An ARTery of EMPIRE

Conquest, commerce, crisis, culture and the Panamanian Junction (1513-1671)

ERC CoG 648535

USER GUIDE

ISBN-978-84-09-18451-4

Daniel Muñiz Amian
Aurelio López Fernández
Bethany Aram

Funded by

Host

Partners

In collaboration with
Index

1. Introduction .................................................................................................................. 3

2. Roles ............................................................................................................................... 4
   2.1. Unidentified users ................................................................................................. 4
   2.2. Identified users ..................................................................................................... 4

3. User identification ....................................................................................................... 5

4. Main sections ................................................................................................................ 6
   4.1. Search ..................................................................................................................... 6
      4.1.1. Search item .................................................................................................... 7
      4.1.2. Sections ......................................................................................................... 7
      4.1.3. Visualization ................................................................................................. 8
      4.1.4. Filtering ......................................................................................................... 8
      4.1.5. Result tables ................................................................................................. 10
      4.1.5.1. Exporting results .................................................................................... 11

4.2. History ....................................................................................................................... 12
   4.2.1. Create document ............................................................................................. 12
   4.2.2. Register a place ............................................................................................... 14
   4.2.3. Step 2 ............................................................................................................... 17

4.3. Archeology ................................................................................................................ 18
   4.3.1. Create dig ......................................................................................................... 18
   4.3.2. Associate Stratigraphic Units .......................................................................... 19

4.4. Isotopes ...................................................................................................................... 21
   4.4.1. Create isotope sample ..................................................................................... 21

4.5. DNA .......................................................................................................................... 22
   4.5.1. Create DNA sample ......................................................................................... 22

5. Common questions and problems ................................................................................. 23
   5.1. Why do not I see data or information that I know is registered? ......................... 23
   5.2. Why do not all the expected results appear in a search? ..................................... 23
   5.3. Why does it take so long to display the result of a search? ................................ 23
   5.4. I just added information to a document, dig, isotopic sample or DNA, why do these changes not appear when I check the new information again? ......................... 23
1. Introduction

ArtEmpire’s team has implemented a complete web application [https://artempire.cica.es/] that works as an interface to manage a complex database designed especially for this project.

The team’s objective has always been to develop a graphic interface as intuitive and easy to use as possible. Nevertheless, the data model’s complexity may require assistance for its correct and complete use.

Hence this document is designed to allow any user to achieve the maximum performance from the application, with explanations and details of all its possibilities and uses, depending on the type of user.
2. Roles

There are two possible types of users for the application: identified users, with password and special permissions (researchers), or unidentified or common users (public).

2.1. Unidentified users

A common (public) user, without access credentials, will be able to view and consult any type of information. This type of user can access any section of the application as if he were an identified user. However, he will only have reading permissions, so he will not be able to make any kind of changes.

2.2. Identified users

An identified user (researcher) will have special permissions that will allow him, in addition to the reading permissions that any other user of our website has, to be able to make changes on the entries belonging to the corresponding sections, as indicated by his permissions.

That is to say, a user who has only permissions for the history section will be able to make changes on entries in the history section, whereas he will not be able to make changes on other sections, such as archeology, isotopes or DNA. Another possibility is that a user has permissions to make changes in more than one section or in all of them, in which case he will be an “administrator” user.

Since the graphical interface for both types of users will be the same, with the exception that an unidentified user will only be able to view the information and will not be able to make changes, from now on all documentation and demonstrations detailed in this guide will be formulated as if they were an identified user.
3. User identification

In order to identify yourself in the application with your username and password, previously provided by the administrators, [dmuiami@upo.es / alopfer1@upo.es], you must click on the upper right corner. Below is a description of the permissions you currently have. If you haven't identified yourself yet, by default you operate as a common or public user, only with read permissions.

To identify yourself as a researcher with permissions, you must click on “LOGIN” and enter your username and password:

Once you log in, you will see your username in the same corner and, if you click the login button again, all your permissions appear.
4. Main sections

On the top menu appear the main sections available, which are: search, history, archeology, isotopes and DNA.

4.1. Search

Search is the default section when you access your web application. It is a very complete section and complex at the same time, since it tries to offer the maximum possible number of consultations to the data, giving the biggest possible flexibility to the researcher, student, or interested public.

The section is divided into 5 subsections: “Search item”, “Sections”, “Visualization”, “Filtering”. The previous sections are fixed, but after the search for information, another section of result table appears.
4.1.1. Search item

In this point, you shall detail in the searcher if you are going to carry out searches related to historical persons or archeological individuals, or if you are going to consult historical goods, archeological objects or architectural elements. You must always make this differentiation first, in order to continue with the search process.

