



# ARCHES

H2020 – 693229

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## Deliverable D3.6 “Report on system integration and testing – 2<sup>nd</sup> version”

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<b>Deliverable nature:</b>	R: Report
<b>Dissemination level:</b> (Confidentiality)	PU: Public
<b>Contractual delivery date:</b>	03-2019
<b>Actual delivery date:</b>	03-2019
<b>Version:</b>	1.0
<b>Total number of pages:</b>	15
<b>Keywords:</b>	Software platform, avatars, games, data model, graphical user interface.

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**Abstract**

The present deliverable contains the definition, analysis and design between subsystems of the ARCHES platform, an updated version of the data model, the use case analysis from the web system requirements defined in the deliverable D3.1 "Report on system architecture definition" [1] and a first definition of the graphical user interface (GUI).

The partners have worked together to reach the best initial possible design meeting the stakeholders' needs. The design will be iterative and will allow the technical developers to implement modifications, adaptations or improvements based on the feedback from the people with differences and difficulties associated with perception, memory, cognition and communication, leading to more appropriate and effective results.

The present deliverable also shows what was changed upon the takeover of the responsibility of the deliverable by another member of the consortium.

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## Document Information

IST Project Number	H2020 - 693229	Acronym	ARCHES
Full Title	Accessible Resources for Cultural Heritage EcoSystems		
Project URL	<a href="http://arches-project.eu">http://arches-project.eu</a>		
Document URL	<a href="http://arches-project.eu">http://arches-project.eu</a>		
EU Project Officer	Luis García Domínguez		

Deliverable	Number	D3.6	Title	Report on system integration and testing – 2 <sup>nd</sup> version
Work Package	Number	WP3	Title	Development of an accessible software platform
Date of Delivery	Contractual	M30	Actual	M30
Status	Version 1.0		final <input checked="" type="checkbox"/>	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Demonstrator <input type="checkbox"/> Other <input type="checkbox"/> Ethics <input type="checkbox"/> ORDP <input type="checkbox"/>			
Dissemination level	Public <input checked="" type="checkbox"/> Confidential <input type="checkbox"/>			

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Version Log			
Issue Date	Rev. No.	Author	Change
15-03-2019	0.1	Christoph Bitzner	Update of the general information
24-03-2019	0.2	David Turewicz	Updates on technical sections

28-03-2019	0.3	Stefan Schmied	Review
29-03-2019	1.0	Christoph Bitzner	Format and final version

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## Abbreviations

**API:** Application Programming Interface

**ICT:** Information and Communication Technologies

**ARCHES:** Accessible Resources for Cultural Heritage EcoSystems

**EU:** European Union

**FK:** Foreign Key

**GUI:** Graphical User Interface

**PK:** Primary Key

**UI:** User Interface

**URI:** Uniform Resource Identifier

**UML:** Unified Modelling Language

**TTS:** Text-To-Speech

**WP:** Work Package

## 1 Introduction

This deliverable presents the advances in the analysis and design of the software platform of the ARCHES project before the exploration groups in Spain and Austria are built and the second round of pilot exercises – task T6.2 “Pilot Stage II – validation of initial developments” – starts in month 13 (October 2017).

The first phase consisted in defining the interaction between the different subsystems – i.e. the avatar component and the games – of the ARCHES platform that were already described in deliverable D3.1 “Report on system architecture definition” [1]. Once the interaction and communication mechanisms were detailed, and based on both technical and end-user requirements, a catalogue of use cases was developed. Use cases can be defined as a type of textual requirements that reflect how a user will interact with a solution to achieve a specific goal. In essence, they capture all the possible ways through which the user and the software system can interact. To this end, the full process was thoroughly described step by step.

Next phase addressed the collection of data from the different museums involved in the project, i.e., Museo de Bellas Artes de Asturias, KunstHistorisches Museum Wien, The Wallace Collection, Museo Thyssen-Bornemisza, Museo Lázaro Galdiano and the Victoria & Albert Museum. After an initial analysis, a common data model was created. This included the selection and generation of the main entities that will be used to store information about the works of art and the corresponding data attributes. Likewise, we established the relationships or associations among those entities as well as (often implicit) relationships among those attributes.

Finally, a set of mock-ups were designed for the implementation of the graphical user interface (GUI). To this end, the requirements, needs and capabilities of the target audiences were taken into account. However, this is a first version intended to be updated and enhanced all along the iterative development process thanks to the experiences and recommendations reported by the exploration groups.

The present deliverable also shows what was changed upon the takeover of the responsibility of the deliverable by another member of the consortium.

There has been a significant update and a redevelopment of the Management Backend which is underlying the Web-Application and Platform. In Point 2.1 can be seen a new version of the database and section 3 describes the Backend in detail.



