

# Digital Elevation Model

Digital Elevation Model API - Terrainizer (a solution to digital terrain model) is a cross browsers REST API supporting now a maximum of **2601 3D Points per request** including all the selected rectangular surface as an array of equally distanced 3D Points as you may see in the figure below. The digital elevation model or digital terrain model (mesh 3D model) is based on a selecting rectangle of a slice on Earth (it may be also on oceans, seas). As data input you need to specify the **North East Corner Latitude and Longitude** and the **South West Corner Latitude and Longitude** (as upper right corner and the lower left corner of the selecting rectangle) and also the number of dividing segments on the width of the rectangle (**npwidth**) and the number of dividing segments on the height of the rectangle (**npheight**). The number of 3D Points is calculated as  $(npwidth+1)*(npheight+1)$ . As more 3D points are, as smooth is the resulted mesh 3d model. Although this digital terrain model API is intended for software development and therefore developers, we have also here an online application that may be used to get the GLTF file of the mesh 3D model alltogether with other useful data like 3D points coordinates (x, y, z), the width and the height of the selecting rectangle, dx (horizontal distance between 3D Points) and dy (vertical distance between 3D Points). Basically for digital elevation model API you send an authorized POST request in JSON format to the digital terrain model API endpoint and you get as JSON response a representing the parametr given in the table below. **You may use it for commercial purposes for paid packages.**

Digital Elevation Model APP or API is useful for a large number of domains like: constructions, designers, architecture, 3D modelling, 3D simulation software, agriculture, oceanography etc.

For using our digital elevation model download API and/or APP (or mesh 3D model) you must create an account (free of charge, no card required), activate it from your received email, login and then start your

TRIAL package with no fees as you can see at our pricing packages. After you have tested the digital terrain model API and/or APP and if you are satisfied, you may buy a paid package. You will always see at your Admin Console page the real resources consumption in real time, your invoices, you may see/edit/delete your profile or export log consents as GDPR instructed, you may read our FAQs.

PRICING

APP TOOL

API ENDPOINT

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[API AUTHORIZATION](#)

[API REQUEST BODY](#)

[API RESPONSE BODY](#)

[API REQUEST PARAMS](#)

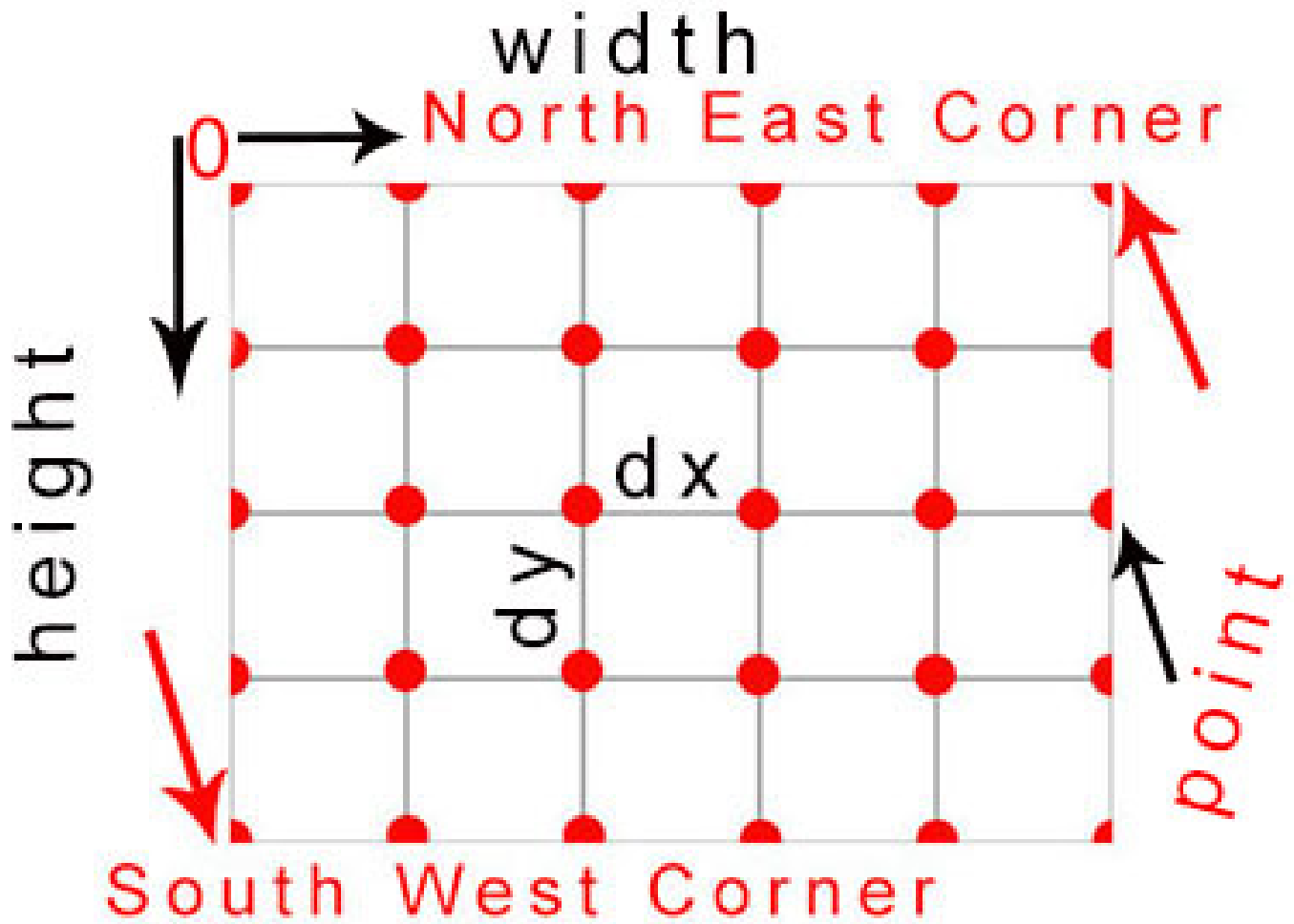
[API RESPONSE PARAMS](#)

