

**Illustrative and technical report for
project idea:**

“Virtual symbolic revival of the Cave Bear”

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1 Introduction to the project idea

This document provides an illustrative and technical introduction to the project idea for the implementation of the multimedia system, fully aligned with the „Ancient History“ project as described by Natural History Museum Rijeka. More precisely, to life, behavior and extinction of cave bear (*Ursus spelaeus*), magnificent and powerful animal, but it is not limited to.

- Through combination of spectacular high-resolution dome projection on the tunnel surface and mobile application, a unique edutainment experience will be created for the visitors, and they will be triggered for action, creativity and the participation in the final design of the scenery.
- The mobile application will project cave painting almost similar to prehistoric ones, but with the hidden task or message that needs to be decrypted and resolved using specific symbolic language. The symbols will be specifically designed in order to be acceptable for young children, elderly people and visually impaired people. The outcome of the game will not only be visible in the tunnel (cave), but also in the Museum, on the web site and mobile application. This will make it accessible for the disabled people too.
- Finally, the solution will be completed with a presentation web site, various call-to-action solutions and propagated through social media.

2 Aims and expected outcomes

2.1.1 Communication and connection with the territory

The multimedia project specific design spans multiple topics. On one hand, it will serve the purpose of being valuable informative journey for the visitor that fits the Natural History Museum Rijeka subtopic „Ancient History“ and on the other hand it will be a powerful tool for raising public awareness on the current rapid extinction of species. It will attract visitors and tourists of Rijeka underground tunnel as a surprising multimedia experience with contemporary gamification elements.

The multimedia event combined by 3D mapping projection, holographic projection and mobile application will use symbolic, graphical elements easy to use and understand, breaking the cultural and language barriers. Unlimited number of visitors of all ages will be able to contribute to the projection at the same time trying to jointly reach the goals of the game.

Through the symbolic language we will be reminded that in the past human race was not divided as today. In the times when homo sapiens and cave bear were contemporaries, humans were supporting each other for survival.

Project will support the ideas of tolerance, collaboration and mutual appreciation, thus targeting all demographic groups.

Tragic event of cave bear extinction will formulate the first thread of the story. The journey will work at personal level, sending the message that each of us can contribute to wild life protection. People on holidays abroad may be tempted to bring home souvenirs and mementos involving endangered plants and animals. An important message will be sent that wild life extinction is still happening even at the present time.

The final aim of this multimedia journey is to keep people together, to deal with facts, but to produce emotions and memories as well.

2.2 How this project fits in with the Innocultour programme's objectives

The project idea fits in very well with the general and specific objectives of the programme Innocultour in number of ways.

It will bring to the surface less known story about the importance of caves as natural underground shelters and about the important finding sites of ancient mammals in Rijeka region, including exterminated cave bear. It will create an excellent opportunity for visitors to be attracted by amazing stories and additional motive for visiting the Natural History

Museum. This site, among the other more famous can be packaged and offered as a brand new hot spot for the tourist tours in Rijeka.

Both parts of multimedia installation, mobile application and mapping projection are very suitable media for additional promotions of the cultural and natural heritage sites.

2.3 Activity plan for the project

Management of the project should provide the orchestration of all operational activities.

Activities that need to be performed during the project include

- Site survey
- Planning of physical installation and eventual spatial modification
- Preparation of technical documentation
- Preparation of multimedia scenario(s)
- Preparation of the content for educational classes and visitor groups (not prerequisite for multimedia installation)
- Advertising and dissemination rollout plan
- Software requirements for mobile application
- Content production
- Installation on-site
- Installation and test of supporting logistic systems (Wi-Fi, power supply etc.)
- Loading of content, software and final technical tests of the multimedia system
- Dissemination of the results, advertisement of the solution

We plan to film all the activities, create scenarios, produce and post-produce a video/digital content, create and run a dissemination rollout. The content of this part will be used to promote the project itself and Innocultour programme on social networks and Youtube.

2.4 Dissemination plan

The dissemination rollout plan will consist of several activities all involving the latest trends and technologies to support the project informing and performing. We plan to design a micro page web site to tell the story of the past struggle with extinction, story of the present time threats for the wildlife and story of the future challenges. It will be a story about positivism and new optimism, because the bright future will bring a better, more sustainable society only if the people organize and fight for it.

