	raa
vza	View zenith angles		fl	vza
sza	Sun zenith angles		fl	sza
tau	Optical thickness		fl	tau
lat	Latitude		fl	lat
wls	Wavelength		fl	wls
drho	Rayleigh infinitesimal increment		fl	raa vza sza tau
dttdown	Log of downward transmittance infinitesimal increment		fl	sza tau
dtup	Log of upward transmittance infinitesimal increment		fl	vza tau
tau_bod	Bodhaine Rayleigh optical thickness		fl	lat wls

2.3 Water Vapour Data File

The OLCI L2 Water Vapour Data File contains the parameters used by the water vapour retrieval step.

FILE Type	Update rate	Size <i>(may vary if LUTs dimensions change)</i>
OL_2_WVP_AX	Infrequently	< 30 MB

The file is in NetCDF format. The detailed structure and content of this file is presented in table below.

Table 5 Detailed structure of the OLCI L2 Water Vapour Data File

Element name	Description	Range or value	T	D
<global common attributes>	Common global attributes as defined in [RD- 4]			
SZA	Number of Sun Zenith Angles	10		
SZA_ocean_scatt_corr	Number of Sun Zenith Angles in ocean_scatt_corr LUTs	10		
VZA	Number of View Zenith Angles	6		
VZA_ocean_scatt_corr	Number of View Zenith Angles in ocean_scatt_corr LUTs	10		
RAA	Number of Relative Azimuth angles	19		
tau_land_scatt_corr	Number of aerosol optical thickness in land_scatt_corr LUTs	15		
tau_ocean_scatt_corr	Number of aerosol optical thickness in ocean_scatt_corr LUTs	10		

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
ALB_land_scatt_corr	Number of albedo in land_scatt_corr LUTs	12		
wind_speeds	Number of wind speeds in ocean_scatt_corr LUTs	15		
WV_scatt_corr	Number of Water Vapour in scatt_corr LUTs	6		
pressures	Number of pressure levels	27		
pressures_bounds	Number of pressure levels boundaries (pressures + 1)	28		
T_profiles	Number of temperature profiles	8		
NDVI	Number of NDVI in delta_albedo_900_LUT	11		
coefficients	Number of coefficients in coeffs LUTs	3		
tau_alpha_coeffs	Number of aerosol optical thickness in alpha_coeffs_LUT	41		
ALB_tau_coeffs	Number of albedo in tau_coeffs_LUT	11		
max_WV_abs_bins_885	Maximum number of water vapour absorption bins per temperature profile in 885 channel	8		
max_WV_abs_bins_900	Maximum number of water vapour absorption bins per temperature profile in 900 channel	51		
LN_wind_speed	Number of normalized luminances in wind_speed_LUT	93		
RAA_wind_speed	Number of Relative Azimuth Angles in wind_speed_LUT	37		

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
VZA_wind_speed	Number of View Zenith Angles in wind_speed_LUT	45		
SZA_wind_speed	Number of Solar Zenith Angles in wind_speed_LUT	51		
tau_wind_speed	Number of aerosol optical thickness in wind_speed_LUT	3		
np_885	Degree of the polynomial approximation of the exponential sum of the H ₂ O transmittance function at 885 nm	3		
np_900	Degree of the polynomial approximation of the exponential sum of the H ₂ O transmittance function at 900 nm	6		
high_glint_threshold	Water Vapour high glint threshold		fl	1
sliding_radius	Radius of sliding window considered for averaging		us	1
R_err_tol	Convergence criteria on transmittance ratio		fl	1
delta_R_err_tol	Threshold on iterative progression		fl	1
tau_default	Aerosol optical thickness, default case		fl	1
tau_perturb	Aerosol optical thickness, perturbed case (high aerosol layer)		fl	1
SZA	Solar Zenith Angles		fl	SZA
units	UDUNITS unit name	degrees	S	1
SZA_ocean_scatt_corr	Solar Zenith Angles of ocean_scatt_corr LUTs		fl	SZA_ocean_scatt_corr

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
units	UDUNITS unit name	degrees	S	1
VZA	View Zenith Angles		fl	VZA
units	UDUNITS unit name	degrees	S	1
VZA_ocean_scatt_corr	View Zenith Angles of ocean_scatt_corr LUTs		fl	VZA_ocean_scatt_corr
units	UDUNITS unit name	degrees	S	1
RAA	Relative Azimuth Angles of scatt_corr LUTs		fl	RAA
units	UDUNITS unit name	degrees	S	1
tau_land_scatt_corr	Aerosol optical thickness of land_scatt_corr LUTs		fl	tau_land_scatt_corr
tau_ocean_scatt_corr	Aerosol optical thickness of ocean_scatt_corr LUTs		fl	tau_ocean_scatt_corr
ALB_land_scatt_corr	Albedo of land_scatt_corr LUTs		fl	ALB_land_scatt_corr
wind_speeds	Wind speeds of ocean_scatt_corr LUTs		fl	wind_speeds
units	UDUNITS unit name	m.s-1	S	1
WV_scatt_corr	Water Vapour of scatt_corr LUTs		fl	WV_scatt_corr
units	UDUNITS unit name	kg.m-2	S	1

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
land_scatt_corr_LUT	Scattering correction factor LUT, Land case		fl	WV_scatt_corr tau_land_scatt_corr ALB_land_scatt_corr RAA VZA SZA
ocean_scatt_corr_LUT	Scattering correction factor LUT, Ocean case		fl	WV_scatt_corr tau_ocean_scatt_corr wind_speeds RAA VZA_ocean_scatt_corr SZA_ocean_scatt_corr
HAL_land_scatt_corr_LUT	Scattering correction factor LUT, Land perturbed case (high aerosol layer)		fl	WV_scatt_corr tau_land_scatt_corr ALB_land_scatt_corr RAA VZA SZA
HAL_ocean_scatt_corr_LUT	Scattering correction factor LUT, Ocean perturbed case (high aerosol layer)		fl	WV_scatt_corr tau_ocean_scatt_corr wind_speeds RAA VZA_ocean_scatt_corr SZA_ocean_scatt_corr
pressures_bounds	Pressure levels of profiles of WV_T_profile_LUT		fl	pressures_bounds
units	UDUNITS unit name	hPa	S	1
WV_T_profile_LUT	Atmosphere temperature profiles LUT		fl	T_profiles pressures_bounds
units	UDUNITS unit name	K	S	1

