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DOCUMENT

Sentinel-5 Precursor - Pre-Operations Sample Data Set Description, processors version 2.3

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CHANGE RECORD

Issue 0		Revision 1	
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1 SAMPLE DATA SET DESCRIPTION

An update of the Copernicus Sentinel-5 Precursor (S5P) operation system is planned to take place by end-2021, which will impact the following L2 products:

- L2__NO2__
- L2__AER_AI
- L2__AER_LH
- L2__CH4__
- L2__O3__PR (new product to be released)

Updates to algorithms and/or formats will be implemented with the updated processor versions.

1.1 L2 Processor NLL2 V2.3.0, changes with respect to NLL2 V2.2.0 (operational version)

The main impact on the data products of the processor upgrade is:

- O₃ Profile (L2__O3__PR): new product to be released, see Product User Manual (PUM) for file format
- CH₄ (L2__CH4__): Retrieval of methane data over ocean sun glint areas
- Changes in format (see section 1.3)

Bugfixes:

- Absorbing Aerosol Index (L2__AER_AI): correction of the calculated precision of the AAI values.
- Aerosol Layer Height (L2__AER_LH): the definition of the cloud fraction calculated from the S-NPP VIIRS classifications has been updated. The number of VIIRS pixels that are divided by the total number of VIIRS pixels are the 'confidently cloudy' + 'probably cloudy'. In the previous processor only the 'confidently cloudy' pixels were used.
- NO₂ (L2__NO2__):
 - The window of the wavelength is now correct: [405, 465] nm
 - The content of some variables was not correct. This has been fixed. The variables are:

```
wavelength_calibration_offset, wavelength_calibration_offset_precision,
wavelength_calibration_chi_square,
wavelength_calibration_irradiance_offset,
wavelength_calibration_irradiance_offset_precision,
wavelength_calibration_irradiance_chi_square,
polynomial_coefficients, polynomial_coefficients_precision
```

1.2 Products availability

Sample products are available in this link: https://s5phub.copernicus.eu/sample_dataset/

For any problems accessing the data, users are requested to contact:

eosupport@copernicus.esa.int

1.3 Data format changes

1.3.1 NO2 (L2__NO2__)

New fields added

/PRODUCT/SUPPORT_DATA/DETAILED_RESULTS/O22CLD/
o22cld_wavelength_calibration_irradiance_offset_precision

Removed fields

/PRODUCT/SUPPORT_DATA/DETAILED_RESULTS/O22CLD/o22cld_cloud_fraction_crb_not
_clipped

/PRODUCT/SUPPORT_DATA/DETAILED_RESULTS/O22CLD/o22cld_cloud_pressure_crb_not
_clipped

Renamed fields

PRODUCT/SUPPORT_DATA/DETAILED_RESULTS/wavelength_calibration_irradiance_offset
attribute 'long_name' → text changed (from 'wavelength offset' to '**irradiance** wavelength offset')

/PRODUCT/SUPPORT_DATA/DETAILED_RESULTS/wavelength_calibration_irradiance_offset
attribute 'ancillary_variables' → text changed (from 'wavelength_calibration_offset_precision' to
'wavelength_calibration_**irradiance**_offset_precision')

1.3.2 AAI (L2__AER_AI)

Renamed fields

/PRODUCT/SUPPORT_DATA/DETAILED_RESULTS/wavelength_calibration_irradiance_offset
attribute 'long_name' → text changed (from 'wavelength offset' to '**irradiance** wavelength offset')

/PRODUCT/SUPPORT_DATA/DETAILED_RESULTS/wavelength_calibration_irradiance_offset
attribute 'ancillary_variables' → text changed (from 'wavelength_calibration_offset_precision' to
'wavelength_calibration_**irradiance**_offset_precision')

1.3.3 ALH (L2__AER_LH)

Renamed fields

/PRODUCT/SUPPORT_DATA/DETAILED_RESULTS/wavelength_calibration_irradiance_offset
attribute 'long_name' → text changed (from 'wavelength offset' to '**irradiance** wavelength offset')

/PRODUCT/SUPPORT_DATA/DETAILED_RESULTS/wavelength_calibration_irradiance_offset
attribute 'ancillary_variables' → text changed (from 'wavelength_calibration_offset_precision' to
'wavelength_calibration_**irradiance**_offset_precision')

1.3.4 CH₄ (L2__CH4__)

New fields added

/PRODUCT/SUPPORT_DATA/DETAILED_RESULTS/maximum_reflectance_NIR
/PRODUCT/SUPPORT_DATA/DETAILED_RESULTS/maximum_reflectance_SWIR

Renamed fields

/PRODUCT/methane_mixing_ratio_bias_corrected attribute 'long_name' → text changed (from 'bias corrected column-averaged dry-air mole fraction of methane' to 'corrected column-averaged dry-air mole fraction of methane')

END OF DOCUMENT