

Welcome to the MayaArch3D 2D Geobrowser!

The MayaArch3D 2DGeobrowser was created for the documentation and analysis of archaeological sites in Central America, especially in the Maya area and Honduras. This document is going to explain how the geobrowser can be used and what functions it offers to visualize and analyze the data.

The data that can be accessed through the geobrowser is stored in our project database, called “iDAIfield”. Since it is based on Filemaker Pro software, which requires a license, the database is not accessible for everyone. The MayaArch3D WebGIS in contrast is built on open source software and serves as user interface to visualize and analyze the data stored in the database (Fig. 1).

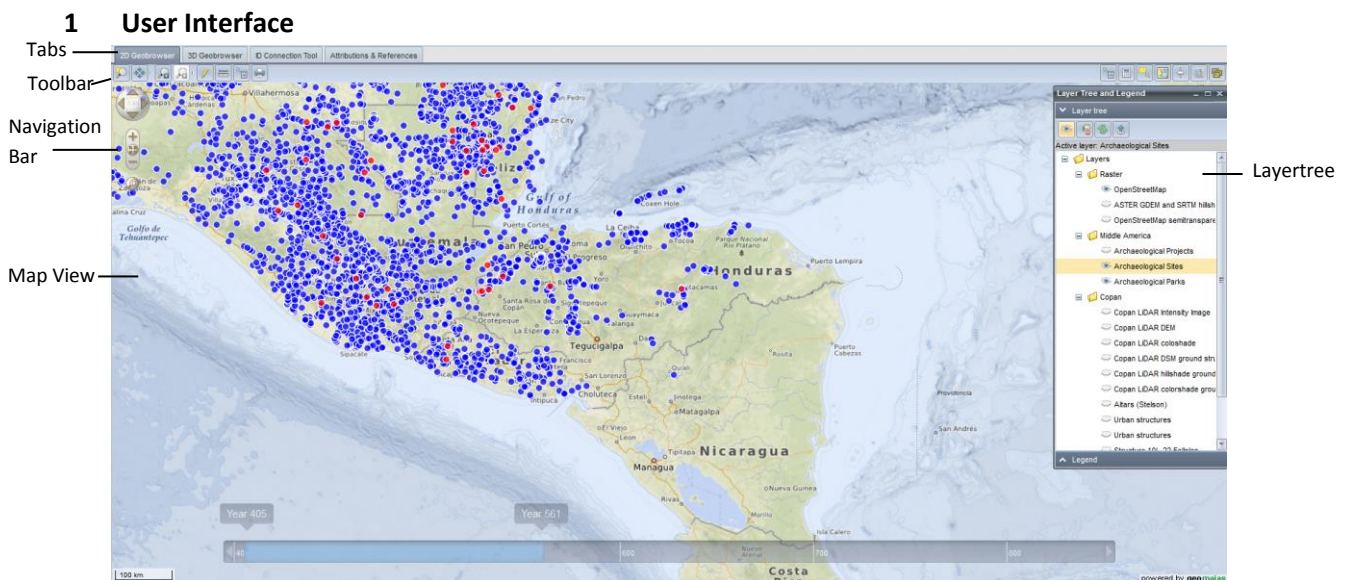


Figure 1: 2D Geobrowser User Interface

2 Navigation

The tabs on the upper bar allow switching between the 2D Geobrowser and the 3D environment for Copan. Under “Attribution and References” information on data collections and project contributions can be found. In the upper left corner a navigation bar allows moving, zooming and panning within the map view. Alternatively various tools for navigation are provided in the toolbar (Fig. 2). A “Zoom to Copan” button on the right part of the toolbar allows zooming directly to the Copan Principal Group (Fig. 3).