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
WV_valid_min	Water vapour valid minimum		fl	1
units	UDUNITS unit name	kg.m-2	S	1
WV_valid_max	Water vapour valid maximum		fl	1
units	UDUNITS unit name	kg.m-2	S	1
NDVI	NDVI of delta_albedo_900_LUT		fl	NDVI
delta_albedo_900_LUT	LUT of sensitivity of albedo to NDVI		fl	NDVI
tau_alpha_coefs	Aerosol optical thickness of alpha_coefs_LUT		fl	tau_alpha_coefs
alpha_coefs_LUT	LUT of surface albedo coefficients		fl	coefficients tau_alpha_coefs RAA VZA SZA
ALB_tau_coefs	Albedo of tau_coefs_LUT		fl	ALB_tau_coefs
tau_coefs_LUT	LUT of aerosol optical thickness coefficients		fl	coefficients ALB_tau_coefs RAA VZA SZA
var_inst	Instrumental contribution to uncertainty		fl	1
alpha_885_min	Albedo value above which transmittance ratio shall be corrected for albedo		fl	1

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
alpha_900_min	Floor value for albedo in uncertainty computation		fl	1
WV_abs_bins_885	Number of water vapour absorption bins in 885 channel for each temperature profile		us	T_profiles
tau_WV_885_LUT	Optical thickness of water vapour absorption bins in 885 channel		fl	T_profiles pressures max_WV_abs_bins_885
_FillValue	Default value for unused elements	-999	fl	1
weights_WV_885_LUT	Relative weights of water vapour absorption bins in 885 channel		fl	T_profiles max_WV_abs_bins_885
_FillValue	Default value for unused elements	-999	fl	1
WV_abs_bins_900	Number of water vapour absorption bins in 900 channel for each temperature profile		us	T_profiles
tau_WV_900_LUT	Optical thickness of water vapour absorption bins in 900 channel		fl	T_profiles pressures max_WV_abs_bins_900
_FillValue	Default value for unused elements	-999	fl	1
weights_WV_900_LUT	Relative weights of water vapour absorption bins in 900 channel		fl	T_profiles max_WV_abs_bins_900
_FillValue	Default value for unused elements	-999	fl	1
TCWV_layers_LUT	Partial reference total column water vapour above a certain pressure level for each temperature profile		fl	pressures T_profiles
units	UDUNITS unit name	kg.m-2	S	1

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
tau_ratio_865	Multiplicative factor for aerosol optical thickness at 865 nm		fl	1
tau_ratio_885	Multiplicative factor for aerosol optical thickness at 885 nm		fl	1
rho_885_min	Reflectance threshold below which AOT computation is required		fl	1
nb_iter_max	Maximum number of iterations		us	1
WV_err_valid_max	Maximum valid water vapour uncertainty		fl	1
LN_wind_speed	Normalized luminances of wind_speed_LUT		fl	LN_wind_speed
RAA_wind_speed	Relative Azimuth Angles of wind_speed_LUT		fl	RAA_wind_speed
units	UDUNITS unit name	degrees	S	1
VZA_wind_speed	View Zenith Angles of wind_speed_LUT		fl	VZA_wind_speed
units	UDUNITS unit name	degrees	S	1
SZA_wind_speed	Solar Zenith Angles of wind_speed_LUT		fl	SZA_wind_speed
units	UDUNITS unit name	degrees	S	1
tau_wind_speed	Aerosol optical thickness of wind_speed_LUT		fl	tau_wind_speed
wind_speed_LUT	LUT of wind speeds		fl	LN_wind_speed RAA_wind_speed VZA_wind_speed SZA_wind_speed tau_wind_speed

<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
units	UDUNITS unit name	m.s-1	S	1
ap_885_LUT	Coefficients of the polynomial approximation of the exponential sum of the H ₂ O transmittance function at 885 nm		fl	T_profiles pressures np_885
ap_900_LUT	Coefficients of the polynomial approximation of the exponential sum of the H ₂ O transmittance function at 900 nm		fl	T_profiles pressures np_900
WV_T_mode	Switch to use exact or approximate computation of H ₂ O transmittances at 885 and 900 nm (0 means the use of the exact computation, 1 means the use of the approximate formulation)		us	1

2.4 Atmospheric Correction Data File

The OLCI L2 Atmospheric Correction Data File contains the parameters used by the atmospheric correction step. The data is described in the following table, gathered by topic in groups.

Table 6 Groups of the OLCI L2 Atmospheric Correction Data File

<i>Name</i>	<i>Description</i>
glint_whitecaps	containing the glint and whitecaps correction parameters
bright_waters_NIR	giving the the parameters dedicated to the case 2 NIR reflectance estimation
standard_AC	providing the standard atmosphere correction parameters
alternate_AC	providing the alternate atmosphere correction parameters

FILE Type	Update rate	Size (may vary if LUTs dimensions change)
OL_2_ACP_AX	Infrequently	~1.4 GB

The file is in NetCDF format. The detailed structure and content of this file is presented in table below.

Table 7 Detailed structure of the OLCI L2 Atmospheric Correction Data File

Element name	Description	Range or value	T	D
<global common attributes>	Common global attributes as defined in [RD- 4]			
bands	Number of bands	21		
glint_whitecaps				
SZA	Number of Sun Zenith Angles in blue_rho_gc_threshold_LUT	23		
VZA	Number of View Zenith Angles in blue_rho_gc_threshold_LUT	13		
RAA	Number of Relative Azimuth Angles in blue_rho_gc_threshold_LUT	25		
pair	Number of elements in a pair	2		
gain vicarious	Vicarious adjustment gains		fl	bands
_FillValue	Default value for unused elements		fl	1
low_glint_threshold	Threshold for low glint (lower limit of significance)		fl	1
medium_glint_threshold	Threshold for medium glint (upper limit of high confidence on correction)		fl	1
whitecaps_threshold	Wind speed threshold for whitecaps		fl	pair
units	UDUNITS unit name	m.s-1	S	bands

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
whitecaps_alpha	Multiplicative coefficient for the white cap reflectances		fl	bands
units	UDUNITS unit name	s-3.m-3	S	1
whitecaps_gamma	Exponent coefficient for the white cap reflectances		fl	1
pressure_threshold	Threshold for low pressure water		fl	1
units	UDUNITS unit name	hPa	S	1
SZA	Sun Zenith Angles of blue_rho_gc_threshold_LUT		fl	SZA
units	UDUNITS unit name	degrees	S	1
VZA	View Zenith Angles of blue_rho_gc_threshold_LUT		fl	VZA
units	UDUNITS unit name	degrees	S	1
RAA	Relative Azimuth Angles of blue_rho_gc_threshold_LUT		fl	RAA
units	UDUNITS unit name	degrees	S	1
blue_rho_gc_threshold_LUT	LUT giving the glint corrected reflectance threshold at 412 nm		fl	SZA VZA RAA
units	UDUNITS unit name	hPa	S	1
bright_waters_NIR				
pair	Number of elements in a pair	2		
coefficients	Number of coefficients in f_p_LUT	8		
SZA	Number of Sun Zenith Angles in f_p_LUT	5		
VZA	Number of View Zenith Angles in f_p_LUT	5		
RAA	Number of Relative Azimuth Angles in f_p_LUT	13		
wind_speeds	Number of wind speeds in f_p_LUT	4		
alpha_scatt_threshold	Threshold on marine backscatter spectral slope estimate		fl	1
a_to_bbp_c	Specific absorption, case of coccoliths, b in {b709, b779, b865, b885}		fl	bands
units	UDUNITS unit name	m2.g-1	S	1

