

WorldDEM™ Portal & API Solution

User Guide

Version 1.0

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1 WorldDEM Portal & API description

The WorldDEM Portal & API solution grants fast and easy access to all our WorldDEM off-the-shelf products via a portal or API. Both solutions provide global* access to WorldDEM™Neo, WorldDEM™, WorldDEM4Ortho, WorldDEM DTM_{LITE} and WorldDEM 30.

The API for WorldDEM is provided upon the receipt of order, which allows direct access to the product. The consumption can be monitored and tracked online. Even very small Areas of Interest (AOI) may be downloaded, allowing you to exactly define individual AOIs.

*On demand release request for sensitive countries

1.1 What is WorldDEM™ Neo?

WorldDEM Neo is our new Digital Surface Model (DSM), globally available with 5m pixel spacing and fresh data acquisitions (data currency from 2017-2021) with unprecedented quality and accuracy. WorldDEM Neo provides a high resolution and precise reference layer to enhance a wide range of applications.

1.2 What is WorldDEM™?

WorldDEM is a Digital Surface Model (DSM) with 12m pixel spacing and unprecedented quality, accuracy and worldwide coverage. WorldDEM provides a reliable and precise reference layer to enhance a wide range of applications.

1.3 What is WorldDEM4Ortho?

WorldDEM4Ortho is an elevation information layer optimised for the orthorectification of high-resolution (HR) and very high resolution (VHR) optical satellite data. WorldDEM4Ortho is the most consistent, homogenous and accurate elevation model for high-quality image orthorectification on a global scale.

1.4 What is WorldDEM DTM_{LITE}?

WorldDEM DTMlite is an automatically generated global digital terrain model (DTM) derived from the WorldDEM™ product.

1.5 What is WorldDEM 30?

WorldDEM 30 is a global Digital Surface Model (DSM) with 30m resolution automatically generated and derived from the WorldDEM™ product.

1.6 Characteristics

Table 1-1: WorldDEM Portal Product Characteristics

WorldDEM Portal Products

| | |
|------------------------------|--|
| WorldDEM™ Neo | A new Digital Surface Model (DSM), globally available with 5m pixel spacing and fresh data acquisitions (data currency from 2017-2021) in unprecedented quality and accuracy. WorldDEM Neo provides a high resolution and precise reference layer. |
| WorldDEM™ | A Digital Surface Model (DSM) with unprecedented quality, accuracy and worldwide coverage with 12m resolution. WorldDEM provides a reliable and precise reference layer to enhance a wide range of applications. |
| WorldDEM4Ortho | A global elevation information layer (24m posting) optimised for the orthorectification of high-resolution (HR) and very high resolution (VHR) optical satellite imagery. |
| WorldDEM DTM _{LITE} | Automatically generated global Digital Terrain Model (DTM) derived from the WorldDEM™ product in 24m resolution. |
| WorldDEM 30 | Digital Surface Model (DSM) automatically generated and derived from the WorldDEM™ product with 30m pixel spacing worldwide available. |
| Format | GeoTIFF (32 Bit Floating point) |
| Min. AOI size | 1 km ² |
| Max. AOI size per request | 1 million km ² |
| Product Specification | Please retrieve from: https://www.intelligence-airbusds.com/imagery/reference-layers/worlddem/ |

1.7 Contact

Request your WorldDEM subscription directly through [OneAtlas](#). For further information please contact our Customer Service: intelligence-customer-service-germany@airbus.com.

2 WorldDEM Portal & API: How to access?

The WorldDEM portal & API solution provides two possible ways to access and download WorldDEM data: using a web portal or via an API.

2.1 WorldDEM Portal

The web portal provides a convenient overview about your placed orders and consumptions. Ordering WorldDEM data is possible in 3 easy steps:

1. Draw or upload your AOI
2. Confirm your order
3. Download your data

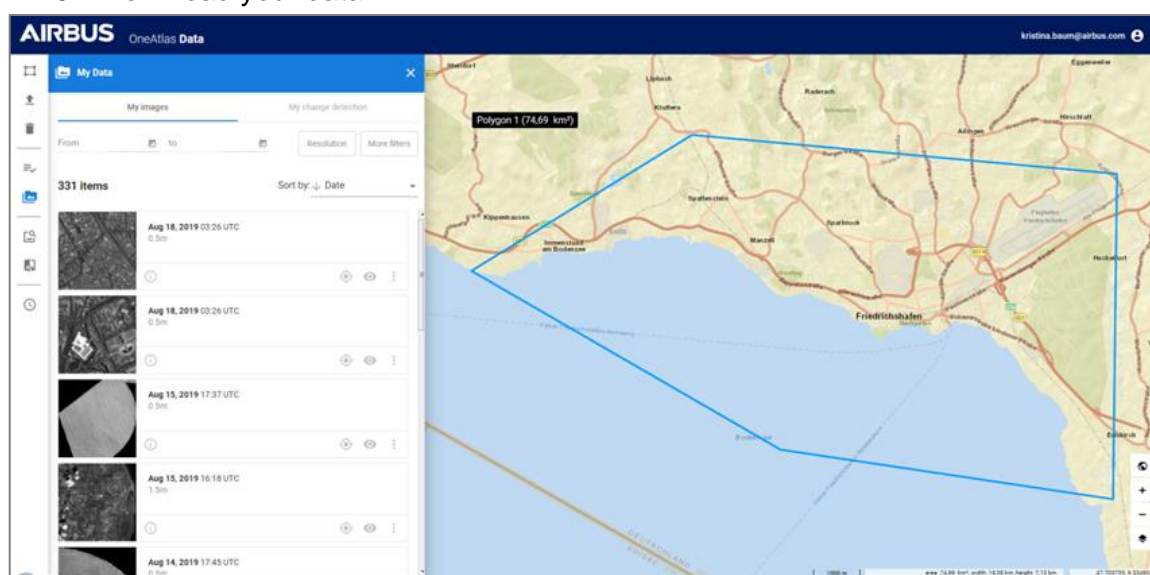


Figure 2-1: WorldDEM Portal

2.2 WorldDEM API

The API enables the download of WorldDEM data in 3 easy steps. The API is provided as HTTP REST API and is using GeoJSON.