[API ERRORS](#)

[API SAMPLE CODES](#)

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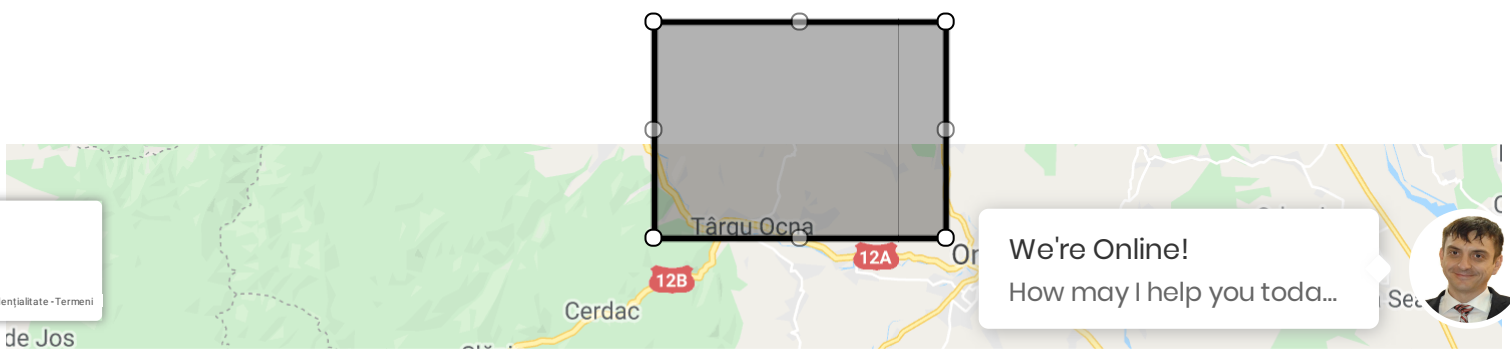
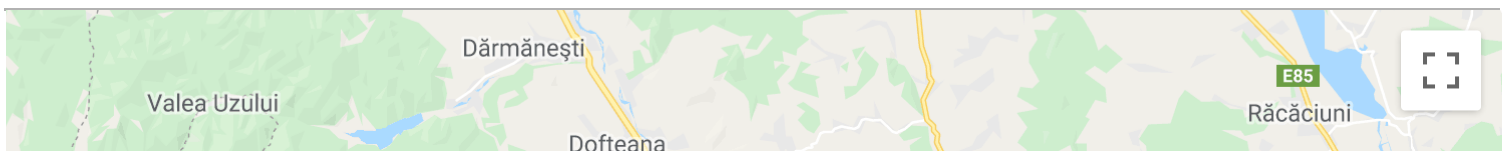