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
a_to_bbp_p	Specific absorption, case of particulate, b in {b709, b779, b865, b885}		fl	bands
units	UDUNITS unit name	m2.g-1	S	1
aw	Absorption of pure water		fl	bands
units	UDUNITS unit name	m-1	S	1
bbw	Backscattering of pure water		fl	bands
units	UDUNITS unit name	m-1	S	1
bbp_779_ie	Initial estimate of backscatter at 779 for LOW and HIGH band sets		fl	pair
units	UDUNITS unit name	m-1	S	1
bbp0_range	Minimum and maximum value of bbp0 for first estimate		fl	pair
units		m-1	S	1
bbp_init	Initial value of bbp to initialize rho_w_to_bbp routine		fl	1
units	UDUNITS unit name	m-1	S	1
bbp_star_c	Specific backscattering of sediment, case of coccoliths, b in {b709, b779, b865, b885}		fl	bands
units	UDUNITS unit name	m2.g-1	S	1
bbp_star_p	Specific backscattering of sediment, case of particulates, b in {b709, b779, b865, b885}		fl	bands
units	UDUNITS unit name	m2.g-1	S	1
rho_w_to_bbp_nb_iter	Number of iterations in the rho_w_to_bbp routine		us	1
rho_w_bbp_tol	Convergence criteria on bbp in the rho_w_to_bbp routine		fl	1
rhoa0_range	Minimum and maximum value of rhoa0 for first estimate		fl	pair
n_iter_chi2	Number of iterations in the chi2 minimisation		us	1
TSM_c2_threshold	Threshold on TSM concentration to identify sediment dominated waters		fl	1
SZA	Sun Zenith Angles of f_p_LUT		fl	SZA
units	UDUNITS unit name	degrees	S	1
VZA	View Zenith Angles of f_p_LUT		fl	VZA

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
units	UDUNITS unit name	degrees	S	1
RAA	Relative Azimuth Angles of f_p_LUT		fl	RAA
units	UDUNITS unit name	degrees	S	1
wind_speeds	Wind speeds of f_p_LUT		fl	wind_speeds
units	UDUNITS unit name	m.s-1	S	1
f_p_LUT	LUT of coefficients of F' to IOPs relation		fl	coefficients bands SZA VZA RAA wind_speeds
epsilon_range	Minimum and maximum value of epsilon for first estimate		fl	pair
u_apbp0	Uncertainty of ap_to_bbp		fl	1
u_sa	Uncertainty of ap slope		fl	1
u_sb	Uncertainty of bbp slope		fl	1
do_BPC	Switch to activate BPC		us	1
fomega_0	Default value for aerosol forward scattering probability times single scattering albedo		fl	1
tau_a_865_0	Default value for aerosol optical depth at 865 nm		fl	1
standard_AC				
ref_press	Number of reference pressures	6		
aerosol_lists	Number of aerosol lists	5		
max_aerosols_per_list	Maximum number of aerosol per list	20		
aerosols	Total number of actual aerosol models	31		
blue_aerosols	Total number of blue aerosol models	1		
tau_a	Number of optical thickness nodes in specdep and tau_a_865 LUTs	7		
coeff_x_c	Number of coefficients in x_c_LUT	3		

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
wind_speeds	Number of wind speeds in several atmosphere LUTs	4		
SZA	Number of Sun Zenith Angles in several atmosphere LUTs	24		
VZA	Number of View Zenith Angles in several atmosphere LUTs	20		
RAA	Number of Relative Azimuth Angles in several atmosphere LUTs	31		
months_aero_clim_ocean	Number of months in aero_clim_ocean_LUT	6		
lat_aero_clim_ocean	Number of latitudes in aero_clim_ocean_LUT	180		
lon_aero_clim_ocean	Number of longitudes in aero_clim_ocean_LUT	360		
climato_aux	Switch to activate the use of a climatology	[0, 1]	ub	1
chl_mean	Mean value of chlorophyll concentration		fl	1
units	UDUNITS unit name	mg.m-3	S	1
delta_rho_510_limit	Limit of delta_rho_510 to set the annotation flag		fl	1
delta_rho_510_B_threshold	Threshold for the blue aerosol test at 510 nm		fl	1
delta_rho_510_D_threshold	Threshold for the absorbing aerosol test at 510 nm		fl	1
nadir_f_over_q	Value of f/Q factor at nadir		fl	1
ref_press	Values of reference pressures	1040,1013,25,97 0,900,800,700	fl	ref_press
units	UDUNITS unit name	hPa	S	1
aerosols	Lists of aerosol models	[1, aerosols]	ss	aerosol_lists max_aerosols_per_list
_FillValue	Default value for unused elements	-1	ss	1
blue_aerosols	Lists of blue aerosol models (may be empty)	[1, aerosols]	ss	blue_aerosols
_FillValue	Default value for unused elements	-1	ss	1
tau_a_max	Maximum allowed value for aerosol optical thickness		fl	1
nb_passes	Maximum allowed number of passes in aerosol identification		us	1
pressure_tolerance	Threshold to activate a correction for pressure		fl	1

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
rho_w_negative_thresholds	LUT of negative water-leaving reflectance threshold		fl	bands
tau_a_865_threshold	Threshold for flagging the aerosol optical thickness		fl	1
nadir_theta_p	Value of theta_p for nadir view		fl	1
tau_a_865	LUT of the optical thickness of the aerosol assemblage at 865 nm		fl	aerosols tau_a
tau_a_spectral_dependency	LUT of the spectral dependence of the aerosol optical thickness		fl	aerosols bands tau_a
wind_speeds	Wind speeds of several atmosphere LUTs		fl	wind_speeds
units	UDUNITS unit name	m.s-1	S	1
SZA	Sun Zenith Angles of several atmosphere LUTs		fl	SZA
units	UDUNITS unit name	degrees	S	1
VZA	View Zenith Angles of several atmosphere LUTs		fl	VZA
units	UDUNITS unit name	degrees	S	1
RAA	Relative Azimuth Angles of several atmosphere LUTs		fl	RAA
units	UDUNITS unit name	degrees	S	1
rho_rayleigh_LUT	LUT for the Rayleigh reflectance above water as a function of geometry, wind speed, wavelength and for NP reference pressure levels		fl	ref_press bands wind_speeds SZA VZA RAA
x_c_LUT	LUT for polynomial coefficients linking the ratio rho_path / rho_rayleigh to the aerosol optical thickness		fl	ref_press aerosols bands wind_speeds SZA VZA RAA coeff_x_c