Figure 2: Navigation Tools

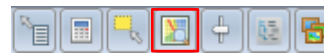


Figure 3: Zoom to Copan button

3 Layertree

To open the layertree, choose the button „Layer tree“ in the toolbar (Fig. 4). The layertree includes a selection of different layers, including background maps, layers for archaeological sites and various layers with specific information on Copan and the surrounding Copan valley. To visualize a layer, select the desired layer by clicking on it and choose the button “make the selected layer visible” (Fig. 5). The actions you perform afterwards will always apply to the currently selected layer.



Figure 4: Layertree button

3.1 Show Labels

To show object labels, select the desired layer and make it visible. Then click on the button “Show Labels” (Fig. 5).

3.2 Refresh Layers

To refresh a layer, select the requested layer and click „refresh the selected layer”.

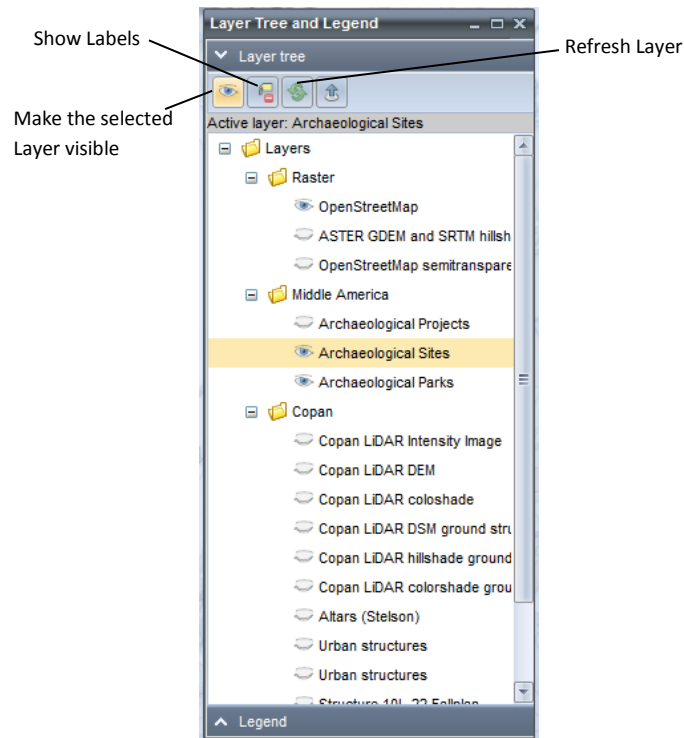


Figure 5: Layertree

4 Visualize Data

4.1 Visualize Data for One Object

To visualize the attribute data of one object, select the corresponding layer in the layertree and select the button “show feature information from iDAI.field” from the toolbar. Then click on the object you want to retrieve information from. A table with some basic information on the object appears (Fig. 6). To show further information, choose the function “show all attributes” in the upper bar of the table. All attributes stored in the database will be shown. The attributes do not show a specific order. Options to sort the attributes are indicated by clicking on the captions of the respective columns. The information is available in English and Spanish.

Attribute Name	Attribute Value
Period	Late Classic (700-900 AD)
Period	Postclassic (900-1200 AD)
Site Name	PACO 14
ort_landprovinz	Honduras - Yoro
ID	54825

Figure 6: Overview Attribute Table

4.2 Visualize Data for Several Objects

To visualize attribute data for several objects at one time, choose the “select features” button in the toolbar. Select the objects you would like to visualize data for on the map. A table with all the attribute data available for the respective objects appears (Fig. 7). To sort the attributes, click on the captions of the respective column.