4.1.2. Sections

There is 3 main sections:

- **History**: To search in the history section.
- **Archeology**: To search in the archeology section.
- **Isotopes and DNA samples**: To perform sample searches corresponding to Isotopes and DNA sections. This section is directly related to archeology, considering that the samples are taken directly from archeological remains. The objective of this differentiation is to minimize the number of redundancies and errors in the results. Both sections, archeology and samples, can be consulted at the same time.

By selecting any of the sections, the drop-down corresponding to the next display step will be enabled:
4.1.3. Visualization

In visualization, you are going to indicate the fields you want to consult corresponding to the section marked previously.

When you open the drop-down menu, all the possible fields to consult appear, and you can add them one by one, selecting them and clicking on the (+) button. You can also add or remove all of the possible fields at once by using the links above the dropdown.

All selected fields will appear with the same name in the result tables.

4.1.4. Filtering

In filtering, you can indicate some values on the fields, which are common to all the sections such as place, start and end date, as well as some highlighted fields of every section.

Note at this point that the “Fecha/Date” filter fields are set to default values: 08/15/1519 for start date and 07/24/1671 for end date. It is indispensable to always check these values, considering that sometimes it will not be necessary to limit the dates. In that case, if you want to obtain the correct results, you will have to delete them, leaving them with the default values, which are “dd/mm/yyyy”, before carrying out the search.
The values entered so far can be filtered on specific fields. In this case, you must differentiate between “Filter Union” and “Value Union”. By default, these fields have values that will allow you to perform most searches, but they can be modified for more specific cases.

It is important to know that you can add the same field to be filtered as many times as desired, indicating in each case a different field value. For this reason, you must pay attention to the indicated fields:

- **Filter Union**: Its possible values are “AND (fewer results)”, set by default, and “OR (more results)”. With the value AND you can indicate that you want to filter by combining the values established by each and every one of them. However, if you establish OR, you will look for if only one of them is respected.

- **Value Union**: Its possible values are also “AND (fewer results)” and “OR (more results)”, set by default. In this case, using the value OR, you indicate that the fields to be filtered should accept results with any of the two values indicated. If you indicate AND, you force the result to have the same values.

It is easier with an example. If you want to look for those archeological individuals whose sex is “Female” or “Probably Female”, you should do it in the following way:

The AND in the field Filter Union serves to indicate that you want to take into account both sexes and not just one. The OR in the Value Union field indicates that you want results of both sexes: “Female” and “Probably Female”. However, if you enter the value AND in this field, you would not get any results in the search, because there is no individual who is “Female” and “Probably Female” at the same time.

**NOTE**: It is very important to press the (+) button once the desired filter is indicated in order for it to be applied, because if you do not do it, the filter will be worthless:
4.1.5. Result tables

Finally, after clicking on the search button, you will obtain the result tables, as many tables as sections you have indicated. Following the previous example with the fields “UE / Individual”, “Excavación / Excavation (place)” and “Sexo / Sex”, you would obtain the following result table:

<table>
<thead>
<tr>
<th>UE / Individual</th>
<th>Excavación / Excavation (place)</th>
<th>Sexo / Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>1103</td>
<td>PAPV_5</td>
<td>Catredal 2017 - Nave PVCA-1</td>
</tr>
<tr>
<td>1100</td>
<td>PAPV_5</td>
<td>Catredal 2017 - Nave PVCA-1</td>
</tr>
<tr>
<td>136</td>
<td>PAPV_9</td>
<td>Plaza Casa Oeste 1998 - Vivienda</td>
</tr>
<tr>
<td>1124</td>
<td>PAPV_5</td>
<td>Catredal 2017 - Nave PVCA-1</td>
</tr>
<tr>
<td>1093</td>
<td>PAPV_5</td>
<td>Catredal 2017 - Nave PVCA-1</td>
</tr>
<tr>
<td>1092</td>
<td>PAPV_5</td>
<td>Catredal 2017 - Nave PVCA-1</td>
</tr>
<tr>
<td>38</td>
<td>PAPV_3</td>
<td>Sur de la Plaza 2004 - Nave</td>
</tr>
<tr>
<td>1022</td>
<td>PAPV_5</td>
<td>Catredal 2017 - Nave PVCA-1</td>
</tr>
<tr>
<td>1120</td>
<td>PAPV_5</td>
<td>Catredal 2017 - Nave PVCA-1</td>
</tr>
<tr>
<td>156</td>
<td>PAPV_10</td>
<td>Parque Morelos 2003 - Vivienda</td>
</tr>
</tbody>
</table>