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
t_down_LUT	LUT for downward diffuse transmittance		fl	ref_press aerosols bands SZA tau_a wind_speeds
t_up_LUT	LUT for upward diffuse transmittance		fl	ref_press aerosols bands VZA tau_a
f_a_LUT	LUT for the aerosol forward scattering probability f_a		fl	aerosols bands
w_a_LUT	LUT for the aerosol single scattering albedo w_a		fl	aerosols bands
months_aero_clim_ocean	Months of aero_clim_ocean_LUT (integer values meaning mid-month)	[0.5, 12.5]	fl	months_aero_clim_ocean
units	UDUNITS unit name	day	S	1
lat_aero_clim_ocean	Latitudes of aero_clim_ocean_LUT	[-90, 90]	fl	lat_aero_clim_ocean
units	UDUNITS unit name	degrees_north	S	1
lon_aero_clim_ocean	Longitudes of aero_clim_ocean_LUT	[0, 360]	fl	lon_aero_clim_ocean
units	UDUNITS unit name	degrees_east	S	1
aero_clim_ocean_LUT	Map of aerosol climatology over ocean		uc	months_aero_clim_ocean lat_aero_clim_ocean lon_aero_clim_ocean
alternate_AC				
RL_TOSA	Number of Alternate AC input bands	15		
NN_size		262144		
aaNNvect_Size	Storage size of auto-associative neural net object (bytes)	35177		

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
aacrpathNNvect_Size	Storage size of auto-atmosphere transmittance neural net object (bytes)	47969		
aacrwnNNvect_Size	Storage size of water-leaving radiance-reflectance neural net object (bytes)	167825		
aactransNNvect_Size		172456		
adInpRange_AAC_dim1		23		
adInpRange_AAC_dim2		2		
adOutRange_aaNN_dim1		16		
adOutRange_aaNN_dim2		2		
adOutRange_rhopathNN_dim1		16		
adOutRange_rhopathNN_dim1		2		
adOutRange_rwNN_dim1		16		
adOutRange_rwNN_dim2		2		
adOutRange_transNN_dim1		32		
adOutRange_transNN_dim2		2		
standard_u_o3	Standard O3 content		fl	1
units	UDUNITS unit name	kg.m-2	S	1
RL_TOSA_valid_min	Minimum acceptable value for RL_TOSA		fl	RL_TOSA
units	UDUNITS unit name	sr-1	S	1
RL_TOSA_valid_max	Maximum acceptable value for RL_TOSA		fl	RL_TOSA
units	UDUNITS unit name	sr-1	S	1
RL_w_NN	Neural network for water-leaving radiance-reflectance retrieval		ub	NN_size
out_of_scope_index_threshold	Threshold on Out Of Scope Index		fl	1
units	UDUNITS unit name	sr-1	S	1
trans_threshold	Threshold on atmosphere transmittance to compute turbid atmosphere flag		fl	1
aaNNvect	Auto-associative neural network for RL_TOSA scope checks		uc	aaNNvect_Size

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
aacrpathNNvect	rhow Neural Network for Alternate Atmospheric Corrections		ub	aacrwnNNvect_Size
aactransNNvect	transmittance Neural Network for Alternate Atmospheric Corrections		ub	aactransNNvect_Size
adInpRange_AAC	adInpRange for Alternate Atmospheric Correction NN		db	adInpRange_AAC_dim1 adInpRange_AAC_dim2
adOutOfRange_aaNN	adOutOfRange_aa for Alternate Atmospheric Correction NN		db	adOutOfRange_aaNN_dim1 adOutOfRange_aaNN_dim2
adOutOfRange_rhopathNN	adOutOfRange_rhopath for Alternate Atmospheric Correction NN		db	adOutOfRange_rhopathNN_dim1 adOutOfRange_rhopathNN_dim2
adOutOfRange_rwNN	adOutOfRange_rw for Alternate Atmospheric Correction NN		db	adOutOfRange_rwNN_dim1 adOutOfRange_rwNN_dim2
adOutOfRange_transNN	adOutOfRange_trans for Alternate Atmospheric Correction NN		db	adOutOfRange_transNN_dim1 adOutOfRange_transNN_dim2
aerosol_NN	Neural network for aerosol load retrieval		ub	NN_size
auto_NN	Auto-associative neural network for RL_TOSA scope checks		ub	NN_size
gain_vicarious_AAC	Vicarious adjustment gains of RL_TOSA for Alternate Atmosphere Correction		fl	bands
thresh_absd_log_rtosa	threshold for TOSA reflectance Out Of Scope flag		fl	1
thresh_rtosaaaNNratmax	high threshold for F_OUT_OF_SCOPE_AAC flag		fl	1
thresh_rtosaaaNNratmin	low threshold for F_OUT_OF_SCOPE_AAC flag		fl	1
aactransNNvect	Neural network for atmosphere transmittance retrieval		uc	aactransNNvect_Size

<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
aacrwnnvect	Neural network for water-leaving radiance-reflectance retrieval		uc	aacrwnnvect_Size

2.5 Ocean Colour Data File

The OLCI L2 Ocean Colour Data File contains the parameters used by the ocean colour algorithms step.

<i>FILE Type</i>	<i>Update rate</i>	<i>Size (may vary if LUTs dimensions change)</i>
OL_2_OCP_AX	Infrequently	< 5 MB

The file is in NetCDF format. The detailed structure and content of this file is presented in table below.

Table 8 Detailed structure of the OLCI L2 Ocean Colour Data File

<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
<global common attributes>	Common global attributes as defined in [RD- 4]			
tau_a_FOQ	Number of aerosol optical thickness in f_over_q_LUT	1		
wind_speeds_FOQ	Number of wind speeds in f_over_q_LUT	3		
wavelengths_FOQ	Number of wavelengths in f_over_q_LUT	11		
SZA_FOQ	Number of Sun Zenith Angles in f_over_q_LUT	6		
PZA_FOQ	Number of refracted viewing zenith angles in f_over_q_LUT	30		