## 2 Database-Architecture

### 2.1 Updated Database-model

The actual Database-model of for the applications and the platform has been restructured as can be seen on the following image. It fits the requirements, which have been established through the duration of the project.

Due to more concrete needs which have been made clearer with the time the Database-model needed to be refined.

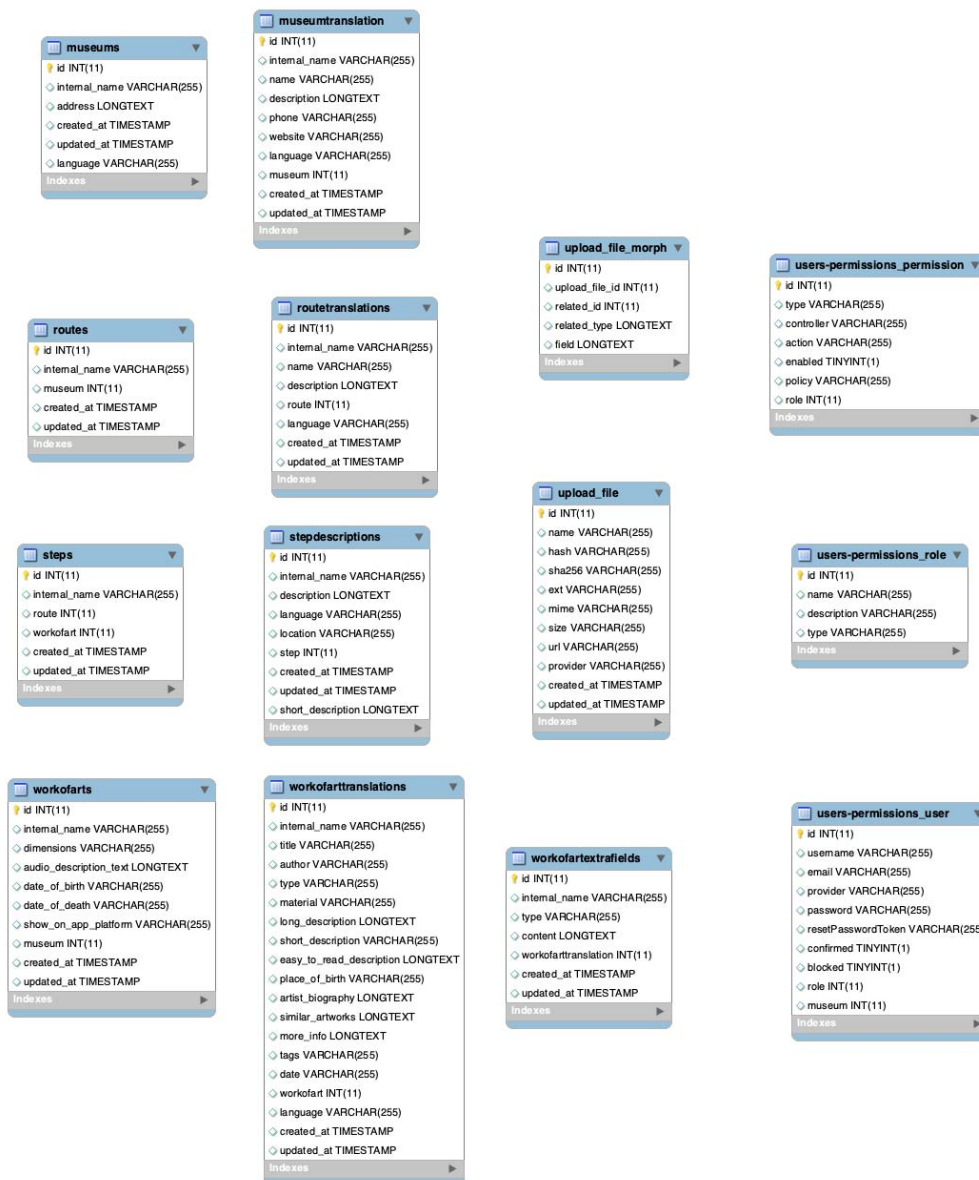


Figure 1: Updated Database Model

### 3 Management Backend - Functionality

The Management Backend has been added to the system since it improves the functionality of the users and helps museums that are participating to organize their data much more efficiently. This chapter shall give an overview over all 3 sections the Backend consists of.

Every museum gets its own login-credentials to enter the backend.

