

# NFDI4Earth Pilot - World Settlement Footprint

## VI. Appendix

### A: Data List

#### A-1: WSF Suite

	<b>53,6 GB</b>
WSF2015_cog.tif	17,7 GB
WSF2019_cog.tif	19,3 GB
WSFEvolution_cog.tif	5,7 GB
WSF3D_V02_BuildingArea.tif	3,5 GB
WSF3D_V02_BuildingFraction.tif	1,3 GB
WSF3D_V02_BuildingHeight.tif	2,0 GB
WSF3D_V02_BuildingVolume.tif	4,1 GB

#### A-2: IÖR Data Suite

<b>IOER_Monitor_Data_Suite</b>	<b>18,862,511,441</b>
<b>\i_1m_footprint_data</b>	
<b>\_a_building_footprints</b>	
ids_1m_footprint_buildings_complete_COG.tif	2,626,121,823
ids_1m_footprint_buildings_nonresidential_COG.tif	2,112,539,301
<b>\_b_transportation_network_footprints</b>	
ids_1m_transportation_network_footprint_railways_COG.tif	945,653,938
ids_1m_transportation_network_footprint_roads_0_autobahn_COG.tif	854,035,196
ids_1m_transportation_network_footprint_roads_1_bundesstrasse_COG.tif	948,129,545
ids_1m_transportation_network_footprint_roads_2_staatsstrasse_COG.tif	1,088,065,324
ids_1m_transportation_network_footprint_roads_3_kreisstrasse_COG.tif	1,105,777,591
ids_1m_transportation_network_footprint_roads_4_gemeindestrasse_COG.tif	2,050,129,481
ids_1m_transportation_network_footprint_roads_5_hauptwirtschaftsweg_COG.tif	2,022,799,414
ids_1m_transportation_network_footprint_roads_6_sonstigestrasse_COG.tif	2,022,799,414
ids_1m_transportation_network_footprint_roads_7_platz_COG.tif	883,055,246
ids_1m_transportation_network_footprint_roads_8_rollbahn_COG.tif	807,940,254
<b>\ii_10m_surface_coverage</b>	
<b>\_a_building_footprints</b>	
ids_10m_surfacecover_buildings_complete_COG.tif	337,775,531
ids_10m_surfacecover_buildings_nonresidential_COG.tif	231,829,955
<b>\_b_transportation_network_footprints</b>	
ids_10m_surfacecover_railways_COG.tif	45,406,343
ids_10m_surfacecover_roads_0_autobahn_COG.tif	35,164,723
ids_10m_surfacecover_roads_1_bundesstrasse_COG.tif	45,784,509
ids_10m_surfacecover_roads_2_staatsstrasse_COG.tif	67,564,950
ids_10m_surfacecover_roads_3_kreisstrasse_COG.tif	68,963,699
ids_10m_surfacecover_roads_4_gemeindestrasse_COG.tif	234,480,668
ids_10m_surfacecover_roads_5_hauptwirtschaftsweg_COG.tif	193,426,701
ids_10m_surfacecover_roads_6_sonstigestrasse_COG.tif	39,395,652
ids_10m_surfacecover_roads_7_platz_COG.tif	33,290,404
ids_10m_surfacecover_roads_8_rollbahn_COG.tif	24,910,701
<b>\iii_100m_building_structure</b>	
ids_100m_building_height_median_m_COG.tif	8,730,930
ids_100m_building_volume_m3_COG.tif	27,821,108

### A-3: IÖR World Settlement Footprint Reference Dataset

<b>Subject</b>	World Settlement Footprint Reference dataset
<b>Specific subject area</b>	Building and transportation infrastructure footprints  Development structure data
<b>Type of data</b>	<p>Raster data</p> <p>Projection: Lambert Azimuthal Equal Area projection (INSPIRE)</p> <p>Footprint data</p> <ul style="list-style-type: none"> <li>&gt; Building: general and non-residential</li> <li>&gt; Transportation types</li> <li>* Data type: 1 bit</li> <li>* Value range: [0; 1]</li> <li>* Value unit: none</li> <li>* Ground resolution: 1m</li> </ul> <p>Surface coverage data</p> <ul style="list-style-type: none"> <li>&gt; Building coverage</li> <li>&gt; Transportation types coverage</li> <li>* Data type: 8 bit integer</li> <li>* Value range: 0.. 100</li> <li>* Value unit: %</li> <li>* Ground resolution: 10m</li> </ul> <p>Development structure data:</p> <ul style="list-style-type: none"> <li>&gt; Building median height</li> <li>* Data type: 16 bit integer</li> <li>* Value range: 0.. 560</li> <li>* Value unit: m</li> <li>* Ground resolution: 100m</li> <li>&gt; Overall building volume</li> <li>* Data type: 32 bit integer</li> <li>* Value range: 0.. 2,438,660</li> <li>* Value unit: m<sup>3</sup></li> <li>* Ground resolution: 100m</li> </ul>
<b>How the data were acquired</b>	<p>Original data sources: LoD1-DE, GA-DE, ATKIS Basic DLM have been acquired within the framework of the agreement between the IOER and the BKG (Federal Agency for Cartography and Geodesy) for annual data delivery.</p> <p>Data processing was done by Esri products ArcGIS pro and ArcGIS 10.</p>
<b>Data format</b>	Raster data: Cloud optimized GeoTIFF datasets
<b>Description of data collection</b>	Provide a brief description of the conditions that were used for data collection. Describe the factors/samples under study that were used to generate data points and inclusion/exclusion criteria (if necessary). You may also describe how the data were normalized. Max 400 characters (without spaces).