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
RAA_FOQ	Number of Relative Azimuth Angles in f_over_q_LUT	13		
chl_FOQ	Number of chlorophyll in f_over_q_LUT	6		
PZA_r_goth	Number of refracted viewing zenith angles in r_goth_LUT	90		
wind_speeds_r_goth	Number of wind speeds in r_goth_LUT	9		
wavelengths_f0	Number of wavelengths in f0_LUT	4		
chl_f0	Number of chlorophyll in f0_LUT	6		
range	Number of elements in a range	2		
chl_oc4me_HWLR	Number of polynomial coefficients to compute HWLR_threshold	4		
log10_coef	Number of coefficients in log10_coef_LUT	6		
pair	Number of elements in a pair	2		
kd_490_m07_a_x	Number of coefficients for the Morel 2007 diffuse attenuation coefficient calculation	5		
angstrom_PAR	Number of Angstrom exponents in PAR_LUT	20		
u_o3_PAR	Number of ozone concentrations in PAR_LUT	20		
tau_a_PAR	Number of aerosol optical thickness (at 865 nm) in PAR_LUT	20		
w_t_PAR	Number of total column water vapour in PAR_LUT	20		
adInpRangeOP_dim1	Leading dimension inverse neural net inputs validity range (number of inputs)	17		
adInpRangeOP_dim2	Trailing dimension inverse neural net inputs validity range (2)	2		
adOutRangeOP_dim1	Leading dimension inverse neural net outputs validity range (number of outputs)	5		
adOutRangeOP_dim2	Trailing dimension inverse neural net outputs validity range (2)	2		
adInpRangeForward_dim1	Leading dimension forward neural net inputs validity range (number of inputs)	10		

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
adInpRangeForward_dim2	Trailing dimension forward neural net inputs validity range (2)	2		
adOutRangeForward_dim1	Leading dimension forward neural net outputs validity range (number of outputs)	12		
adOutRangeForward_dim2	Trailing dimension forward neural net outputs validity range (2)	2		
adInpRangeUncBias_dim1	Leading dimension uncertainty neural net inputs validity range (number of inputs)	5		
adInpRangeUncBias_dim2	Trailing dimension uncertainty neural net inputs validity range (2)	2		
adOutRangeUncBias_dim1	Leading dimension uncertainty neural net outputs validity range (number of outputs)	5		
adOutRangeUncBias_dim2	Trailing dimension uncertainty neural net outputs validity range (2)	2		
adInpRange_Rhow_Norm_dim1		17		
adInpRange_Rhow_Norm_dim2		2		
adOutRange_Rhow_Norm_dim1		12		
adOutRange_Rhow_Norm_dim2		2		
kd2_NNvect_Size	Storage size of forward neural net object (bytes)	270000		
adInpRangeUncBias_atotKd_dim1	Leading dimension uncertainty neural net inputs validity range (number of inputs)	5		
adInpRangeUncBias_atotKd_dim2	Trailing dimension uncertainty neural net inputs validity range (2)	2		
adOutRangeUncBias_atotKd_dim1	Leading dimension uncertainty neural net outputs validity range (number of outputs)	5		
adOutRangeUncBias_atotKd_dim2	Trailing dimension uncertainty neural net outputs validity range (2)	2		
adInpRangeKd_dim1	Leading dimension neural net inputs validity range (number of inputs)	17		
adInpRangeKd_dim2	Trailing dimension neural net inputs validity range (2)	2		
adOutRangeKd_dim1	Leading dimension neural net outputs validity range (number of outputs)	2		
adOutRangeKd_dim2	Trailing dimension neural net outputs validity range (2)	2		

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Element name	Description	Range or value	T	D
uncbiasc_atotkd_NNvect_Size	Storage size of inverse neural net object (bytes)	270000		
invNNvect_Size	Storage size of inverse neural net object (bytes)	270000		
forNNvect_Size	Storage size of forward neural net object (bytes)	270000		
uncbiascNNvect_Size	Storage size of uncreainty neural net object (bytes)	270000		
water_refraction_index	Water refraction index		fl	1
tau_a_FOQ	Aerosol optical thickness of f_over_q_LUT		fl	tau_a_FOQ
wind_speeds_FOQ	Wind speeds of f_over_q_LUT		fl	wind_speeds_FOQ
units	UDUNITS unit name	m.s-1	S	1
wavelengths_FOQ	Wavelengths of f_over_q_LUT		fl	wavelengths_FOQ
units	UDUNITS unit name	nm	S	1
SZA_FOQ	Sun Zenith Angles of f_over_q_LUT		fl	SZA_FOQ
units	UDUNITS unit name	degrees	S	1
PZA_FOQ	Refracted viewing zenith angles of f_over_q_LUT		fl	PZA_FOQ
units	UDUNITS unit name	degrees	S	1
RAA_FOQ	Relative Azimuth Angles of f_over_q_LUT		fl	RAA_FOQ
units	UDUNITS unit name	degrees	S	1
chl_FOQ	Chlorophyll of f_over_q_LUT		fl	chl_FOQ
units	UDUNITS unit name	mg.m-3	S	1

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Element name	Description	Range or value	T	D
f_over_q_LUT	LUT for the bidirectional factor f_over_q (case1 waters)		fl	tau_a_FOQ wind_speeds_FOQ wavelengths_FOQ SZA_FOQ PZA_FOQ RAA_FOQ chl_FOQ
PZA_r_goth	Refracted viewing zenith angles of r_goth_LUT		fl	PZA_r_goth
units	UDUNITS unit name	degrees	S	1
wind_speeds_r_goth	Wind speeds of r_goth_LUT		fl	wind_speeds_r_goth
units	UDUNITS unit name	m.s-1	S	1
r_goth_LUT	LUT for the ocean-atmosphere reflection factor		fl	PZA_r_goth wind_speeds_r_goth
chl_oc4me_init	Initial algal pigment index value		fl	1
units	UDUNITS unit name	mg.m-3	S	1
chl_oc4me_nb_iter	Number of iterations for chl_oc4me calculation		us	1
wavelengths_f0	Wavelengths of f0_LUT		fl	wavelengths_f0
units	UDUNITS unit name	nm	S	1
chl_f0	Chlorophyll of f0_LUT		fl	chl_f0
units	UDUNITS unit name	mg.m-3	S	1
f0_LUT	Factor relating irradiance reflectance to water IOPs (with Sun at zenith), bands in {443, 490, 510 , 560}		fl	wavelengths_f0 chl_f0
r_ratio_valid_range	Irradiance reflectance ratio validity range for chl_oc4me computation (min first, then max)		fl	range
NA1	Highest order of coefficients to use in log10_coeff_LUT		us	1

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
log10_coeff_LUT	Polynomial coefficients for algal pigment index retrieval in case 1 waters		fl	log10_coeff
ab_ci	Coefficient of CI Chl as a function of Chl Index (CI)		fl	pair
rrs_ci_thresh	Thresholds for mixing limits of Chl_OCMe and Chl_CI	sr-1	fl	pair
chl_oc4me_epsilon	Convergence criterium for iterative Chl calculation		fl	1
chl_oc4me_valid_range	chl_oc4me validity range (min first, then max)		fl	range
units	UDUNITS unit name	mg.m-3	S	1
chl_oc4me_HWLR	Polynomial coefficients to compute HWLR_threshold		fl	chl_oc4me_HWLR
chl_oc4me_high_threshold	Threshold to identify high algal pigment index		fl	1
units	UDUNITS unit name	mg.m-3	S	1
invNNvect	Neural net object for case 2 waters IOP inverse modelling		uc	invNNvect_Size
forNNvect	Neural net object for case 2 waters IOP forward modelling		uc	forNNvect_Size
kd2_NNvect	Neural net object for case 2 waters IOP forward modelling		uc	kd2_NNvect_Size
uncbiascNNvect	Neural net object for case 2 waters IOP uncertainty estimates modelling		uc	uncbiascNNvect_Size
uncbiasc_atokd_NNvect	Neural net object for case 2 waters IOP uncertainty estimates modelling		uc	uncbiasc_atokd_NNvect_Size
log_threshfak_oor	Threshold for IOP and Kd Out of Range and limit flag		fl	1
thresh_rwlogslope	Threshold for Rhow out of scope flag		fl	1
thresh_rwslopemin	Low threshold for Rhow out of scope flag		fl	1
thresh_rwslopemax	High threshold for Rhow out of scope flag		fl	1
adInpRange_NN	Valid ranges for inverse neural net inputs		db	Nb_NN_inputs NN_range_dim

