

EUMETSAT - Copernicus Sentinel-3 SLSTR L2 NRT AOD Product Data Format Specification

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1 INTRODUCTION

1.1 Scope

This document describes the format of the Near Real Time (NRT) Level 2 (L2) Aerosol Optical Depth (AOD) product generated from the Copernicus Sentinel-3 (S3) Sea and Land Surface Temperature Radiometer (SLSTR) by EUMETSAT.

It is applicable to the following release: Instrument Processing Facility (IPF) version 2.0, EUMETSAT Processing Baseline (PB) 2.70, Baseline Collection (BC) 1. Further information about this release status and associated quality and known limitations are available the Copernicus Sentinel-3 Product notice SLSTR Level-2 NRT AOD document (see RD-4).

1.2 Applicable Documents

	Document Title	Reference
AD-1	Sentinel 3 PDGS File Naming Convention	EUM/LEO-SEN3/SPE/10/0070 GMES-S3GS-EOPG-TN-09-0009, Issue 1.3, 07/11/2012
AD-2	Product Data Format Specification - Product Structures	S3IPF.PDS.002, Issue 1.6, 10/02/2015
AD-3	XML Schemas.zip – Zip file containing all the schemas used to represent the metadata	S3IPF.PDS.009, i2r5 – 26/03/2015
AD-4	EUMETSAT - SLSTR L2 NRT AOD Auxiliary Data Format Specification	EUM/SEN3/DOC/20/1180728, v1.0, 11/08/2020.

1.3 Reference Documents

**EUMETSAT - Copernicus Sentinel-3 SLSTR L2 NRT AOD Product Data
Format Specification**

	Document Title	Reference
RD-1	Product Data Format Specification - Level 0	S3IPF PDS 001 - Product Data Format Specification - Level 0
RD-2	Product Data Format Specification – SLSTR Level 1 and 2	S3IPF PDS 005 - Product Data Format Specification - SLSTR
RD-3	Copernicus Sentinel-3 Near real Time Aerosol Optical Depth Retrieval from SLSTR – S3 SLSTR L2 AOD ATBD	Under editing
RD-4	Copernicus Sentinel-3 Product notice SLSTR Level-2 NRT AOD	EUM/SEN3/DOC/20/11880 82

1.4 Terminology

AD	Applicable Document
ADF	Auxiliary Data File
AOD	Aerosol Optical Depth
ATBD	Algorithm Theoretical Basis Document
BT	Brightness Temperature
CFI	Customer Furnished Items
ESA	European Space Agency
EUMETSAT	European Organisation for the Exploitation of Meteorological Satellites
IPF	Instrument Processing Facility
L1	Level 1
L2	Level 2
NRT	Near Real Time
NTC	Non Time Critical
PDGS	Payload Data Ground Segment
RSP	Remote Sensing and Products division
RD	Reference Document
S3	Sentinel-3
SLSTR	Sea and Land Surface Temperature Radiometer
SSA	Single Scattering Albedo
SST	Sea Surface temperature

1.5 Document Structure

This document is structured as follow:

- Overview of the S3 SLSTR L1 and L2 products in Section 0;
- NRT S3 SLSTR L2 AOD product description in Section 2;
- XML diagram in Section 3;
- NRT S3 SLSTR L2 AOD product size in Section 4.

2 NRT S3 SLSTR L2 AOD PRODUCT DESCRIPTION

2.1 General product structure - Layout

The format of all Sentinel 3 products is described in [AD-2] and illustrated in Figure 1.