You get 13 pages of results with 10 entries on each page. You can organize the results by columns by just clicking on the title of each one of them. If you click on any of the records obtained, a new tab will open in the web browser with the record selected, thus accessing the corresponding section (history, archeology, isotopes or DNA).
4.1.5.1. Exporting results

It is possible to export the results obtained to Excel format (CSV). For this purpose, just click on the link located on the right of the table, at the top, which appears "Export to Excel (CSV)". Afterwards, a document will be downloaded. For a correct visualization in Excel of the obtained data, you must follow a series of steps:

1. Open a new document in Microsoft Excel, go to the “Data” tab and click on “From text”.

![Microsoft Excel Data tab](image)

2. In the file browser, search and select the file in “CSV” format recently downloaded.

3. In the assistant, select:
   
   3.1. First, the type of file as “Delimited”.
   
   3.2. Secondly, it is imperative to select the file source as “65001 : Unicode (UTF-8)”.

![Microsoft Excel Import Text Assistant](image)

4. After clicking on “Next”, indicate that the separator is the “Comma” and click on “Finish” and “Accept”.

![Microsoft Excel Step 4](image)
4.2. History

This is the section dedicated to history. When accessing the section, you will obtain a list of all the documents registered. You can organize the results by columns or access the document in detail by clicking on it.

<table>
<thead>
<tr>
<th>Tipo</th>
<th>Colección</th>
<th>Sección</th>
<th>Título</th>
<th>Fecha</th>
<th>Creación</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carta - Córdoba</td>
<td>AGS, MP</td>
<td>Mercaderes y Privilegios, 38, 1874</td>
<td>&quot;Pierre-Ars de Artois, procesado en los archivos de la Alta Comuna de Aragón&quot;</td>
<td>17/01/1463</td>
<td>19/07/2018</td>
</tr>
<tr>
<td>Carta - Córdoba</td>
<td>AGS, MP</td>
<td>Mercaderes y Privilegios, 38, 1874</td>
<td>&quot;El Rey Don Enrique y sus cortesanos&quot;</td>
<td>25/01/1465</td>
<td>19/07/2018</td>
</tr>
<tr>
<td>Carta - Córdoba</td>
<td>AGS, QC</td>
<td>Quedados de Córdoba, leg. 4, 1204</td>
<td>&quot;El Rey Don Enrique y sus cortesanos&quot;</td>
<td>26/01/1465</td>
<td>19/07/2018</td>
</tr>
<tr>
<td>Carta - Córdoba</td>
<td>AGS, QC</td>
<td>Quedados de Córdoba, leg. 2, 1314</td>
<td>&quot;Plan de Armas secretos del Monasterio de Plan de Armas&quot;</td>
<td>61/03/1460</td>
<td>19/07/2018</td>
</tr>
<tr>
<td>Acta - acta</td>
<td>AHN, Madrid, Cortejo, leg. 43655</td>
<td>&quot;Actas del rey en proceso fundado por Diego Arco&quot;</td>
<td>61/01/1462</td>
<td>19/07/2018</td>
<td></td>
</tr>
</tbody>
</table>

4.2.1. Create document

If you click on the "CREATE" button, you proceed to the creation of a new document.

The fields indicated as “Required” in the “Basic Information” section must be filled in and saved in order to continue with the creation of the document.
After saving the previous basic information, the sections common to all document types will be enabled, such as summary, transcription and other information, as well as the specific section for each document type, called specific characteristics of the document type. The changes made in each section must be saved by means of the corresponding save button in each section, because if this is not done, the changes not saved in previous sections will be lost.

Please note that the section called "Specific characteristics of the document type" is destined to all those specific fields according to the document type selected in the basic information. This is because our team currently take into account 20 different document types, ranging from a simple letter or card to a complex interrogation or an auction. Each document type has a different logic and different fields, which is why all the information must be completed in this section.

Finally, in the other information section, you can add additional information, such as url's, relevant bibliographic references to the document or include images and PDF documents.

To attach a picture, just click on “Select”. In the file browser, select the desired image or document and click on “Open” to attach it:
4.2.2. Register a place

In the first section called “Basic Information”, both in emission and reception, you can indicate a place that is related to the emission of that document or its reception on a certain date, indicating at the same time the precision data, which are, in the case of dates: Exact Date, Previous, After and Approximation. In the case of places: Educated Approximation - Region, City, Reference - Zone - Building, Location within the reference and Exact Coordinates.