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
adInpRangeIOP	Valid ranges for inverse neural net inputs		db	adInpRangeIOP_dim1 adInpRangeIOP_dim2
adInpRangeKd	Valid ranges for inverse neural net inputs		db	adInpRangeKd_dim1 adInpRangeKd_dim2
adInpRangeUncBias_atotKd	Valid ranges for uncertainty neural net inputs		dd	adInpRangeUncBias_atotKd_dim1 adInpRangeUncBias_atotKd_dim2
adInpRangeForward	Valid ranges for forward neural net inputs		db	adInpRangeForward_dim1 adInpRangeForward_dim2
adInpRangeUncBias	Valid ranges for uncertainty neural net inputs		db	adInpRangeUncBias_dim1 adInpRangeUncBias_dim2
adOutRange_NN	Valid ranges for forward neural net inputs		db	Nb_NN_inputs NN_range_dim
adOutRangeIOP	Valid ranges for inverse neural net outputs		db	adOutRangeIOP_dim1 adOutRangeIOP_dim2
adOutRangeKd	Valid ranges for inverse neural net outputs		db	adOutRangeKd_dim1 adOutRangeKd_dim2
adOutRangeUncBias_atotKd	Valid ranges for uncertainty neural net outputs		db	adOutRangeUncBias_atotKd_dim1 adOutRangeUncBias_atotKd_dim2
adOutRangeForward	Valid ranges for forward neural net outputs		db	adOutRangeForward_dim1 adOutRangeForward_dim2

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Element name	Description	Range or value	T	D
adOutOfRangeUncBias	Valid ranges for uncertainty neural net outputs		db	adOutOfRangeUncBias_dim1 adOutOfRangeUncBias_dim2
switch_normalisation	Switch to activate NN inputs normalization / output denormalisation (1=activate)		Int	1
inv_abs_chl_NN	Conversion factors for Chl_NN (first factor is in mg.m-3 and second is dimensionless)		fl	pair
inv_scatt_TSM_NN	Conversion factor for TSM_NN (first factor for sediment, second for white scatterers)		fl	pair
units	UDUNITS unit name	g.m-3	S	1
kd_490_m07_a_x	Coefficients for the Morel 2007 diffuse attenuation coefficient calculation		fl	kd_490_m07_a_x
kw_490	Pure water vertical attenuation coefficient at 490 nm		fl	1
kd_490_m07_valid_range	kd_490_m07 validity range (min first, then max)		fl	range
units	UDUNITS unit name	m-1	S	1
r_560_min	Low reflectance threshold at 560 nm		fl	1
angstrom_PAR	Angstrom exponents of PAR_LUT		fl	angstrom_PAR
u_o3_PAR	Ozone concentrations of PAR_LUT		fl	u_o3_PAR
units	UDUNITS unit name	kg.m-2	S	1
tau_a_PAR	Aerosol optical thickness (at 865 nm) of PAR_LUT		fl	tau_a_PAR
w_t_PAR	Total column water vapour of PAR_LUT		fl	w_t_PAR
units	UDUNITS unit name	kg.m-2	S	1
PAR_LUT	LUT giving PAR		fl	angstrom_PAR u_o3_PAR tau_a_PAR w_t_PAR

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
units	UDUNITS unit name	microeinstein.m-2.s-1	S	1
rhow_norm_nn				
NNvect_Size	Number of Alternate AC input bands	74073		
Nb_NN_inputs		17		
NN_range_dim		2		
Nb_NN_outputs		12		
NNvect	NN Data Vector		ub	NNvect_Size
adInpRange_NN	Validity range of Neural Network inputs		db	Nb_NN_inputs NN_range_dim
adOutRange_NN	Validity range of Neural Network outputs		db	Nb_NN_outputs NN_range_dim
switch_normalisation	switch to activate normalization of NN inputs and denormalisation of outputs (1=activate, 0=deactivate)		l	1

2.6 Vegetation Data File

The OLCI L2 Vegetation Data File contains the parameters used by the vegetation index retrieval step.

<i>FILE Type</i>	<i>Update rate</i>	<i>Size</i> <i>(may vary if LUTs dimensions change)</i>
OL_2_VGP_AX	Infrequently	< 30 KB

The file is in NetCDF format. The detailed structure and content of this file is presented in table below.

Table 9 Detailed structure of the OLCI L2 Vegetation Data File

Element name	Description	Range or value	T	D
<global common attributes>	Common global attributes as defined in [RD- 4]			
OGVI_bands	Number of bands used for OGVI computation	3		
classes	Number of surface types	2		
sets	Number of sets of polynomial coefficients	5		
orders	Number of polynomial coefficients	11		
range	Number of elements in a range	2		
OGVI_blue_band	Blue band index number		us	1
OGVI_red_band	Red band index number		us	1
OGVI_NIR_band	Near infrared band index number		us	1
OGVI_L_coeff	OGVI polynomial coefficients used for computing the polynomial ratio		fl	sets orders
K_OGVI	K _j OGVI coefficients; class in {VEG, BRIGHT} and band in {blue, red, NIR}		fl	classes OGVI_bands
theta_OGVI	Theta OGVI coefficients; class in {VEG, BRIGHT} and band in {blue, red, NIR}		fl	classes OGVI_bands
const_rho	Const_rho OGVI coefficients; class in {VEG, BRIGHT} and band in {blue, red, NIR}		fl	classes OGVI_bands
max_rho	Maximum acceptable TOA reflectance; band in {blue, red, NIR}		fl	OGVI_bands
NIR_to_ref_threshold	Near infrared to Red reflectance maximum ratio		fl	1
OTCI_valid_range	Range limits for OTCI (min first, then max)		fl	range