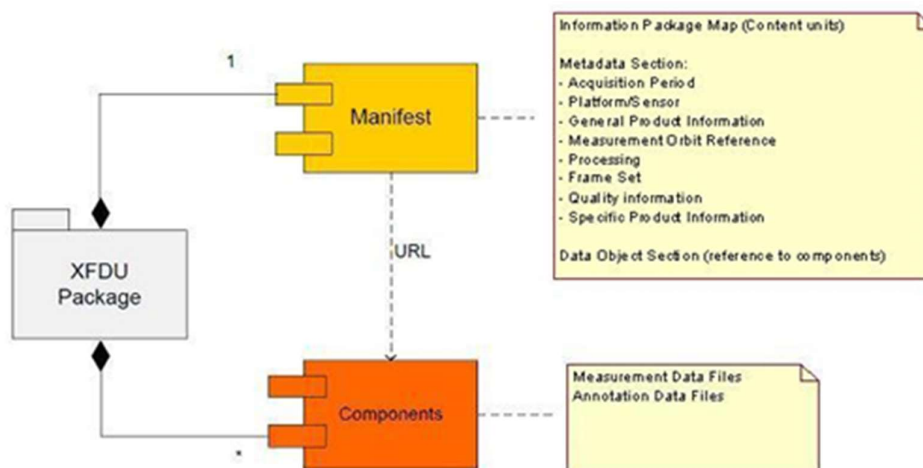


Figure 1: S3 Product package

2.2 NRT S3 SLSTR L2 AOD product package & summary

A SLSTR L2 NRT AOD granule contains one single file gathering all aerosol and surface directional parameters and its associated manifest file (see Table 1). The spatial resolution is 9.5 km, with a global coverage (ocean and land). The products are only generated in NRT timeliness.

Table 1: NRT SLSTR L2 AOD package

Element name	Description	Reference
xfdumanifest.xml	Sentinel-SAFE product manifest file, composed of xml fields.	x.x or AD-x
NRT_AOD.nc	Surface directional Reflectance, retrieved and derived global aerosol parameter at several spectral bands. Contextual parameters and flags are also included.	Section 2.2.2

2.2.1 Manifest file

The structure of the manifest file is described in [AD-3].

2.2.2 SLSTR L2 NRT global aerosol parameters – NRT_AOD.nc

This file contains all derived aerosol and surface parameters from the SLSTR solar channels S1-S6, S4 being excluded (see Table 2). Some aerosol and surface parameters are given at several spectral bands. It is based on the SLSTR L1B NRT product at the original resolution of 500 m. The SLSTR L2 NRT AOD retrievals are provided at a super-pixel level with a resolution of 9.5 km, from the aggregation of 19 x 19 L1B pixels. Note that in this super-pixel, only cloud-free and glint-free radiances are considered. The coordinates of the super pixel are provided *via* the position of each of its corners, and of its centre.

Table 2: SLSTR Solar spectral channels

SLSTR channels	λ centre (nm)	bandwidth (nm)
S1	555	20
S2	659	20
S3	865	20
S5	1610	60
S6	2250	50

Table 3: NRT SLSTR L2 AOD – NRT_AOD.nc description

Element name	Description	Range or value	T	D
rows	Along track grid size			
columns	Across track grid size			
<common global attributes>	Common global attributes (see [Error! Reference source not found.] and Error! Reference source not found.)			
AOD_550	Aerosol optical thickness at 550 nm – Best quality Ocean only	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Atmospheric aerosol optical thickness at 550 nm - Best quality (post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
AOD_670	Aerosol optical thickness at 670 nm – Best quality Ocean only	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Atmospheric aerosol optical thickness at 550 nm - Best quality (post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1

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Element name	Description	Range or value	T	D
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
AOD_865	Aerosol optical thickness at 865 nm – Best quality Ocean only	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Atmospheric aerosol optical thickness at 550 nm - Best quality (post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
AOD_1600	Aerosol optical thickness at 1600 nm – Best quality Ocean only	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Atmospheric aerosol optical thickness at 550 nm - Best quality (post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
AOD_2250	Aerosol optical thickness at 2250 nm – Best quality Ocean only	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Atmospheric aerosol optical thickness at 550 nm - Best quality (post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
AOD_550_uncertainty	Uncertainty of aerosol optical thickness at 550 nm – Best quality Ocean only	[0, 6]	u16	rows columns
standard_name	CF standard name	Atmospheric aerosol optical thickness uncertainty at 550 nm - Best quality (post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1