## Digital Elevation Model

10 Width Segments

10 Height Segments

3D Points: 121





Get JSON response from our API

### API Endpoint (method POST):

```
https://www.de-vis-software.ro/dem.aspx
```

### Headers:

```
Authorization: Basic //Your username:password are base64 encoded string
Content-Type: application/json
Accept: application/json
```

### JSON Request Body (change inputs here and see in real time below):

```
{
  "nelat": 46.29541134733318,
  "nelng": 26.75153749063611,
  "swlat": 46.19344076731405,
  "swlng": 26.551030654698593,
  "npwidth": 10,
  "npheight": 10
}
```

### JSON Response From API (change inputs here and see in real time below):

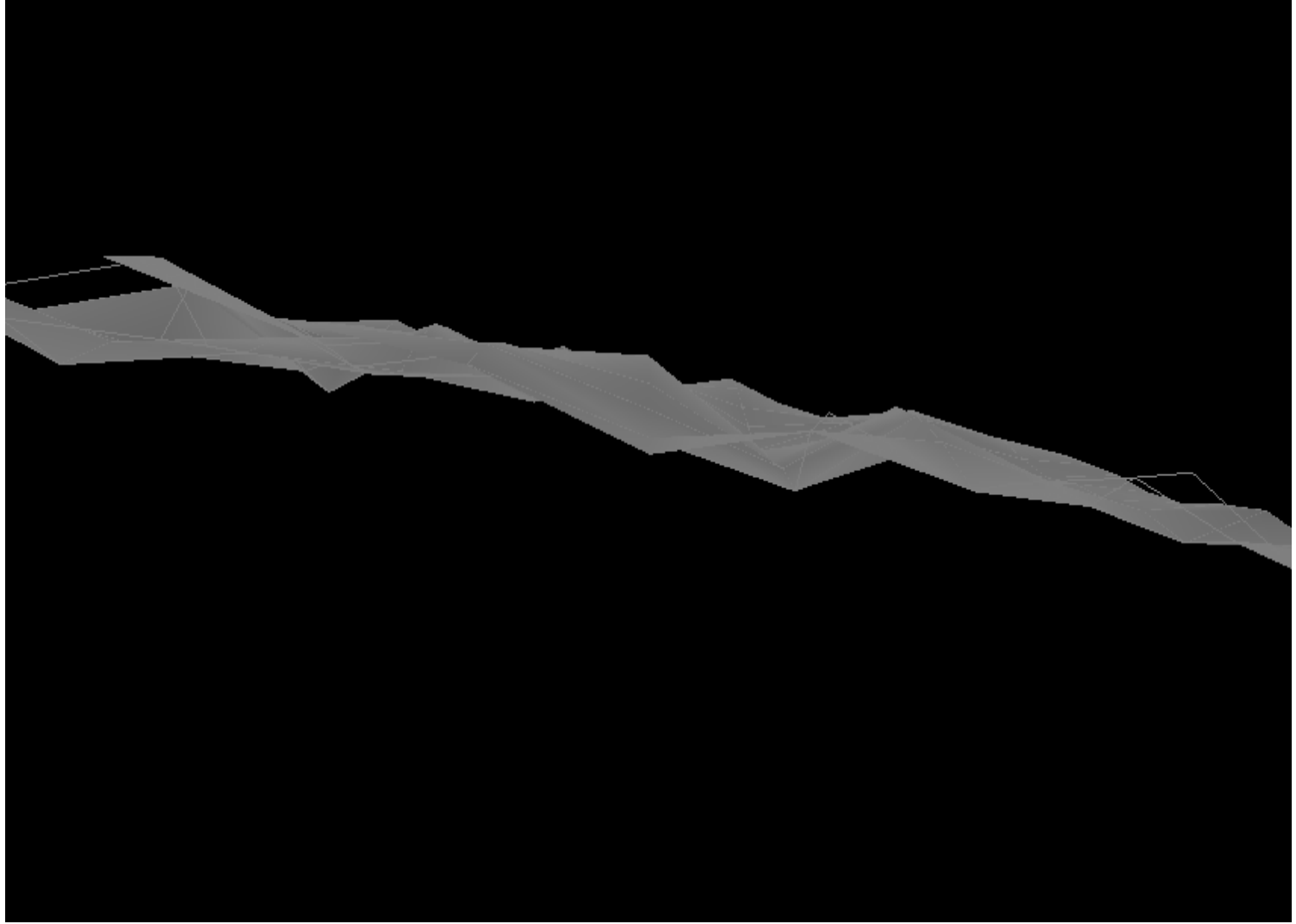
```
{
  "width": 15781.89305664219920,
  "height": 11331.99055752591690,
  "dx": 1578.19,
  "dy": 1133.20,
  "points": 121,
  "v": "'v':[{ 'x': 0.0, 'y': 0.0, 'z': 557.0 }, { 'x': 1578.19, 'y': 0.0, 'z': 531.0 }, { 'x': 3156.38, 'y': 0.0, 'z': 542.0 }, {
  "GLTFString": "'asset': { 'version': '2.0', 'generator': 'THREE.GLTFExporter' }, 'scenes': [{ 'nodes': [2] } ]", 'sce
  "GLTFFileURL": "https://ffpoazure.blob.core.windows.net/irha-irmun/irha-irmun.gltf"
}
```