1. Request a price (optional)
 - a. send order description with API /price/ endpoint
 - b. response contains price information about the requested data
2. Place an order
 - a. send order description with API /orders/ endpoint
 - b. send fixed price information or price limits along with the request (optional)
 - c. response contains confirmation and download link
3. Download the data

2.2.1 API-Parameters

1. Request a price (optional)

POST /price/ get the price of elevation item/download request

Request:

| | Parameter | Description | Mandatory |
|-------|----------------|--|-----------|
| Price | Kind | Describes the order format | Yes |
| | Items | Object containing one or multiple orders | Yes |
| | Items.itemType | Describes the source of the data (e.g. WorldDEM or WorldDEM4Ortho) | Yes |
| | Items.aoi | Contains the AOI the price is requested for | Yes |

Response:

| | Parameter | Description |
|-------|-----------|--|
| Price | Price | The price calculated when requesting a price |
| | areaKm2 | The area calculated when requesting a price |

2. Place an order

POST /orders/ create new order

Request:

| | Parameter | Description | Mandatory | |
|-------|----------------|--|---|----|
| Order | Kind | Describes the order format | Yes | |
| | Items | Object containing one or multiple orders | Yes | |
| | Items.itemType | Describes the source of the data | Yes | |
| | Items.aoi | Contains the AOI to be ordered | Yes | |
| | fixed price | Price | The price calculated when requesting a price | No |
| | | areaKm2 | The area calculated when requesting a price | No |
| | | minArea | The order will not be placed if the aoi is smaller | No |
| | order limits | maxArea | The order will not be placed if the aoi is bigger | No |
| | | maxPrice | The order will not be placed if the price is higher | No |

Response: The {orderId} of the request, containing the {itemId} to request the download link.

3. Download the data

Request:

GET

/orders/{orderId}/items/{itemId}/download download the specified item

Response:

GeoTIFF File: {itemId}.tiff

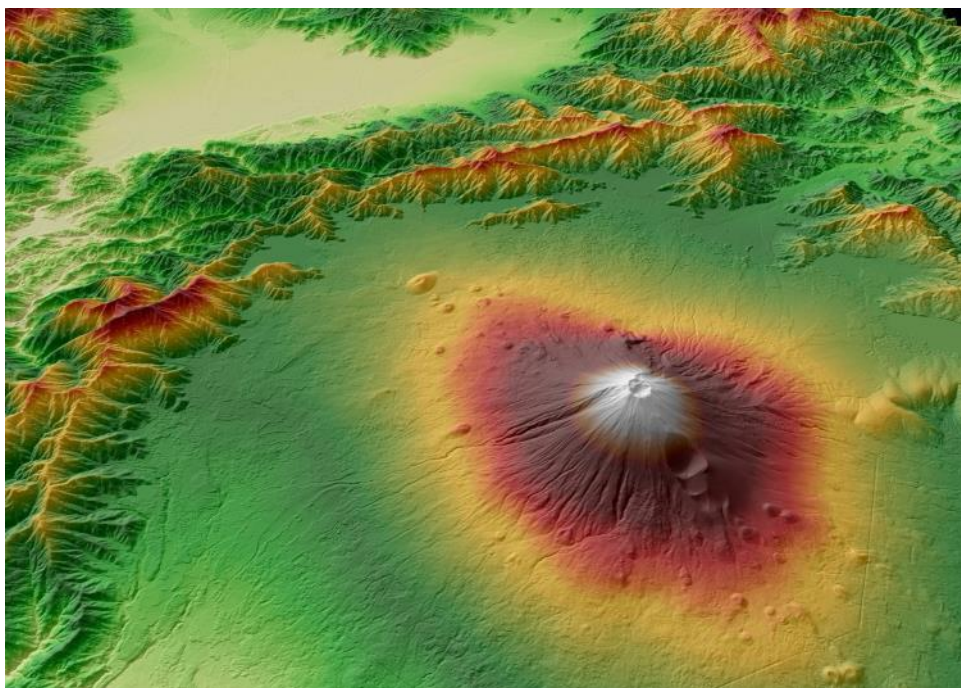


Figure 2-2 - example for visualized WorldDEM data showing Mount Fuji

2.2.2 Orders and Accounting

| Path | Description |
|--|---|
| GET accounting/balance | returns the account balance |
| GET accounting/transactions | list of all transactions |
| GET accounting/transactions/{itemId} | detailed information of one specific transaction |
| GET elevation/orders | list all orders |
| GET elevation/orders/{orderId}/items | list all items of one specific order |
| GET elevation/orders/{orderId}/items/{itemId}/download | download the data of one specific item |

2.2.3 Using the API

The URL to reach the API – Endpoints is:

<https://sarapi.intelligence-airbusds.com/v1>

According to this the endpoints are:

<https://sarapi.intelligence-airbusds.com/v1/accounting/balance>

<https://sarapi.intelligence-airbusds.com/v1/accounting/transactions>

<https://sarapi.intelligence-airbusds.com/v1/elevation/price>

<https://sarapi.intelligence-airbusds.com/v1/elevation/orders>

You can find a complete API – Definition here:

<https://docs.sarapi.intelligence-airbusds.com>

The WorldDEM Portal can be accessed on:

<https://worlddemportal.sarapi.intelligence-airbusds.com>