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Element name	Description	Range or value	T	D
coordinates		latitude, longitude	S	1
FM_AOD550	Fine-mode aerosol optical depth at 550 nm – Best quality Ocean only	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Fine Mode atmospheric aerosol optical thickness due to ambient aerosol - Best quality (post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
ANG550_865	Aerosol Angstrom exponent between 550 and 865 nm – Best quality Ocean only	[-6, 6]	i16	rows columns
standard_name	CF standard name	Angstrom exponent of ambient aerosol in air - Best quality (post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	-32768	i16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0002	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
D_AOD550	Dust aerosol optical thickness at 550 nm – Best quality Ocean only	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Atmospheric dust optical thickness due to ambient aerosol - Best quality (post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
AAOD550	Aerosol absorption optical thickness at 550 nm – Best quality Ocean only	[0, 4.001]	u16	rows columns
standard_name	CF standard name	atmosphere optical thickness due to ambient aerosol	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
SSA_550	Aerosol single scattering albedo at 550 nm – Best quality Ocean only	[0, 4.001]	u16	rows columns

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Element name	Description	Range or value	T	D
standard_name	CF standard name	Atmospheric aerosol single scattering albedo at 550 nm - Best quality (post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
SSA_670	Aerosol single scattering albedo at 670 nm – Best quality Ocean only	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Atmospheric aerosol single scattering albedo at 550 nm - Best quality (post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
SSA_865	Aerosol single scattering albedo at 865 nm – Best quality Ocean only	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Atmospheric aerosol single scattering albedo at 550 nm - Best quality (post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
SSA_1600	Aerosol single scattering albedo at 1600 nm – Best quality Ocean only	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Atmospheric aerosol single scattering albedo at 550 nm - Best quality (post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
SSA_2250	Aerosol single scattering albedo at 2250 nm – Best quality Ocean only	[0, 4.001]	u16	rows columns

**EUMETSAT - Copernicus Sentinel-3 SLSTR L2 NRT AOD Product Data
Format Specification**

Element name	Description	Range or value	T	D
standard_name	CF standard name	Atmospheric aerosol single scattering albedo at 550 nm - Best quality (post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
Surface_reflectance_550	Surface directional reflectance (BRF) at 550 nm– Best quality Ocean only	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Surface directional reflectance (BRF) at 550 nm - Best quality (post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
AOD_550_Ocean_NonFiltered	Aerosol optical thickness at 550 nm – Ocean only, not post-filtered	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Atmospheric aerosol optical thickness at 550 nm - All quality (not post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
AOD_550_uncertainty_Ocean_NonFiltered	Uncertainty of aerosol optical thickness at 550 nm – Ocean only, not post-filtered	[0, 6]	u16	rows columns
standard_name	CF standard name	Atmospheric aerosol optical thickness uncertainty at 550 nm - All quality (not post-filtered due to e.g. cloud residuals, sedimentation...) - Only over ocean surfaces	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
AOD_550_Land_Experimental_NonFiltered	Aerosol optical thickness at 550 nm – Land Experimental only, not post-filtered	[0, 4.001]	u16	rows columns

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Element name	Description	Range or value	T	D
standard_name	CF standard name	Atmospheric aerosol optical thickness at 550 nm - All quality (not post-filtered due to e.g. cloud residuals, etc...) - Only over land surfaces - For Experimental purpose only	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
AOD_550_Land_Experimental_PostFiltered	Aerosol optical thickness at 550 nm – Best quality Land Experimental only	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Atmospheric aerosol optical thickness at 550 nm - Best quality (post-filtered due to e.g. cloud residuals, etc...) - Only over land surfaces - For Experimental purpose only	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
AOD_550_uncertainty_Land_Experimental_NonFiltered	Aerosol optical thickness uncertainty at 550 nm – Land Experimental only, not post-filtered	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Atmospheric aerosol optical thickness uncertainty at 550 nm - All quality (not post-filtered due to e.g. cloud residuals, etc...) - Only over land surfaces - For Experimental purpose only	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
FM_AOD_550_Land_Experimental_NonFiltered	Fine mode aerosol optical thickness at 550 nm – Land Experimental only, not post-filtered	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Fine Mode atmospheric aerosol optical thickness at 550 nm - All quality (not post-filtered due to e.g. cloud residuals, etc...) - Only over land surfaces - For Experimental purpose only	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1