### JSON Response (Example) From API in case of ERROR:

```
{
  "cd": "1001",
  "description": "The authorization header is either empty or isn't Basic"
}
```

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## Request Parameters Table

<i>Parameter Name</i>	<i>Parameter Description</i>
nelat	This is the <b>North East Latitude</b> of the selected rectangle corner (or upper right corner of the selected rectangle) <b>[float]</b> between -90 and 90 with maximum of 14 decimals. Example: <i>44.26541329138765</i>
nelng	This is the <b>North East Longitude</b> of the selected rectangle corner (or upper right corner of the selected rectangle) <b>[float]</b> between -180 and 180 with maximum of 14 decimals. Example: <i>26.21571374135217</i>
swlat	This is the <b>South West Latitude</b> of the selected rectangle corner (or lower left corner of the selected rectangle) <b>[float]</b> between -90 and 90 with maximum of 14 decimals. Example: <i>43.21571374135217</i>
swng	This is the <b>South West Longitude</b> of the selected rectangle corner (or lower left corner of the selected rectangle) <b>[float]</b> between -180 and 180 with maximum of 14 decimals. Example: <i>24.21572674135918</i>

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<b>npwidth</b>	This parameter defines the number of dividing squares of the width of the selected rectangle [ <b>integer</b> ] between 10 and 50. Example: <i>10</i>
<b>npheight</b>	This parameter defines the number of dividing squares of the height of the selected rectangle [ <b>integer</b> ] between 10 and 50. Example: <i>12</i>

## Response Parameter Table

<i>Parameter Name</i>	<i>Parameter Description</i>
<b>width</b>	This is the width [m] of the selected rectangle [ <b>float</b> ] Example: <i>15160.20</i>
<b>height</b>	This is the height [m] of the selected rectangle [ <b>float</b> ] Example: <i>11320.13</i>
<b>dx</b>	This is the width [m] of the small dividing rectangles or the horizontal distance between two 3D points [ <b>float</b> ]. Please see the figure above. Example: <i>1516.02</i>
<b>dy</b>	This is the height [m] of the small dividing rectangles or the vertical distance between two 3D points [ <b>float</b> ]. Please see the figure above. Example: <i>1132.01</i>
<b>points</b>	This is the total number of 3D points (the red dots on the figure above) [ <b>integer</b> ]. More 3D points means a more smooth surface. Maximum 2601 points per request. Example: <i>121</i>
<b>v</b>	This is a vector (one dimension array) of the x,y,z coordinates of a 3D point. Each coordinate is a [ <b>float</b> ] number. The origin is at the left upper corner of the rectangle. Please see the figure above. Example: <i>[[{12.2,10.42,11.05},{9,8,1},{3,6,2.2},{4,3,2}]]</i>
<b>GLTFString</b>	This is the string content of the GLTF file in json format
<b>GLTFFileURL</b>	This is the URL [ <b>string</b> ] of the GLTF file from which you can download the file and then you may import it in various 3D softwares as you need.