All digital content, such as game of ancient symbols, quiz game, photos, videos and graphics will also be independently propagated on different social networks and will create viral effects. In all productions, the focus will be on the shareability of the content. Social media

will also be used to communicate about events by creating invitations, reminders and event content. Our other ideas for dissemination include original edutainment applications and contents, blogs and invitations to actions. All contents will be prepared in four languages, English, Croatian, Slovenian, and Italian and managed in a Content Management System.

3 Technical innovations used in the project

3.1 Equipment and supporting systems

From the technical perspective, the whole installation consists from the core multimedia system and supporting infrastructure.

Core multimedia system includes a computer system with a powerful graphics and a number of video outputs, dome projection system to cover upper half-sphere in high resolution, projection calibration software, audio system, mobile application, projection application, mechanical construction and installation kits.

In order to interact, both a computer system and mobile devices have to be connected to a Wi-Fi hot spot installed in the tunnel as part of supporting infrastructure.

Supporting infrastructure also includes a call to action web site, mobile application stores, i.e. accounts that will host mobile application after development and test. Mobile application, will become easily available for download right on the spot.

Current tunnel lightning has to be upgraded with dimming capability, to enable unobstructed projection and optimal light conditions.

All power supply installations have to be checked against new consumption calculation and eventually modified.

All electronic equipment have to be hidden, protected from the deterioration caused by high humidity and/or temperature. Mechanical construction, projector holders and joints have to be visible as little as possible.

Audio system should be positioned in a way to surround the visitors and to produce different spatial audio effects and background audio.

4 Production, design and expert collaboration model

Production of all the scenarios, symbolic language modelling and digital contents will be done following two main guidelines:

- a) **Physical configuration of the ceiling, useful boulder surfaces and patterns will determine visible positions of projection segments, symbols, cave bear etc. Literally, it will be 3D mapping on the free-form rocky surface.**

Application will project cave painting almost similar to prehistoric ones, but with the hidden task or message that needs to be decrypted and resolved using symbols available on the mobile application. The right use of symbols will trigger another beautiful sequence of animations with video and audio effects. Some of them will revive motions and behavior of the cave bear.

The whole content has to be produced in high or ultra-high definition, with high quality and fidelity, resolution and brightness suitable to produce the wow-effect on the visitor.

Design of the mobile application has to be simple, fluid and intuitive, fully compatible with the projection. It will contain a simple instruction for the game and historical game scores.

Several infographics need to be designed in the form of the ordinary signage with basic information about the project, installation and free Wi-Fi spot.

- b) **Scientific (and therefore gamification) scenarios for the content will be mutually agreed between museum experts and multimedia artists**

Management of the project should provide the orchestration of the expert group activities, meetings and events, as well as all the operational activities, production and logistics. The project team will organize a main working group consisting of educators, graphic designers, multimedia and visual artists, museologists and scientists in an innovation lab or series of workshops with the tasks

- modeling the execution plan of the new exhibit outside the museum
- modeling subsequent museum communication and educational actions



5 Economic plan and cost projections

No.	Item description	Unit price (EUR)	Qty.	Total (EUR)
1	3D Projection mapping system (projectors system, computer system, sound system, lighting system, network equipment, installation services, video production, content design)	61.400,00	1	61.400,00
2	Web site development and dissemination activities (project web site with content management system and hosting 12 months, social media pages, content development, print)	10.560,00	1	10.560,00
3	Mobile application development (development services, content management system with hosting 12 monthsh, gaming scenario, symbolic language design)	22.600,00	1	22.600,00
TOTAL (EUR)				93.560,00

5.1 Project time plan

Project will be implemented within the frame of 3 months.

5.2 System maintenance

In order to ensure easy maintenance we expect project to meet the following criteria.

- All the systems will be protected from the vandalism and other conditions.
- All applications and platform software will be supported remotely.
- All the contents will be administrated centrally.

5.3 Energy consumption

Only the Energy Star compliant equipment will be used in this project.