<b>Data source location</b>	Institution: Leibniz Institute of Ecological Urban and Regional Development (ROR: <a href="https://ror.org/02t26g637">https://ror.org/02t26g637</a> ) City/Town/Region: Dresden, Saxony Country: Germany Latitude and longitude for collected data: 51°09'51.23" N 10°27'14.83" E (DMS coordinates)
<b>Data accessibility</b>	All datasets will be made available within the IOER Research Data Centre. DOI will be provided  Preliminary accessibility via IOER Filr Hosting: <a href="https://filr.ioer.de/filr/public-link/file-download/ff808082857c310201864f6fc9227741/1898/-2995676550212494968/IOER_Monitor_Data_Suite.tar">https://filr.ioer.de/filr/public-link/file-download/ff808082857c310201864f6fc9227741/1898/-2995676550212494968/IOER_Monitor_Data_Suite.tar</a>  File size: 18 GB

## Appendix B: EOC Geoservice – Access to Products

WSF 2015 (v2) - [WMS/EOC Downloadservice](#)

WSF 2019 - [WMS/EOC Downloadservice](#)

WSF Evolution - [WMS/EOC Downloadservice](#)

WSF 3D - [WMS/3D-Viewer/EOC Downloadservice](#)

## Appendix C: EOC STAC - Requests

Here are listed some sample requests that give an insight about the functionalities and the content of our EOC STAC.

[EOC STAC Landing Page](#)

[Provides API-Capabilities](#)

[List of available Collections](#)

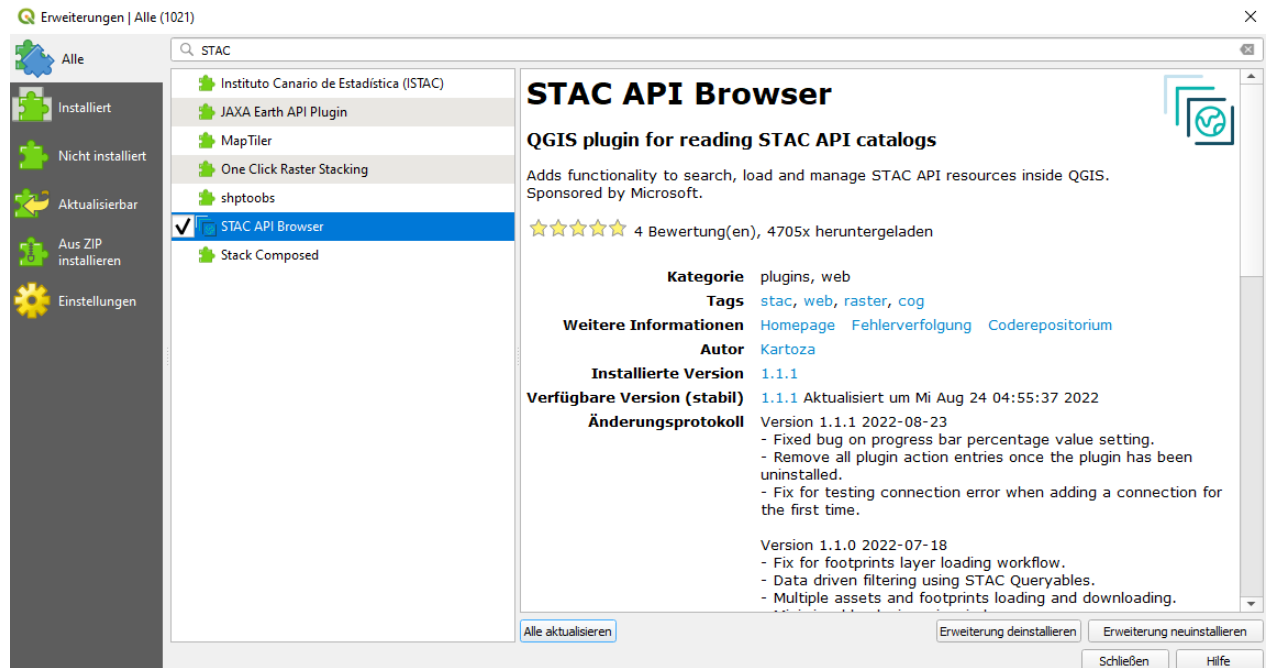
[WSF 2019 – STAC Collection View](#)