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Element name	Description	Range or value	T	D
Surface_reflectance_550_Land_Experimental_NonFiltered	Surface directional reflectance (BRF) at 550 nm– Land Experimental only, not post-filtered	[0, 4.001]	u16	rows columns
standard_name	CF standard name	Surface directional reflectance (BRF) at 550 nm - All quality (not post-filtered due to e.g. cloud residuals, etc...) - Only over land surfaces – For Experimental purpose only	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
add_offset	this offset must be added to data after reading /scaling	0	f32	1
coordinates		latitude, longitude	S	1
time_reference_a	Acquisition time of the sub-satellite point included in each line since 2000-01-01 00:00:00 UTC	[0, 9223372036854775807L]	i64	rows columns
standard_name	CF standard name	time	S	1
units	UDUNITS unit name	µs	S	1
_Fillvalue	Default value range for unused elements	-1	i64	1
time	Acquisition time since 2000-01-01 00:00:00 UTC of the central pixel	[0, 9223372036854775807L]	i64	rows columns
standard_name	CF standard name	time	S	1
units	UDUNITS unit name	µs	S	1
_Fillvalue	Default value range for unused elements	-1	i64	1
latitude	Latitude at pixel centre	[-90, 90]	f32	rows columns
standard_name	CF standard name	latitude	S	1
units	UDUNITS unit name	degrees_north	S	1
_Fillvalue	Default value range for unused elements	-999	f32	1
longitude	Longitude at pixel centre	[-180, 180]	f32	rows columns
standard_name	CF standard name	longitude	S	1
units	UDUNITS unit name	degrees_east	S	1
_Fillvalue	Default value range for unused elements	-999	f32	1
pixel_corner_latitude_corner_1	Latitude at pixel corner 1	[-90, 90]	f32	rows columns
standard_name	CF standard name	latitude	S	1
units	UDUNITS unit name	degrees_north	S	1
_Fillvalue	Default value range for unused elements	-999	f32	1
pixel_corner_longitude_1	Longitude at pixel corner 1	[-180, 180]	f32	rows columns
standard_name	CF standard name	longitude	S	1
units	UDUNITS unit name	degrees_east	S	1
_Fillvalue	Default value range for unused elements	-999	f32	1
pixel_corner_latitude_corner_2	Latitude at pixel corner 2	[-90, 90]	f32	rows columns

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Element name	Description	Range or value	T	D
standard_name	CF standard name	latitude	S	1
units	UDUNITS unit name	degrees_north	S	1
_Fillvalue	Default value range for unused elements	-999	f32	1
pixel_corner_longitude_2	Longitude at pixel corner 2	[-180, 180]	f32	rows columns
standard_name	CF standard name	longitude	S	1
units	UDUNITS unit name	degrees_east	S	1
_Fillvalue	Default value range for unused elements	-999	f32	1
pixel_corner_latitude_corner_3	Latitude at pixel corner 3	[-90, 90]	f32	rows columns
standard_name	CF standard name	latitude	S	1
units	UDUNITS unit name	degrees_north	S	1
_Fillvalue	Default value range for unused elements	-999	f32	1
pixel_corner_longitude_3	Longitude at pixel corner 3	[-180, 180]	f32	rows columns
standard_name	CF standard name	longitude	S	1
units	UDUNITS unit name	degrees_east	S	1
_Fillvalue	Default value range for unused elements	-999	f32	1
pixel_corner_latitude_corner_4	Latitude at pixel corner 4	[-90, 90]	f32	rows columns
standard_name	CF standard name	latitude	S	1
units	UDUNITS unit name	degrees_north	S	1
_Fillvalue	Default value range for unused elements	-999	f32	1
pixel_corner_longitude_4	Longitude at pixel corner 4	[-180, 180]	f32	rows columns
standard_name	CF standard name	longitude	S	1
units	UDUNITS unit name	degrees_east	S	1
_Fillvalue	Default value range for unused elements	-999	f32	1
sun_zenith_nadir	Nadir solar zenith angle at pixel center	[0, 90]	u16	rows columns
standard_name	CF standard name	solar_zenith_angle	S	1
units	UDUNITS unit name	degrees	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.003	f32	1
coordinates		latitude, longitude	S	1
sun_zenith_oblique	Oblique solar zenith angle at pixel center	[0, 90]	u16	rows columns
standard_name	CF standard name	solar_zenith_angle	S	1
units	UDUNITS unit name	degrees	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.003	f32	1