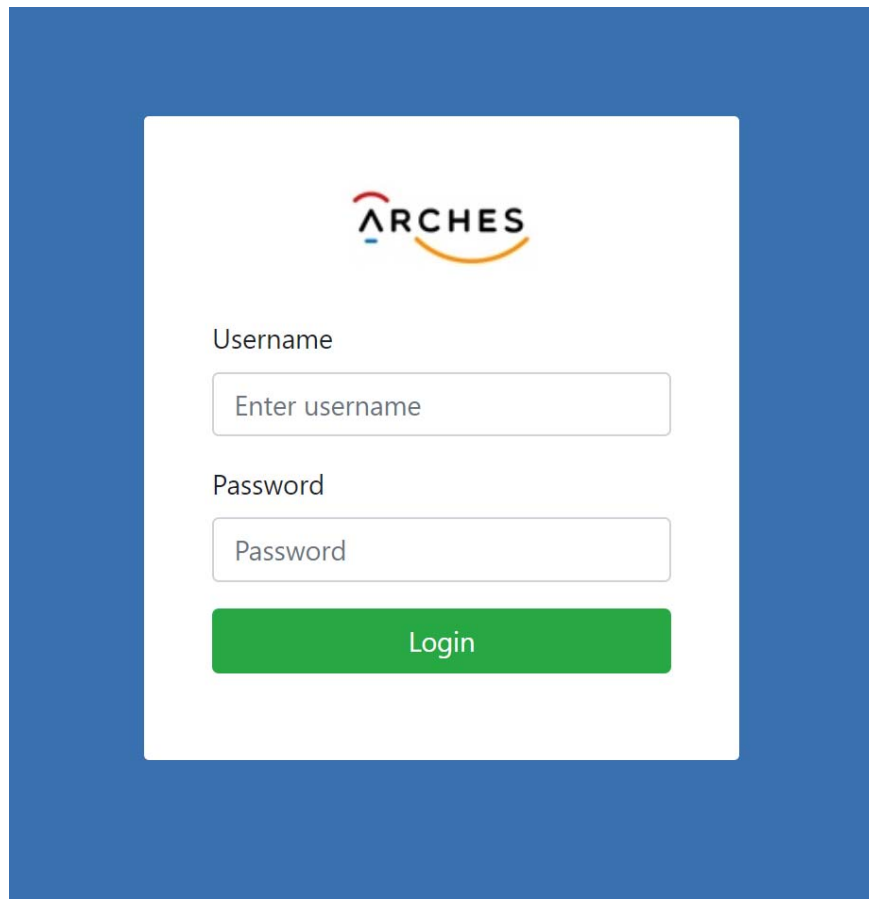



Figure 2: 'Login' screen.

### 3.1 Museum Information

The first section in the Backend is the general Museum Section. Some of the core information of the app can be found in that section.



- Museum
- Routes
- Artworks
- Logout

## Museum Information

Name\*

Description\*

The Wallace Collection is a national museum which displays the wonderful works of art collected in the eighteenth and nineteenth centuries by the first four Marquesses of Hertford

Phone\*

Website\*

Address

**Figure 3: 'Museum Information' screen.**

### 3.2 Routes Screen

The Route Section is the most complicated part of the backend and gives the user many possibilities to organize the content of the application dynamically.

Every route consists of several steps and every route/step can be filled with data. Furthermore, the user can upload several additional files. After some steps there exist artworks which need to have plenty of options since the app shall be made accessible for various user groups.