## Response Error Codes Table

<i>Parameter Name</i>	<i>Parameter Description</i>
-----------------------	------------------------------

This is the error code which may be:

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cd

- 1001
- 1002
- 1003
- 1004
- 1005
- 1006
- 1007
- 1008
- 1009
- 1010
- 1011
- 1012
- 1013
- 1014
- 1015
- 1016
- 1017
- 2001
- 2002

## description

This is the description of the error code which may be:

- 1001 - The authorization header is either empty or isn't Basic.
- 1002 - Daily requests number exceeded in TRIAL mode!
- 1003 - Trial expired!
- 1004 - 3D Points number exceeded!
- 1005 - Package expired!
- 1006 - No invoice!
- 1007 - Reader is NULL for TRIAL!
- 1008 - Cannot Read if TRIAL exists!
- 1009 - Error connecting to database looking for TRIAL! (and a detailed description message of the encountered error)
- 1010 - Reader is NULL for Invoice!
- 1011 - Cannot Read if Invoice exists!
- 1012 - Error connecting to database! (and a detailed description message of the encountered error)
- 1013 - Number of 3D Points too low or exceeded! Minimum 11 x 11 (121) and Maximum 51 x 51 (2601) points per request are allowed.
- 1014 - Latitudes are float values with range between -90 and 90 and Longitudes are float values with range between -180 and 180.
- 1015 - Invalid request data! (and a detailed description message about the error)

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- 1016 - Cannot create and save the GLTF file! (and a detailed message about the error)
- 1017 - Cannot initialize BLOB permissions for saving GLTF file! (and a detailed message about the error)
- 2001 - Invalid request data after passing to the API (and a detailed description message of the encountered error)
- 2002 - Cannot measure elevations of 3D Points! (and a detailed description message of the encountered error)

## Source Code Examples for Using Our Digital Elevation Model API

VB.NET	VBA	C#	PHP	JAVA	Android	iOS	Python
Ruby	Node.js	Copy To Clipboard					

```
Imports System.IO
Imports System.Net
Imports System.Web.Script.Serialization

Public Class digital_elevation_model_api
    Inherits System.Web.UI.Page
    Public Structure RequestFields
        Dim nelat As Decimal
        Dim nelng As Decimal
        Dim swlat As Decimal
        Dim swlng As Decimal
        Dim npwidth As Integer
        Dim npheight As Integer
    End Structure

    Public Structure ResponseFields
        Dim width As Decimal
        Dim height As Decimal
        Dim dx As Decimal
        Dim dy As Decimal
        Dim points As Integer
        Dim v As String
        Dim GLTFString As String
        Dim GLTFFileURL As String
    End Structure

    Public Structure ErrorFields
        Dim cd As String
        Dim description As String
    End Structure

    Protected Sub SendRequest()
        Dim Client As WebClient = New WebClient()
        Dim credentials As String = Convert.ToBase64String(Encoding.ASCII.GetBytes("your_username:your_password"))
        Client.Headers(HttpRequestHeader.Authorization) = String.Format("Basic {0}", credentials)
        Client.Headers(HttpRequestHeader.Accept) = "application/json"
        Client.Headers(HttpRequestHeader.ContentType) = "application/json"
        Client.BaseAddress = "https://www.de-vis-software.ro/dem.aspx"
        Dim j As RequestFields = New RequestFields()
        j.nelat=46.29541134733318
        j.nelng=26.75153749063611
    End Sub
End Class
```

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```
j.swlat=46.19344076731405  
j.swlng=26.551030654698593  
j.npwidth=10  
j.npheight=10
```

Try

