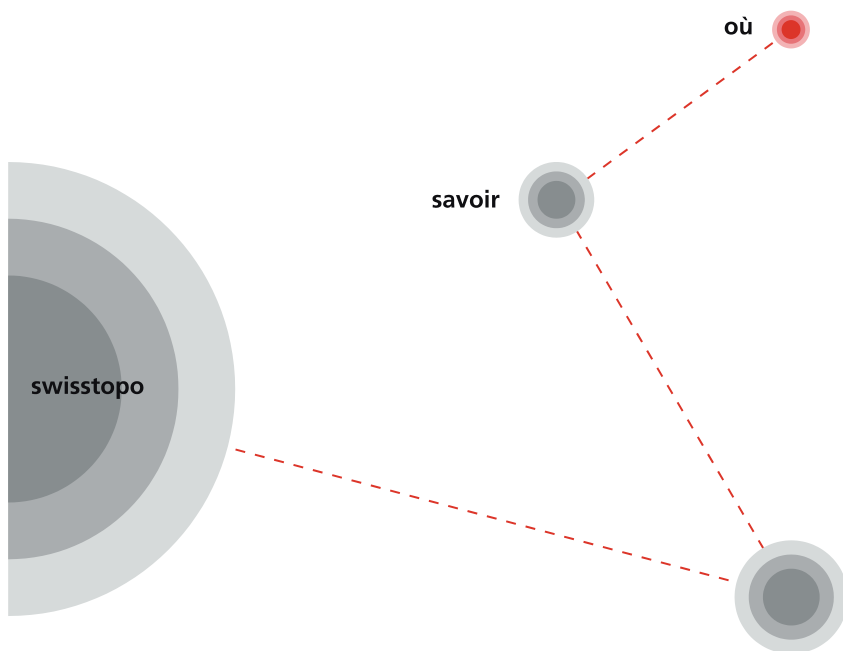


swissEO S2-SR

Additional content information



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Bundesamt für Landestopografie swisstopo
Office fédéral de topographie swisstopo
Ufficio federale di topografia swisstopo
Uffizi federal da topografia swisstopo

www.swisstopo.ch

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1 Introduction

This document is a list of all the elements available in the swissEO S2-SR product. This product presents optical satellite data (Sentinel-2) used to show the reflectances of the land surface for the four channels Red, Green, Blue and near Infrared in a spatial resolution of 10 metres.

For each asset, an explanatory table is included with the main information about the different features of the asset.

References to data samples are also included.

Further information are available on the product page: <https://www.swisstopo.admin.ch/en/satelliteimage-swisseo-s2-sr>

2 BANDS-10M

True color orthophoto of the RGBN Copernicus bands (B4, B3, B2, B8) with a 10m resolution.

Detailed information:

Name	Description	Min	Max	Resolution	Units	Wavelength	Scale	NoDataValue	Datatype
B2	Blue			10 meters	W·sr-1·m-2·µm-1	496.6nm (S2A) / 492.1nm (S2B)	0.001	9999	uint16
B3	Green			10 meters	W·sr-1·m-2·µm-1	560nm (S2A) / 559nm (S2B)	0.001	9999	uint16
B4	Red			10 meters	W·sr-1·m-2·µm-1	664.5nm (S2A) / 665nm (S2B)	0.001	9999	uint16
B8	NIR			10 meters	W·sr-1·m-2·µm-1	835.1nm (S2A) / 833nm (S2B)	0.001	9999	uint16

Data sample:

- [Preview](#)
- [Sample](#)

3 BANDS-20M

Red-Edge, Near Infrared and Shortwave Infrared of Copernicus bands (B5, B8A, B11) with a resolution of 20m.

Detailed information:

Name	Description	Min	Max	Resolution	Units	Wavelength	Scale	NoDataValue	Datatype
B5	Red Edge 1			20 meters	W·sr-1·m-2·µm-1	703.9nm (S2A) / 703.8nm (S2B)	0.001	9999	uint16
B8A	Red Edge 4			20 meters	W·sr-1·m-2·µm-1	864.8nm (S2A) / 864nm (S2B)	0.001	9999	uint16
B11	SWIR 1			20 meters	W·sr-1·m-2·µm-1	1613.7nm (S2A) / 1610.4nm (S2B)	0.001	9999	uint16

Data sample:

- [Sample](#)

4 CLOUDPROBABILITY-10M

This raster contains the probability of cloud cover for each pixel in the satellite image.