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>T</i>	<i>D</i>
OTCI_red_band	Red band number for OTCI		us	1
OTCI_NIR1_band	Near infrared band 1 for OTCI		us	1
OTCI_NIR2_band	Near infrared band 2 for OTCI		us	1
OTCI_NIR3_band	Near infrared band 3 for OTCI		us	1
rho_red_max	Maximum value of rho_top in red band to allow OTCI computation		fl	1
rho_nir2_min	Minimum value of rho_top in NIR2 band to allow OTCI computation		fl	1
rho_diff_min1	Minimum value of the reflectances difference between NIR1 and red to allow OTCI computation		fl	1
rho_diff_min2	Minimum value of the reflectances difference between NIR3 and red to allow OTCI computation		fl	1
OTCI_SZA_max	High threshold on Sun Zenith Angle for OCTI quality indicator		fl	1
units	UDUNITS unit name	degrees	S	1
OTCI_VZA_min	Low threshold for View Zenith Angle for OCTI quality indicator		fl	1
units	UDUNITS unit name	degrees	S	1
OTCI_VZA_max	High threshold for View Zenith Angle for OCTI quality indicator		fl	1
units	UDUNITS unit name	degrees	S	1
OTCI_sdi_threshold	Threshold on SDI for quality indicator		fl	1
OGVI_opt_ER	Optimisation model contribution to uncertainty of the FaPAR (TOAVI)		fl	1
OTCI_soil_green_band	Green band for soil in OTCI		us	1
RC681_opt_ER	Optimisation model contribution to uncertainty of red band rectified reflectance		fl	1
RC865_opt_ER	Optimisation model contribution to uncertainty of NIR band rectified reflectance		fl	1

2.7 Climatology Data File

The OLCI L2 Climatology Data File contains several climatology maps used in different steps of the processing chain.

<i>FILE Type</i>	<i>Update rate</i>	<i>Size</i> <i>(may vary if LUTs dimensions change)</i>
OL_2_CLP_AX	Infrequently	< 60 MB

The file is in NetCDF format. The detailed structure and content of this file is presented in table below.

Table 10 Detailed structure of the OLCI L2 Climatology Data File

Element name	Description	Range or value	T	D
<global common attributes>	Common global attributes as defined in [RD- 4]			
mid_month_julian_days	Number of months in mid_month_julian_days	12		
months_rho_w_510	Number of months in rho_w_510_mean_LUT and rho_w_510_sigma_LUT	12		
lat_rho_w_510	Number of latitudes in rho_w_510_mean_LUT and rho_w_510_sigma_LUT	1024		
lon_rho_w_510	Number of longitudes in rho_w_510_mean_LUT and rho_w_510_sigma_LUT	2050		
months_no2_clim	Number of months in no2_clim_LUT	12		
lat_no2_clim	Number of latitudes in no2_clim_LUT	720		
lon_no2_clim	Number of longitudes in no2_clim_LUT	1440		
months_salinity_clim	Number of months in salinity_clim_LUT	12		
lat_salinity_clim	Number of latitudes in salinity_clim_LUT	180		
lon_salinity_clim	Number of longitudes in salinity_clim_LUT	360		
months_SST_clim	Number of months in SST_clim_LUT	12		

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Element name	Description	Range or value	T	D
lat_SST_clim	Number of latitudes in SST_clim_LUT	180		
lon_SST_clim	Number of longitudes in SST_clim_LUT	360		
months_sea_ice_clim	Number of months in sea_ice_clim_LUT	12		
lat_sea_ice_clim	Number of latitudes in sea_ice_clim_LUT	180		
lon_sea_ice_clim	Number of longitudes in sea_ice_clim_LUT	360		
mid_month_julian_days	Day of year at mid-months	[0, 366]	fl	mid_month_julian_days
units	UDUNITS unit name	day	S	1
months_rho_w_510	Months of rho_w_510_mean_LUT and rho_w_510_sigma_LUT (integer values meaning mid-month)	[0.5, 12.5]	fl	months_rho_w_510
units	UDUNITS unit name	day	S	1
lat_rho_w_510	Latitudes of rho_w_510_mean_LUT and rho_w_510_sigma_LUT	[-90, 90]	fl	lat_rho_w_510
units	UDUNITS unit name	degrees_north	S	1
lon_rho_w_510	Longitudes of rho_w_510_mean_LUT and rho_w_510_sigma_LUT	[0, 360]	fl	lon_rho_w_510
units	UDUNITS unit name	degrees_east	S	1
rho_w_510_mean_LUT	Climatology giving the mean rho_w at 510 nm		uc	months_rho_w_510 lat_rho_w_510 lon_rho_w_510
_FillValue	Default value for unused elements		uc	1
scale_factor	The data must be multiplied by this factor after reading		fl	1
add_offset	This offset must be added to the data after reading (and after scaling if needed)		fl	1
rho_w_510_sigma_LUT	Climatology giving the rho_w variability at 510 nm		uc	months_rho_w_510 lat_rho_w_510 lon_rho_w_510
_FillValue	Default value for unused elements		uc	1
scale_factor	The data must be multiplied by this factor after reading		fl	1
add_offset	This offset must be added to the data after reading (and after scaling if needed)		fl	1
months_no2_clim	Months of no2_clim_LUT (integer values meaning mid-month)	[0.5, 12.5]	fl	months_no2_clim

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Element name	Description	Range or value	T	D
units	UDUNITS unit name	day	S	1
lat_no2_clim	Latitudes of no2_clim_LUT	[-90, 90]	fl	lat_no2_clim
units	UDUNITS unit name	degrees_north	S	1
lon_no2_clim	Longitudes of no2_clim_LUT	[0, 360]	fl	lon_no2_clim
units	UDUNITS unit name	degrees_east	S	1
no2_clim_LUT	Map of NO2		fl	months_no2_clim lat_no2_clim lon_no2_clim
units	UDUNITS unit name	kg.m-2	S	1
months_salinity_clim	Months of salinity_clim_LUT (integer values meaning mid-month)	[0.5, 12.5]	fl	months_salinity_clim
units	UDUNITS unit name	day	S	1
lat_salinity_clim	Latitudes of salinity_clim_LUT	[-90, 90]	fl	lat_salinity_clim
units	UDUNITS unit name	degrees_north	S	1
lon_salinity_clim	Longitudes of salinity_clim_LUT	[0, 360]	fl	lon_salinity_clim
units	UDUNITS unit name	degrees_east	S	1
salinity_clim_LUT	Map of Sea Surface Salinity		fl	months_salinity_clim lat_salinity_clim lon_salinity_clim
units	UDUNITS unit name	PSU	S	1
months_SST_clim	Months of SST_clim_LUT (integer values meaning mid-month)	[0.5, 12.5]	fl	months_SST_clim
units	UDUNITS unit name	day	S	1
lat_SST_clim	Latitudes of SST_clim_LUT	[-90, 90]	fl	lat_SST_clim
units	UDUNITS unit name	degrees_north	S	1
lon_SST_clim	Longitudes of SST_clim_LUT	[0, 360]	fl	lon_SST_clim
units	UDUNITS unit name	degrees_east	S	1