[WSF 2019 – STAC Item Search with BBox Germany](#)

[List of STAC items available in the service for Germany \(JSON\)](#)

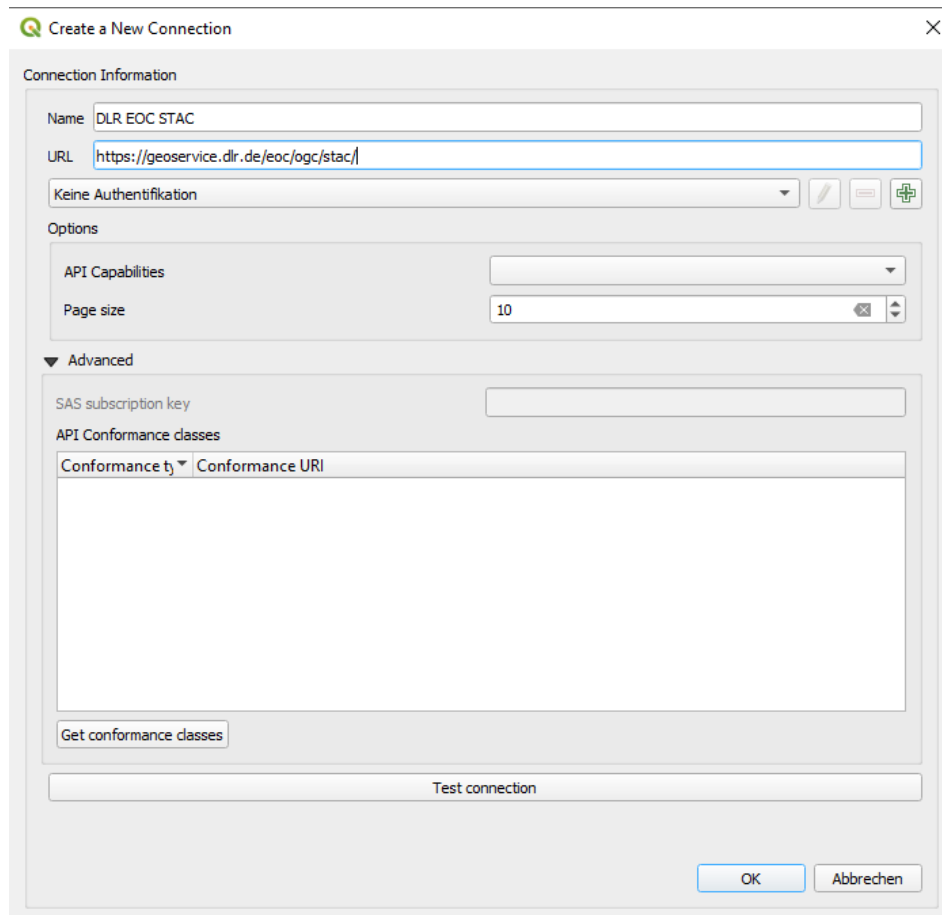
## Appendix D: How to Use EOC EO Products Service STAC with QGIS