```
Dim js As String = (New JavaScriptSerializer()).Serialize(j)  
Dim reqString As Byte() = Encoding.[Default].GetBytes(js)  
Dim url As Uri = New Uri(Client.BaseAddress)  
Dim resByte As Byte() = Client.UploadData(url, "post", reqString)  
'The resString bel  
Dim resString As String = Encoding.[Default].GetString(resByte)  
If Instr(resString, "GLTFString") > 0 Then  
'In case we got it right without errors  
Dim r as ResponseField = New ResponseField()  
Dim j1 As JavaScriptSerializer = New JavaScriptSerializer()  
'Below we find in r object, the values of its properties may be  
'used in further calculations.  
r = j1.Deserialize(Of ResponseField)(resString)  
Else 'So in case of error occurrence  
Dim e as ErrorFields = New ErrorFields()  
Dim j2 As JavaScriptSerializer = New JavaScriptSerializer()  
'Below we find in e.cd (error code) and e.description (error description)  
e = j1.Deserialize(Of ErrorFields)(resString)  
End If  
Client.Dispose()  
Catch exception As System.Exception  
Dim ex As System.Exception = exception  
Console.WriteLine("ERROR: " & ex.Message)  
End Try  
End Sub  
End Class
```

## Digital Elevation Model API Video Presentation

Digital Elevation Model API Problem is now solved by our digital terrain model or mesh 3D model Software - Terrainizer - in the video presentation below. Our digital elevation model download is a very useful tool for any kind of activity that implies generation of a 3D mesh from any point on Earth. You can use it as a standalone terrainizer app or, as a developer, you can access it from your own app or apps.

### Digital Elevation Model



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# Pricing Packages

Please choose one of the below pricing packages for start using our Digital Elevation Model API and online APP!

## *Start TRIAL* *No catches*

- 7 days TRIAL
- Use our cloud REST API and online APP
- **Maximum 121 3D Points(\*) per each request**
- **Maximum 50 requests per DAY in trial period**
- **You do NOT own the commercial copyright in trial period.**
- Get GLTF file which may be imported in your 3D software
- Get also the JSON string of content of GLTF file
- Get x,y,z coordinates for each 3D point of your 3D mesh
- Get width [m] and height [m] of the rectangular slice
- Get horizontal distance dx [m] between 3D points and vertical distance dy [m] between 3D points
- Administration console
- Support through online chat and/or tickets
- **We do NOT allow spam accounts for TRIAL**

Try it Now!

## *Monthly TIER* *Popular*

- 90 USD per month
- Use our cloud REST API and online APP
- **Maximum 2601 3D Points(\*) per each request**
- **Maximum 50 requests per MINUTE**
- **You own the commercial copyright with NO additional fee.**
- **Maximum 1.000.000 3D points per MONTH (same requested 3D points will be counted also)**
- Get GLTF file which may be imported in your 3D software
- Get also the JSON string of content of GLTF file
- Get x,y,z coordinates for each 3D point of your 3D mesh
- Get width [m] and height [m] of the rectangular slice

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- Get horizontal distance dx [m] between 3D points and vertical distance dy [m] between 3D points
- Administration console
- Support through online chat and/or tickets

90 USD – Buy Now!

## *Yearly TIER (15% Discount)*

- 918 USD per year
- Use our cloud REST API and online APP
- **Maximum 2601 3D Points(\*) per each request**
- **Maximum 50 requests per MINUTE**
- **You own the commercial copyright with NO additional fee.**
- **Maximum 1.000.000 3D points per MONTH (same requested 3D points will be counted also)**
- Get GLTF file which may be imported in your 3D software
- Get also the JSON string of content of GLTF file
- Get x,y,z coordinates for each 3D point of your 3D mesh
- Get width [m] and height [m] of the rectangular slice
- Get horizontal distance dx [m] between 3D points and vertical distance dy [m] between 3D points
- Administration console
- Support through online chat and/or tickets

918 USD – Buy Now!

### Notes:

VAT rate may be added or not, function to your country and/or if you are a taxable person or company.

\* 3D Point – a point in space which has 3 coordinates (x, y, z). On a request it may be a minimum 11 points/width and 11 points/height meaning a total of 121 points on the selecting rectangle and a maximum of 51 points/width and 51 points/height meaning a total of 2601 points on the selecting rectangle.



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