

# OUTPUT T2.2

## Pilot Action (P13)

### Report

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**Title** Output T. 2.2  
Pilot Actions for preserving and management of natural and cultural heritage and resources developed and/or implemented

**Date** February – September 2022

**Venue** Iža - Celemantia

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**Implementing partner(s)** Slovak University of Technology in Bratislava - STUBA

**Name of Pilot site** Iža - Celemantia

**Project ID** DTP3-1-359-2.2

## General description:

Virtual reconstruction of the pilot site of Slovakia – Iža consists of virtual 3D model of the Roman fort and virtual tour through its hypothetical reconstruction. The virtual 3D model was created by 7reasons with cooperation with Ludwig Boltzmann Institut für Archäologische Prospektion und Virtuelle Archäologie (LBI ArchPro), which provided the input materials from geophysical prospecting.

The virtual tour was made from high-quality panoramic renderings created by the company 727 s.r.o. These renderings were made from the detailed 3D model of the fort already owned by the municipality of Iža, which presented the previous state of the fort and achieved the adequate quality of the presentation. These panoramas depicted five spots outside and inside of the fort: Southern gate, Southern part of the fort, Western gate, Center of the fort and Overview of the fort. The panoramas were subsequently included by STUBA in the mobile application and in the online presentation. This virtual reconstruction and these technical solutions for online and offline presentation were used as an input for the implementation on the site in Iža.

## Agenda:

February 2022 - Coordination meeting with LBI Arch Pro, 7reasons and STUBA

March 2022 – Coordination meeting with LBI Arch Pro, 7reasons and STUBA

End of March 2022 – Delivery of the 3D model by LBI Arch Pro and 7reasons to STUBA

April and May 2022 – Implementation of the 3D model into the Living Danube Limes VR app

End of May 2022 – Consultation meeting with Institute of Archaeology SAS

May 2022 – Acquiring of panoramic renderings from 727 and their implementation into virtual tour accessible online and within the Living Danube Limes app by STUBA

29<sup>th</sup> of June 2022 – Pilot action - Implementation of virtual reality reconstructions on pilot site

## Participating Partners and Stakeholders:

Roman ethnographic museum of Celemantia

Municipality of Iža

City Institute for the Protection of Monuments Bratislava

Institute of Archaeology SAS

STUBA

## Preparatory phase:

The preparatory phase consisted of geophysical prospecting survey provided by LBI Arch Pro and meeting with Institute of Archaeology SAS and Roman ethnographic museum of Celemantia. The data from the survey were used in the hypothetically reconstructed virtual 3D model of the fort by 7reasons. Subsequent coordination meetings between LBI Arch Pro, 7reasons and STUBA were solving mainly range and technical issues of the 3D model presentation within the app and online.

Another consultation with Institute of Archaeology SAS suggested to complement the presentation with the 3D model provided by Municipality of Iža, pre-rendered into panoramas by 727 company. STUBA solved the issues with implementing the newly obtained panoramas into virtual tour accessible online and offline on the site with mobile devices and with virtual reality goggles.

Later, the QR codes were generated accessing the specific panoramas from the particular spots on the site. Testing of the app and QR codes installation took place directly on the site in Iža.

## Implementation and Testing approach:

On the site, the accessibility of the internet connection was examined together with the conditions for presenting the virtual reconstruction monoscopically on the displays of phones and tablets, or stereoscopically with virtual reality goggles – Google Cardboard V2.

As the internet connection on the site was not sufficient, the offline presentation using the Living Danube Limes VR app from Google Play was preferred.

The QR codes inviting visitors to install the app and to view the specific spots on the site were implemented on the information boards, also presenting the project, and informing about the specific places of the fort. These information boards were installed on the five spots on the site on the exact places, which were depicted in the renderings to invite the visitors to see and compare the current and previous state of the fort. The reading of the QR codes with mobile phones and tablets within the app was without problems. The solution was easy-to-use, and the related panorama was opened on the specific spot with QR code complementing the current state of the fort.

The virtual reality implementation continued in the Roman ethnographic museum of Celemantia, where information boards with QR codes were installed too. The visitors are informed in the museum and online to install the Living Danube Limes VR app before they access the site, which is near by the town of Iža, but only with limited connection.

Photos from the implementation on site:







*Installation of the information boards on the several spots on the site. Source: Authors*







*Viewing the virtual reconstructions on tablets, phones and cardboard VR goggles. Source: Authors*



*Images of the 3D model provided by 7reasons - left and renderings provided by 727 - right. Source: Authors*





*Implementation of the VR reconstruction in the Roman ethnographic museum of Celemantia. Source: Authors*

## Dissemination

Information about the virtual reconstructions of Iža are accessible online through the domain [livingdanubelimes.eu](http://livingdanubelimes.eu) and Living Danube Limes app placed on the app stores.

QR codes for the app and for accessing the VR reconstructions were placed on the leaflets and booklets disseminated during all the summer events in Iža, Rusovce, Devín and Bratislava.

Information about VR reconstructions in Iža were disseminated also through STUBA website and on the event Night of the Researchers in September in Bratislava.





Photos from the presentation of VR reconstructions in Bratislava and on the site in Iža. Source: Authors

## Target groups:

Target groups reached through the pilot action:

| Target groups (in accordance to AF section C.2.2) | Target value | Institutions/interest groups/key persons present at the event   |
|---|--------------|---|
| local public authorities                          | 1            | Municipality of Iža   |
| regional public authorities                       | 1            | City Institute for the Protection of Monuments Bratislava   |
| national public authorities                       | 3            | Institute of Archaeology SAS, STUBA, Ministry of Investments, Regional Development and Informatization of the Slovak Republic |
| higher education and research                     | 1            | Comenius University of Bratislava   |
| education/training centres and schools            | 21           | Secondary schools in the region of Bratislava   |
| SME (small and medium enterprises)                | 1            | 727   |
| general public                                    | circa 3500   | General public on the events related to the ship in Bratislava, Devin, Iža, Rusovce   |
| interest groups including NGOs                    |              |   |



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| international organisations under national law      |  |  |
| international organisations under international law |  |  |
| sectoral agencies                                   |  |  |
| infrastructure and (public) service providers       |  |  |