### 1. Install STAC API Browser Extension



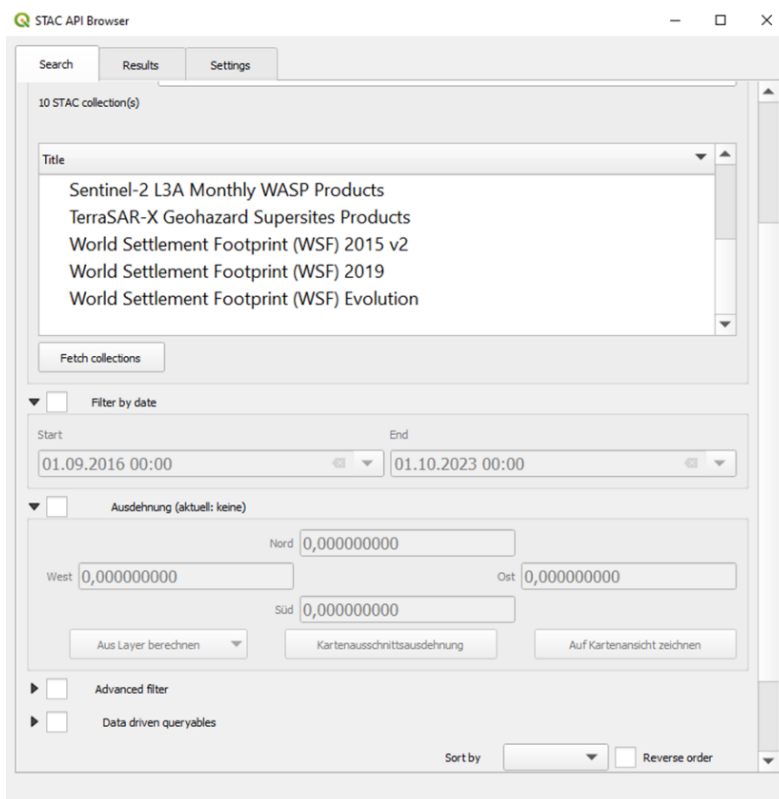
### 2. Create a New Connection by using EOC STAC URL

- Open STAC API Browser
- Click on “new”
- Type in Name (individual) and STAC URL and click “OK”



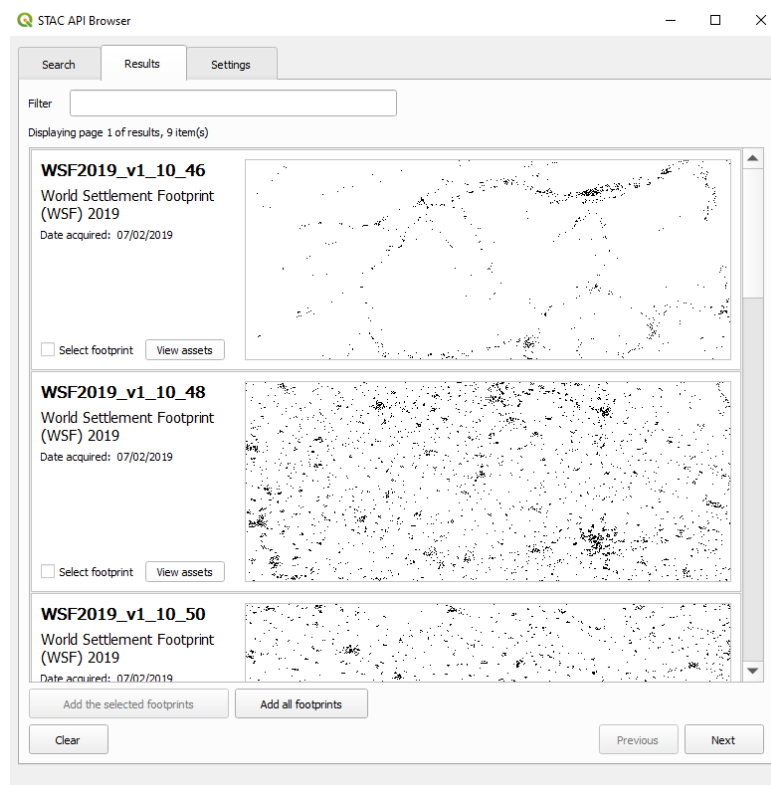
### 3. Fetch Collections

- Click “Fetch Collection”
- You can use filter (e.g. by time or geographical extent) to limit your search
- Click “Search” – You get all Items (4.)



### 4. View Results

- You can select single footprints or add all at once
- By clicking on “View assets” you list all available assets for this item



## 5. Assets – Add layer

- Click “Select to add as a layer”
- Click “Add assets as layers”

Assets ×

**Item WSF2019\_v1\_10\_46**  
3 available asset(s)

Name	Type	<input type="checkbox"/> Select to add as a layer	<input type="checkbox"/> Select to download
Data	image/tiff; application=geotiff; profile=cloud-optimized	<input type="checkbox"/> Select to add as a layer	<input type="checkbox"/> Select to download
Thumbnail	image/png	<input type="checkbox"/> Select to add as a layer	<input type="checkbox"/> Select to download
Overview	image/png	<input type="checkbox"/> Select to add as a layer	<input type="checkbox"/> Select to download

[Add assets as layers](#) [Download the assets](#)

## 6. View Dataset

Layer ⊞ ⊗

**WSF2019\_v1\_10\_46**  
Kanal 1: classification (Gray)  
0  
■ 255