Detailed information:

Name	Description	Min	Max	Resolution	Scale	Units	NoDataValue	Datatype
cloudProbability	Pixel quality assessment based on the spectral distance from a (theoretical) clear reference, where 0 stands for 'clear' (not obscured) and 100 for 'not clear' (obscured). Inverted and multiplied by 100 CloudScore+ values.	0	100	10 meters	0.01	Dimensionless	255	uint8

Data sample:

- [Sample](#)

5 MASKS-10M

This raster contains masks for various features such as terrain shadows, clouds, and cloud shadows of the satellite image.

Detailed information:

Name	Description	Min	Max	Resolution	Classes	Units	Scale	NoDataValue	Datatype
terrainShadowMask	Incident angle of light (0-90°) calculated from azimuth and zenith of the sun. Additional masking (100) for all shadowed pixels based on swiss-SURFACE3D for +-5min around the recording time.	0	100	10 meters	Value: 0-90 Description: Angle of light incidence Value: 100 Description: Shaded area	degree		255	int8
cloudAnd-CloudShadowMask	Clouds and cloud shadows based on CloudScore+	0	1	10 meters	Value:0 Description: No shadow Value:1 Description: Clouds and cloud shadows	Dimensionless		255	int8
reg_confidence	Confidence interval co-registration, empty	0	0	10 meters	0	Dimensionless		255	int8

Data sample:

- [Sample](#)

6 MEATADA

JSON file with all necessary information for every element of the product.

Detailed information:

PRODUCT	The name of the Sentinel-2 product.
ITEM	The date and time of the scene in UTC.
ASSET	The name of the asset (the file or data set).
DATEFIRSTSCENE	The date and time of the first scene used to create the mosaic.
DATELASTSCENE	The date and time of the last scene used to create the mosaic.
NUMBEROFSCENES	The number of scenes used to create the mosaic.
DATEITEMGENERATION	The date and time the product was generated.
PROCESSORHASHLINK	A link to the commit in the GitHub repository of the processor used.
PROCESSORRELEASEVERSION	The version of the code used.
GEOCATID	A unique ID for the product.
POSTPROCESSING_STATE	The status of the postprocessing workflow (COMPLETED means finished).
POSTPROCESSING_DESCRIPTION	A description of the postprocessing workflow.
POSTPROCESSING_*	Various fields containing information about the post-processing (priority, timestamp, task type, output file location, process ID, etc.).
SOURCE_COLLECTION	The name of the source collection in Google Earth Engine (GEE).
SOURCE_COLLECTION_PROPERTIES	Properties of the source collection, including the spatial footprint in the form of a polygon.
date	The date of the scene.
SPACECRAFT_NAME	The name of the Sentinel-2 satellite ('Sentinel-2A').
DATA_SOURCE	The data source.
cloud_detection_algorithm	The algorithm used for cloud detection.
MEAN_SOLAR_AZIMUTH_ANGLE	The mean sun azimuth angle.
MEAN_SOLAR_ZENITH_ANGLE	The mean sun zenith angle.
percent_data	The percentage of valid data in the image.
scene_count	The number of scenes used to create the mosaic.
TERRAIN_SHADOW	The name of the asset containing the terrain shadow mask.
pixel_size_meter	The pixel size in metres.
SWISSTOPO_PROCESSOR	A link to the commit in the GitHub repository of the Swisstopo processor.
system:time_end	The end time of the scene (as a Unix timestamp in milliseconds).
percent_masked	The percentage of masked pixels in the image.
index_list	A list of the indices of the scenes used to create the mosaic.
system:time_start	The start time of the scene (as a Unix timestamp in milliseconds).
SWISSTOPO_RELEASE_VERSION	The release version of the Swisstopo processor.
PROCESSING_BASELINE	The Sentinel-2 baseline of the processing procedure.
SENSING_ORBIT_NUMBER	The satellite orbit number.
COREGISTRATION	The name of the asset used for co-registration.
system:asset_size	The size of the asset in bytes.
cloud_mask_threshold	The threshold used for the cloud mask.
system:index	The index of the asset.
GEE_VERSION	The version of Google Earth Engine (GEE) that was used.

Data sample:

- [Sample](#)

7 REGISTRATION-10M

This raster contains registration information for the satellite data, including displacement in the x and y directions.

Detailed information:

Name	Description	Min	Max	Resolution	Units	Scale	NoDataValue	Datatype
reg_dx	translation value in X direction			10 meters	1cm	0.001	9999	int16
reg_dy	translation value in Y direction			10 meters	1cm	0.001	9999	int16

Data sample:

- [Sample](#)