4.2.1 Highlight Selected Objects

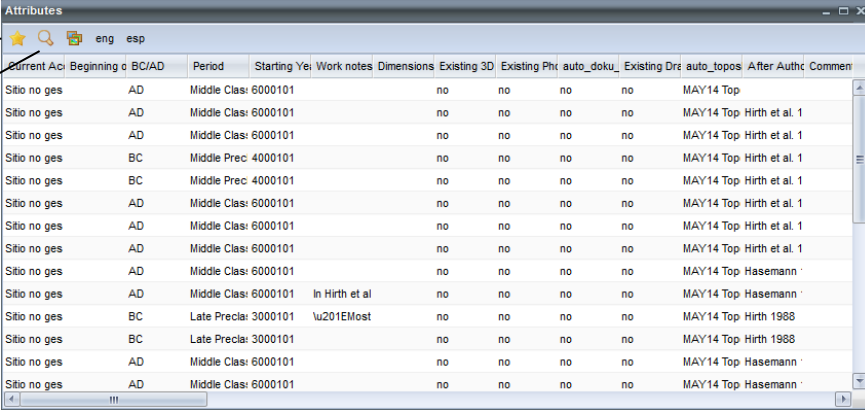
In order to highlight objects on the map, select the desired objects from the attribute table and choose the function “highlight selected features”.

4.2.2 Zoom to Object

To zoom to an object, select one object from the table and choose the function “zoom to selected feature”. This function works only, if only ONE object is selected.

Highlight selected objects

Zoom to selected object



Current Ac	Beginning q	BC/AD	Period	Starting Year	Work notes	Dimensions	Existing 3D	Existing Ph	auto_doku	Existing Dr	auto_topos	After Auth	Comments
Sitio no ges	AD		Middle Clas: 6000101				no	no	no	no		MAY14 Top	
Sitio no ges	AD		Middle Clas: 6000101				no	no	no	no		MAY14 Top	Hirth et al. 1
Sitio no ges	AD		Middle Clas: 6000101				no	no	no	no		MAY14 Top	Hirth et al. 1
Sitio no ges	BC		Middle Prec: 4000101				no	no	no	no		MAY14 Top	Hirth et al. 1
Sitio no ges	BC		Middle Prec: 4000101				no	no	no	no		MAY14 Top	Hirth et al. 1
Sitio no ges	AD		Middle Clas: 6000101				no	no	no	no		MAY14 Top	Hirth et al. 1
Sitio no ges	AD		Middle Clas: 6000101				no	no	no	no		MAY14 Top	Hirth et al. 1
Sitio no ges	AD		Middle Clas: 6000101				no	no	no	no		MAY14 Top	Hirth et al. 1
Sitio no ges	AD		Middle Clas: 6000101				no	no	no	no		MAY14 Top	Hasemann
Sitio no ges	AD		Middle Clas: 6000101		In Hirth et al		no	no	no	no		MAY14 Top	Hasemann
Sitio no ges	BC		Late Precla: 3000101		lu201EMost		no	no	no	no		MAY14 Top	Hirth 1988
Sitio no ges	BC		Late Precla: 3000101				no	no	no	no		MAY14 Top	Hirth 1988
Sitio no ges	AD		Middle Clas: 6000101				no	no	no	no		MAY14 Top	Hasemann
Sitio no ges	AD		Middle Clas: 6000101				no	no	no	no		MAY14 Top	Hasemann

Figure 7: Attribute Table

4.3 Visualize Images

The MayaArch3D project planned to build an image viewer, where photos and drawings from objects could be visualized. Due to the complexity of the system infrastructure, it turned out that loading times are very long and impractical for users. We are currently trying to find another solution for the visualization of images.

5 Analyze Data

For the analysis of data, several functions are provided. You can find them all in the toolbar.

5.1 Measure Distances

To measure distances, choose the “measure distances” function from the toolbar and choose a start and an end point for the distance you would like to measure in the map view. In the window that appears, the total distance measured and the distance of the last line are indicated. To cancel the measuring, click right and choose “Cancel measuring distances”.

5.2 Perform Queries

To create and perform queries, choose the “Query Builder Tool” from the toolbar (Fig. 8). The query builder allows you to perform temporal and spatial queries, as well as querying the attribute data stored in the database. A combination of these queries is also possible.

Due to the complexity of the technical infrastructure of the MayaArch3D system, the query functions are limited though. Not all of the attributes stored in the database can be queried, but only a predefined selection of them.

