

User Manual- Sentinel-1 SLC downloader (.SAFE and .zip + orbit files)

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Once the downloader is launched, an interface will appear as shown in the figure below. The user starts at Step 1 (ROI), which is indicated in the top-left section.

Sentinel-1 downloader for TimeSeries InSAR Analysis ...

The downloader can either get .SAFE or .zip files of S1 data.

This downloader is developed by Alireza Taheri Dehkordi (Faculty of Engineering(LTH), Lund University, Sweden).

Step 1 (ROI) Step 2 (S1 filtering) Step 3 (Download)  Three main steps for downloading

Draw ROI (based on which S1 data will be filtered)



The user must draw the ROI (Region of Interest) using the drawing tools shown below, and then export the ROI as a GeoJSON file.

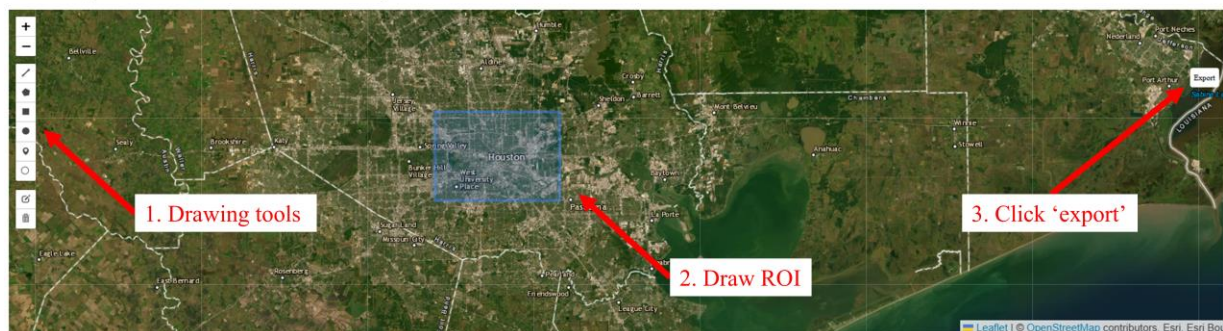
Sentinel-1 downloader for TimeSeries InSAR Analysis ...

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Step 1 (ROI) Step 2 (S1 filtering) Step 3 (Download)  4. Click 'Step 2 (S1 filtering)'

Draw ROI (based on which S1 data will be filtered)



Then, the user proceeds to Step 2. In this step, they can upload the GeoJSON file exported in Step 1, or alternatively, they can directly upload their own file without using the drawing tools in Step 1. If the uploaded GeoJSON file is in a valid format, the user can define a time range, choose between ascending or descending flight modes, and select the satellite platform (S1A or S1B).

Sentinel-1 downloader for TimeSeries InSAR Analysis

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Step 1 (ROI) Step 2 (S1 Filtering) Step 3 (Download)

Upload ROI & Select Sentinel-1 Parameters

Upload a GeoJSON file containing a Polygon

Drag and drop file here
Limit: 200MB per file • GEOJSON, JSON

data (3).geojson 239.0B

Valid polygon geometry extracted.

Start Date: 2025/07/15 End Date: 2025/07/15

Flight Direction: Asc

Satellite Platform: S1A

Search Available Sentinel-1 Images

1. Import geojson file

2. Checking the validity of the uploaded file.

3. Different filtering parameters

4. Start searching

Then, by pressing the search button, a preliminary list of images that intersect with the ROI and meet the selected criteria is displayed. Since multiple scenes may cover the same ROI, a list of unique (path, frame) number combinations is presented for selection. The user should choose the combination that offers the best coverage of their region of interest. **The optimal (path, frame) pair can be easily identified using the ASF Vertex API (<https://search.asf.alaska.edu/#/>).** After selection, the number of matching scenes is shown to the user and these can be downloaded in Step 3.

Valid polygon geometry extracted.

Start Date: 2016/01/01 End Date: 2025/07/15


Flight Direction: Asc

Satellite Platform: S1A

Search Available Sentinel-1 Images

Found 756 Sentinel-1 SLC scenes.

1. Total number of images intersecting with ROI

 Select a Path/Frame Pair

Choose (Path, Frame)

Path: 34, Frame: 89

Filter Scenes by Selected Pair

3. Filter by selected pair.

8 scene(s) found for Path 34 / Frame 92

Matching Sentinel-1 Scenes

- S1A_S6_SLC_1SDH_20160915T002626_20160915T002650_013056_014B28_D2E9
- S1A_S6_SLC_1SDH_20160903T002625_20160903T002649_012881_01458E_C3E7
- S1A_S6_SLC_1SDH_20160822T002625_20160822T002649_012706_013FA8_DEC5
- S1A_S6_SLC_1SDH_20160810T002624_20160810T002648_012531_0139D5_F48C
- S1A_S6_SLC_1SDH_20160729T002624_20160729T002647_012356_0133FE_68AF
- S1A_S6_SLC_1SDH_20160717T002623_20160717T002647_012181_012E4C_10C9
- S1A_S6_SLC_1SDH_20160705T002622_20160705T002646_012006_01288E_E2AF
- S1A_S6_SLC_1SDH_20160611T002621_20160611T002645_011656_011D70_F9F2

4. Filtered images based on (path, frame) number.

Go to Step 3 to download selected scenes.

In Step 3, the user selects whether they want to download .SAFE files or .zip files. For .SAFE files, the user must specify the desired subswaths — iw1, iw2, iw3, or a combination — depending on the location of the ROI within the scene. After providing ASF credentials, the download process begins and the selected data is saved to the specified directory. **To obtain ASF credentials, users must register for an Earthdata Login profile.**

Step 1 (ROI) Step 2 (SL filtering) **Step 3 (Download)**

Download Sentinel-1 SLC + Orbit Files

Download Options

Select download format:

☒ .SAFE (filtered files) **1. Select between .SAFE and .zip formats.**

☐ .zip (full archive)

Download Directory

F:\s1downloader test **2. Import the directory on the local system.**

Select IW Subswaths

iw1 **iw2** **3. Select the sub swaths (only for .SAFE)**

Select Polarization

vv **3. Polarization (only for .SAFE) which vv is used in InSAR.**

ASF Credentials

ASF Username

ASF Password **4. Import ASF credentials.**

Start Download **5. Start download.**

For .zip files, only the download directory and ASF credentials are required. Note that in both cases (.SAFE and .zip), the precise orbit files for each image are also downloaded alongside the scenes.

Step 1 (ROI) Step 2 (SL filtering) **Step 3 (Download)**

Download Sentinel-1 SLC + Orbit Files

Download Options

Select download format:

☐ .SAFE (filtered files)

☒ .zip (full archive) **1. Select between .SAFE and .zip formats.**

Download Directory

/mnt/newWME/DefoEye/Test_download_S1/ **2. Import the directory on the local system.**

ASF Credentials

ASF Username

ASF Password **3. Import ASF credentials.**

Start Download **4. Start download.**