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Element name	Description	Range or value	T	D
SST_clim_LUT	Map of Sea Surface Temperature		fl	months_SST_clim lat_SST_clim lon_SST_clim
units	UDUNITS unit name	deg_C	S	1
months_sea_ice_clim	Months of sea_ice_clim_LUT (integer values meaning mid-month)	[0.5, 12.5]	fl	months_sea_ice_clim
units	UDUNITS unit name	day	S	1
lat_sea_ice_clim	Latitudes of sea_ice_clim_LUT	[-90, 90]	fl	lat_sea_ice_clim
units	UDUNITS unit name	degrees_north	S	1
lon_sea_ice_clim	Longitudes of sea_ice_clim_LUT	[0, 360]	fl	lon_sea_ice_clim
units	UDUNITS unit name	degrees_east	S	1
sea_ice_clim_LUT	Map of Sea Ice		fl	months_sea_ice_clim lat_sea_ice_clim lon_sea_ice_clim

3 OLCI LEVEL 2 BROWSE PROCESSING AUXILIARY DATA FILES

The following sections describe the Auxiliary data files used by the OLCI Level 2 Browse Processing chain

Table 11 Browse Processing Auxiliary Data Files List

File	Proc. Level	Internal/ External	Static/ Dynamic	Reference Source	Generation Frequency	Format	Product Type Original	Product Type PDGS	Auxiliary Data Size
OLCI Level 2 Browse Processing Control Parameter File	L2	I	S	IPF Consortium (BW TDS)	Infrequently	XML	OL_2_PCPBAX	OL_2_PCPBAX	0.008
OLCI Level 2 Browse Processing Palette Auxiliary File	L2	I	S	IPF Consortium (BW TDS)	Infrequently	ASCII	OL_2_PLTBAX	OL_2_PLTBAX	0.008

3.1 Processing Control Parameter File

FILE Type	Update rate	Size
OL_2_PCPBAX	Infrequently	32 KB

The OLCI L2 Browse Processing Control Parameter File is in XML format. The detailed structure and content of this file is presented in table below.

Table 12 Detailed structure of the OLCI L2 Browse Processing Control Parameter File

Element name	Description	Range or value	Unit	T	C
Ol2bw_Processsing_Control_Parameters	Open container				

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>Unit</i>	<i>T</i>	<i>C</i>
Formats	Open container				1
JPEG	Switch to enable the JPEG image format			B	1
quality	JPEG compression quality (default: 75). Low values result in higher compression ratios, but poorer image quality. Values above 95 are not meaningfully better quality but can be substantially larger.	[0, 100]		sl	1
PNG	Switch to enable the PNG image format			B	1
zlevel	PNG compression level (default: 6). Set the amount of time to spend on compression. A value of 1 is fast but does no compression, and a value of 9 is slow but does the best compression.	[1, 9]		sl	1
JPEG2000	Switch to enable the JPEG2000 image format			B	1
quality	JPEG2000 compression quality (default: 25). A value of 50 means the file will be half-size in comparison to uncompressed data, 33 means 1/3, etc...	[0, 100]		sl	1
reversible	Switch to enable the JPEG2000 lossless compression mode (default: FALSE)			B	1
GEOTIFF	Switch to enable the GeoTIFF image format			B	1
compress	GeoTIFF internal compression (default: "None")	{"None", "PACKBITS"}		S	1
Formats	Close container				1
LandProcessing	Open container				
ScientificFields	Open container			S	1
ScientificField	Scientific field to be browsed (default: "OTCI")	{ "OTCI", "OGVI", "RC681", "RC865", "IWV" } and corresponding errors		S	1
scale_min	Smallest value of scientific field to be used for scaling				1
scale_max	Largest value of scientific field to be used for scaling				1
palette	Name of the palette file included in the palette ADF				1
apply_log	Switch activating the application of LOG	[0,1]			1

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<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>Unit</i>	<i>T</i>	<i>C</i>
log_base	Base of the logarithm applied	> 0			1
ScientificFields	Close container			S	1
flagList	Open container			ub	1
flag	Flag value on which the mask will apply (one string value selected from the attribute flag_meanings of the variable LQSF)	See AD-10		S	1
apply_mask	Boolean for the mask activation	[0, 1]		sl	1
R	Value for the Red channel set for the color of the mask	[0, 255]		sl	1
G	Value for the Green channel set for the color of the mask	[0, 255]		sl	1
B	Value for the Blue channel set for the color of the mask	[0, 255]		sl	1
flagList	Close container			ub	1
LandProcessing	Close container				
WaterProcessing	Open container				
ScientificFields	Open container			S	1
ScientificField	Scientific field to be browsed (default: "CHL_OC4ME")	{ "Oa01_reflectance", "Oa02_reflectance", ... "Oa21_reflectance", "CHL_OC4ME", "CHL_NN", "TSM_NN", "KD490_M07", "PAR", "T865", "A865", "IWV", "ADG443_NN"} and corresponding errors		S	1
scale_min	Smallest value of scientific field to be used for scaling				1
scale_max	Largest value of scientific field to be used for scaling				1
palette	Name of the palette file included in the palette ADF				1

<i>Element name</i>	<i>Description</i>	<i>Range or value</i>	<i>Unit</i>	<i>T</i>	<i>C</i>
apply_log	Switch activating the application of LOG	[0,1]			1
log_base	Base of the logarithm applied	> 0			1
ScientificFields	Close container			S	1
flagList	Open container			ub	1
flag	Flag value on which the mask will apply (one string value selected from the attribute flag_meanings of the variable WQSF)	See AD-11		S	1
apply_mask	Boolean for the mask activation	[0, 1]		sl	1
R	Value for the Red channel set for the color of the mask	[0, 255]		sl	1
G	Value for the Green channel set for the color of the mask	[0, 255]		sl	1
B	Value for the Blue channel set for the color of the mask	[0, 255]		sl	1
flagList	Close container			ub	1
WaterProcessing	Close container				
SubSampling	Sub-sampling factor (default: 1)	1, 2, 4, 8,...		sl	1
ReOrientation	Re-orient image to a standard east-west north-south referential (default: FALSE)			B	1
ngEOfootPrint	Open container				1
aSubSampling	Sub-sampling factor applied on the along-track direction			sl	1
aSubSampling	Sub-sampling factor applied on the across-track direction			sl	1
maxAIPoints	Maximum number of points to keep in the along-track direction			sl	1
ngEOfootPrint	Close container				1
Ol2bw_Processsing_Control_Parameters	Close container				

3.2 Palette Auxiliary File

The file is in ASCII format. The detailed structure and content of this file is presented in the section 0.

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<i>FILE Type</i>	<i>Update rate</i>	<i>Size</i>
OL_2_PLTBAX	Infrequently	8 KB