5.2.1 Temporal Queries

To perform temporal queries, choose the layer you would like to query from the layer tree by clicking on it. Type in the start date and the end date you want to query in the indicated format in the section for temporal queries in the Query Builder or select the desired period from the time bar below. You can type in either a Gregorian date or a longcount date (which is the Maya calendar format). Once you defined the desired period, click “submit query”. The result of the query appears in table format. You have the possibility to zoom to one selected object and to highlight selected objects.

5.2.2 Spatial Queries

There are two options to perform spatial queries. Features can be selected from the map by clicking on the “select features” button in the section for spatial queries within the Query Tool. The other option is to type in the IDs from the objects you want to query. The ID for every object is provided within its attribute data (“show feature info from iDAI.field”).

5.2.3 Attribute Queries

To perform attribute queries, first choose the layer you would like to query. The selection of layers you can choose from does not correspond with the layers in the geobrowser, but with the tables of the project database, where the attribute data is stored. After selecting a layer, choose the attribute you would like to query. Next, add an operator and a value. If you want to combine several attribute queries, click on the green plus sign right next to the value field. To perform the query, click the “submit query” button on the top. The result of the query appears in table format. You have the possibility to zoom to one selected object and to highlight selected objects on the map.

5.2.4 Query Examples

In the top bar of the Query Builder, you can find seven predefined queries you can perform. These queries refer to architectural elements of archaeological sites and artifacts found at sites. Data has only been collected for archaeological sites in Honduras.

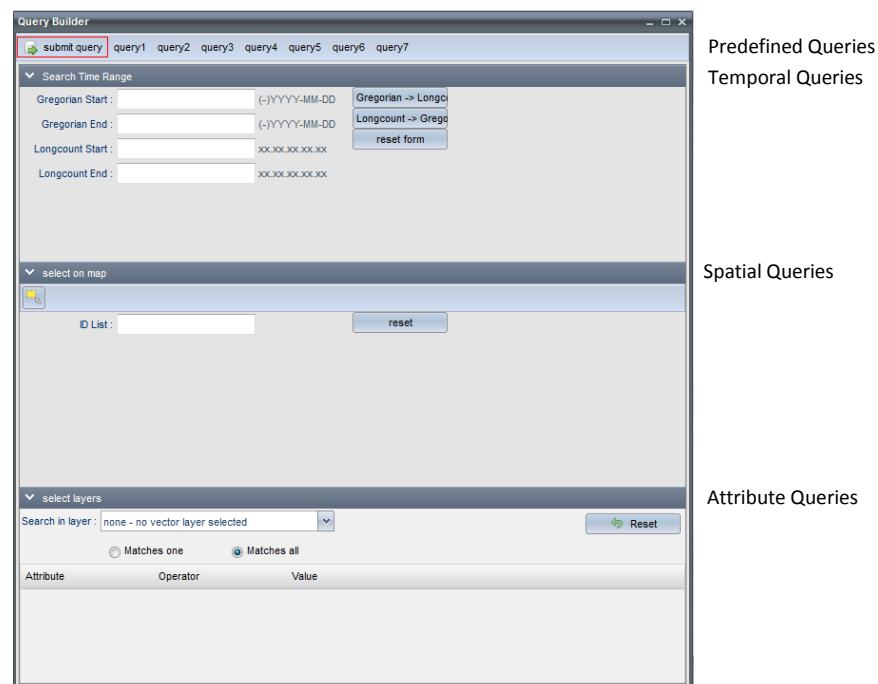


Figure 8: Query Builder

6 Modifying Data

An editing mode, where the user can modify data within the system was planned, as the “toggle editing mode” button in the toolbar indicates. However, due to time constraints, this function could not be set up.

7 Printing and Exporting Data

To print out maps, make sure that the Open Street Map layers are switched off. Those cannot be printed. Choose the “print” button from the toolbar. You have several options to format your printing.

The system allows you to export data and load it into your own GIS. To export data choose the “export data” button from the attribute table. **NOTE: This function is currently not working**