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Element name	Description	Range or value	T	D
coordinates		latitude, longitude	S	1
satellite_zenith_nadir	Nadir satellite zenith angle at pixel center	[0, 90]	u16	rows columns
standard_name	CF standard name	zenith_angle	S	1
units	UDUNITS unit name	degrees	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.003	f32	1
coordinates		latitude, longitude	S	1
satellite_zenith_oblique	Oblique satellite zenith angle at pixel center	[0, 90]	u16	rows columns
standard_name	CF standard name	zenith_angle	S	1
units	UDUNITS unit name	degrees	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.003	f32	1
coordinates		latitude, longitude	S	1
relative_azimuth_nadir	Nadir relative azimuth angle at pixel center	[0, 180]	u16	rows columns
units	UDUNITS unit name	degrees	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.003	f32	1
coordinates		latitude, longitude	S	1
relative_azimuth_oblique	Oblique relative azimuth angle at pixel center	[0, 180]	u16	rows columns
units	UDUNITS unit name	degrees	S	1
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.003	f32	1
coordinates		latitude, longitude	S	1
Cloud_fraction_nadir	Cloud fraction of the AOD super-pixel in nadir view	[0,1]	u16	rows columns
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
coordinates		latitude, longitude	S	1
Cloud_fraction_oblique	Cloud fraction of the AOD super-pixel in oblique view	[0,1]	u16	rows columns
_Fillvalue	Default value range for unused elements	65535	u16	1
scale_factor	raw data must be multiplied by this factor after reading	0.0001	f32	1
coordinates		latitude, longitude	S	1
aod_quality_flags	Global aerosol retrieval quality flags	see Error! Reference source not found.	u16	rows columns
flag_masks	flags mask values	see Error! Reference source not found.	S	1
flag_meaning	meaning of flags mask values	see Error! Reference source not found.	S	
coordinates		latitude, longitude	S	1

**EUMETSAT - Copernicus Sentinel-3 SLSTR L2 NRT AOD Product Data
Format Specification**

Element name	Description	Range or value	T	D
SLN_L1b_quality_flags	Original L1b quality flags associated with SLSTR Nadir view	see Error! Reference source not found.	u32	rows columns
flag_masks	flags mask values	see Error! Reference source not found.	S	1
flag_meaning	meaning of flags mask values	see Error! Reference source not found.	S	
coordinates		latitude, longitude	S	1
SL0_L1b_quality_flags	Original L1b quality flags associated with SLSTR Oblique view	see Table 9	u32	rows columns
flag_masks	flags mask values	see Table 9	S	1
flag_meaning	meaning of flags mask values	see Table 9	S	
coordinates		latitude, longitude	S	1

3 XML SCHEMA

The xml schemas used to generate the product manifest are provided as separate files [AD-4].

4 NRT S3 SLSTR L2 AOD PRODUCT SIZE

Table 4 lists the size computation per product file produced over a 5-min granule. A file compression (ratio of 4) is applied on NRT_AOD.nc.

The overall product size over 1 day (24h) is about 610 Mbytes.

Table 4: NRT SLSTR L2 AOD product size per 5-min granule

Element name	Description	Size in Mbytes
xfdumanifest.xml	Sentinel-SAFE product manifest	~0.6
NRT_AOD.nc	9.5 km L2 NRT Aerosol & surface product	~1.6
Total		~2.2