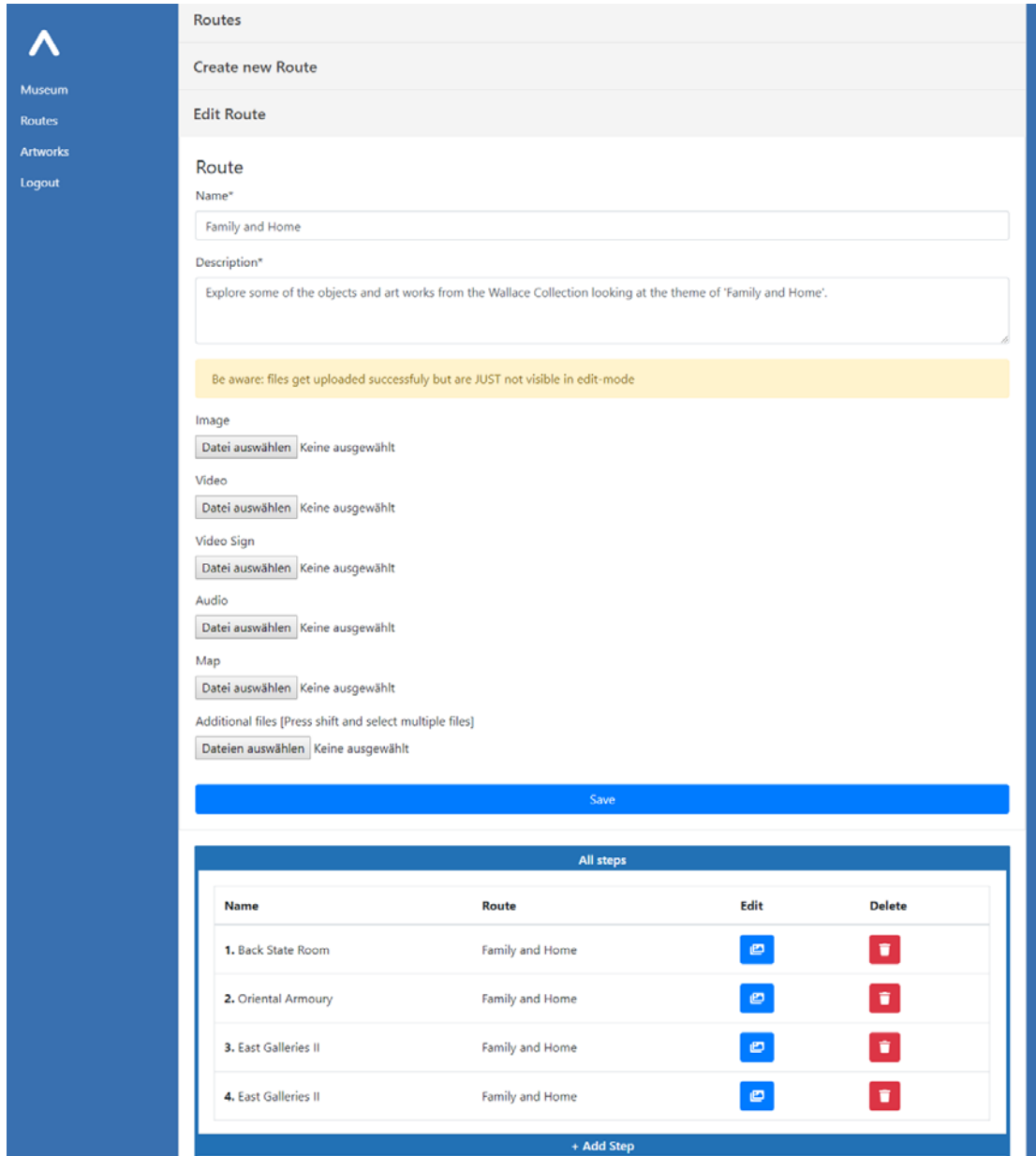


Figure 4: 'Routes' screen.

### 3.3 Artworks Screen

The Artworks screen shows all the artworks that have been uploaded by the particular museum. Per default the artworks are shown that have been added in the routes-section. It is also possible to add artworks directly into this section. These particular artworks will not be shown later in the routes section of the app.

Name	Language	Edit	Delete
Inkstand	en		connected to step
Fete galante in a Wooded Landscape	en		connected to step
Wardrobe	en		connected to step
The Lady with a Fan	en		
A Dance to the Music of Time	en		connected to step
Louis XV's Commode	en		
Louis XV's Commode	en		connected to step
Imperial Wine Cups	en		connected to step
A Woman Peeling Apples	en		connected to step
Celebrating the Birth	en		connected to step

Create new Artwork

Figure 5: 'Artworks' screen.

## 4 Conclusions

This document defines the advances in the analysis and design of the ARCHES platform.

First, the integration between the platform and the subsystems (avatar and games) are explained. Then, based on the functional analysis described in deliverable D3.1 “Report on system architecture definition”, the use cases have been described. Likewise, a first approach to the graphical interface of the platform has been designed and will be assessed by the exploration groups. In addition, the actors involved in the ARCHES platform have been identified and described.

The development of most components has been already started. The newly added Backend has helped to improve the usability of the applications. Every user has the ability to add and change routes or texts at any moment.

- D3.7 “Report on system integration and testing – 3<sup>rd</sup> version”: This is the final version of the report on the integration once the pilot exercises have been completed. The final results of the platform will be included in this document in conjunction with a fully detailed user guide.

## References

- [1] D3.1 “Report on system architecture definition”, ARCHES project. Available online at (25<sup>th</sup> September 2017): <http://arches-project.eu/download/1002/>
- [2] DBpedia API website. Available online at (25<sup>th</sup> September 2017): <http://wiki.dbpedia.org/projects/dbpedia-lookup>
- [3] Europeana API website. Available online at (25<sup>th</sup> September 2017): <http://labs.europeana.eu/api/introduction>
- [4] Finnish National Gallery API. Available online at (25<sup>th</sup> September 2017): <http://kokoelmat.fng.fi/api/v2support/docs/#/overview>
- [5] Rijksmuseum API website. Available online at (25<sup>th</sup> September 2017): <https://www.rijksmuseum.nl/en/api>