If you write the name of a place, it will appear all those already registered in the system that coincide with part of what is written. Besides, if you pass the cursor over these places, you will obtain more information about them, such as the type of place or its location, as long as it has been indicated at the time of registering that place.

If the desired place is not registered yet, you can do it by clicking on “New place”:

![Image of the new place registration form]

1. **Name**: Enter the name of the place.
2. **Type**: Choose the type of place (e.g., City, Reference, Zone, Building).
3. **Localization**: Specify the location.
4. **Coordinates**: Enter the exact coordinates if available.

After filling in the required information, you can save the place by clicking on “Guardar” (Save).
Firstly, you indicate the name of the new place, as well as its type. Then, using the map, you navigate to the place you want to register. There are several ways to indicate the desired place by using the different options found in the button panel on the left of the map.

- The first option is to zoom in or out and corresponds to the line drawing on the map. Thus, you can register a place by drawing a line, indicating, for example, a certain route.
- The following option concerns a polygon, so that you can indicate a particular place by joining certain points that define a polygon that refers to an area or region.
- Finally, the most common option is to indicate a point on the map.

It can be difficult to navigate through the map to the desired location manually, as you do not have a search engine on the map. That is why, under the map, there is text box called “Coordinates”. Here, you can indicate the coordinates of the desired place to go automatically to the point you want to register. Previously, you must consult these coordinates using another external tool such as Google Maps or coordenadas-gps.com. For example, if you use the second tool, it would be enough to indicate the name of the place, click on “Get GPS Coordinates” and receive the coordinates:

After that, go back to the registration of the place and write in the coordinate box:

{"type":"Point","coordinates": [LONGITUD, LATITUD]}

For the previous example, just substitute the values of longitude and latitude as follows:

{"type":"Point","coordinates": [-81.1308434, 8.559559]}
And you automatically navigate on the map to the desired location

**Important note:** If when indicating the coordinates of a place you see the following image:

You must press the button (-) to move away from the area, removing zoom. This is owing to the places where satellite images are not available with the same level of detail as others.
4.2.3. Step 2

On the right side of the document card there is a section called “step 2”, which can be opened by clicking on the arrow in the red box:

When opening the section, you can select the type of item you want to display in the document, which may be people, goods or places.

When selecting any of the items, you have a list of people who have already been related to the document, and you can delete or edit them. You can also create new items by clicking on the “+” button.

In addition to completing the information about the item, as well as all its attributes (occupation, role, age...), you can directly relate it to other previously registered items. That is to say, you will be able to make direct relationships between people and goods or places, for example:

You can add as many relationships as you want, indicating in all cases, in a recommended manner, a description of the relationship.
4.3. Archeology

This is the section dedicated to the archaeology part. When you access it, as in the history section, you will get a list of all the archeological excavations registered in the system.

<table>
<thead>
<tr>
<th>Lugar</th>
<th>Nomenclatura de la excavación</th>
<th>Fecha de excavación</th>
<th>Unidades arqueológicas (UD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parque Viejo, Parque Moncloa</td>
<td>RAPV_01 (Parque Moncloa 2010 - Velezcas)</td>
<td>2010</td>
<td>5</td>
</tr>
<tr>
<td>Parque Viejo, Parque Moncloa</td>
<td>RAPV_10 (Parque Moncloa 2010 - Velezcas)</td>
<td>2010</td>
<td>20</td>
</tr>
<tr>
<td>Parque Viejo, Traza Urbana</td>
<td>RAPV_11 (Traza Urbana 2003 - Azula)</td>
<td>2003</td>
<td>1</td>
</tr>
</tbody>
</table>

You can organize the results by columns or access the document in detail by clicking on it.

4.3.1. Create dig

If you click on the “CREATE” button, you can create a new dig.

To continue with the following steps in the creation of the new dig, you must complete the fields indicated as “Required” and then click on save. You can also attach images or documents associated with the dig by clicking on the “Select” buttons and searching for the files in your local computer.

As it happens when you register a place in history, described in point “4.2.2. Register a place”, you will be able to refer to the desired place by navigating on the map or by indicating it with exact coordinates. In this case, you can also indicate the desired reference system, establishing equivalences between both elements. The reference systems can be the one based on the EPSG code: 4326 (European Petroleum Survey Group), with geographical coordinates WGS84, or also the one based on the EPSG code: 26717 with geographical coordinates NAD27.
Once the basic information is saved, you can work with the stratigraphic units, which can be of the “Burial” and “Non-burial” type. In the second case, the possibility of recording remains or calculations of mni (minimum number of individuals) and architectural elements or other associated elements is considered.

4.3.2. Associate Stratigraphic Units

Once the excavation has been registered, you can enter as many stratigraphic units (EU from now on) associated with that excavation as required, as follows:

Once the basic information is saved, you can work with the stratigraphic units, which can be of the “Burial” and “Non-burial” type. In the second case, the possibility of recording remains or calculations of mni (minimum number of individuals) and architectural elements or other associated elements is considered.

4.3.2. Associate Stratigraphic Units

Once the excavation has been registered, you can enter as many stratigraphic units (EU from now on) associated with that excavation as required, as follows:

If you open the file of any of these EU, you can register a large amount of related information, and add as many rests or grave goods as necessary.

To add an archaeological remainder, click on the button [+] under the label “RESTS”, obtaining the corresponding registration form:
First, you must indicate the category of the corresponding rest, so that the data of the second drop-down list called “REST” can be loaded. This is necessary because if you select the “Skull” category, for example, it will only be possible to select a rest from this category, and the teeth will only appear if you select one of the tooth categories.

You will also be able to associate some anomalies, which will also appear filtered according to the type of rest selected. At the same time, you can associate images to the rest, clicking on select and searching in your local equipment the desired image.

Likewise, you can associate an object called grave to that EU, by clicking on the corresponding [+ ] button:

You can also attach images and documents in PDF format.
Finally, after the field “Observations” of the EU card, you will find two buttons to attach specific images of it as well as the cards of the excavations of 2017 and 2018 in PDF format.

4.4. Isotopes

This is the section dedicated to the isotopes. By accessing the section, you will obtain a list of all those samples registered from isotopes.

<table>
<thead>
<tr>
<th>Sample name</th>
<th>Species</th>
<th>Site - BAPV</th>
<th>Stratiification</th>
<th>Stratification</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAV_2604_OO</td>
<td>PAV_2604_OO</td>
<td>2001-2004</td>
<td>106</td>
<td>Rib left</td>
</tr>
<tr>
<td>PAV_2604_OO</td>
<td>PAV_2604_OO</td>
<td>2005-2006</td>
<td>93</td>
<td>Tooth 25</td>
</tr>
<tr>
<td>PAV_2604_OO</td>
<td>PAV_2604_OO</td>
<td>2007-2008</td>
<td>93</td>
<td>Tooth 56</td>
</tr>
</tbody>
</table>

You can order the results by columns or access the document in detail by clicking on it.

4.4.1. Create isotope sample

If you click on the "CREATE" button, you can create a new isotopic sample.
As in the case of historical documents or excavations, in order to proceed with the registration of some isotopic analysis, such as biopatite or collagen, you must first fill in and save the information about the sample, complying in a mandatory way with all those cases indicated as “Required”.

4.5. DNA

This is the section dedicated to the DNA. By accessing the section, you will obtain a list of all those samples registered from DNA.

You can order the results by columns or access the document in detail by clicking on it.

4.5.1. Create DNA sample

If you click on the "CREATE" button, you can create a new DNA sample.

As with historical documents, digs, or isotopic samples, in order to proceed with the registration of any DNA analysis, such as MTDNA, YCHROMOSOME or WHOLE-GENOME, you must first fill in and save the information about the sample, filling in all those cases indicated as “Required”.
5. Common questions and problems

5.1. Why do not I see data or information that I know is registered?

**ANSWER:** If you have not identified yourself as a user with your credentials, as you can find in point “2.2. Identified user (researcher)” this manual, you can only view non-confidential information and you cannot modify any information. If you have user credentials, enter the application as explained in point “3. User identification”.

5.2. Why do not all the expected results appear in a search?

**ANSWER:** The dates selected may limit the scope of the search. You can delete this default date and not consider this filter.

5.3. Why does it take so long to display the result of a search?

**ANSWER:** Keep in mind that if you search for people, for example, in history, selecting all the fields and not applying any kind of filter, it may take between 20 and 60 seconds. If after this time you do not get any results, apply some kind of filtering to narrow the search and try again. If you still do not get any results, contact one of the administrators [dmuiami@upo.es / alopfer1@upo.es].

5.4. I just added information to a document, dig, isotopic sample or DNA, why do these changes not appear when I check the new information again?

**ANSWER:** You may not have clicked on the save button after adding the new information. It is also imperative that, if you change two different sections of the same document, for example, you save them using the corresponding button in both places. If you add something in basic information of a document and you add a transcription, first you should click on the button to save the basic information and then on the corresponding button to transcription.