

DELIVERABLE 4.1.1

Story telling of the virtual museum: collection and selection of themes and production of contents to form part of the virtual museum

LP – Central Adriatic Ports Authority

Work Package	4 “Knowledge and usability of cross-border heritage of Adriatic Italian and Croatian ports”
Activity	4.1.1 “Virtual Museum setting up”
Phase Leader	PP9-UNIVPM
Deliverable	Del 4.1.1 “Story telling of the virtual museum”

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1. VM story telling description

What is the theme, who is it addressed to, how do you develop the idea?

The centre of the narratives of the Virtual Museum of the port of Ancona, as part of the REMEMBER project, will be the transformation of the port ecosystem. In fact, the port of Ancona is characterized as a value hub for the coexistence of manufacturing and transformation economies, a network of commercial and tourist tertiary services, cultural and creative industries, specialized functions of control and security. The ecosystem is a dynamic and innovative multilevel context, a useful infrastructure that welcomes the proximity between the historical-artistic and archaeological emergencies and the contemporary art, architecture, business and works; it is a hub of value and values that produces tangible and intangible content, networking actions on a continental and Adriatic scale in the macro-regional, city and territorial dimension.

Thus the urban embrace of the port by virtue of a highly suggestive heritage, offers and shares a valuable patrimony, natural assets for dialogue with temporary and permanent citizens, travellers and tourists from the Marche and Adriatic area. The transformation and modernization of economies and jobs rests on this border landscape between land and sea, between millennial traditions and development perspectives. In fact, an overall requalification of the port area is underway with respect to mobility and accessibility of the production and commercial areas, and different programs of inclusion and urban regeneration of the neighbourhoods are active that act as a hinge, in particular the Archi district: the objective is to activate and accompany processes and programs consistent with a new competitive space, socialize the redesign of the skyline and docks, favor the development of new relationships between port and city made of professional, socio-economic reverberations and formal belonging of the gaze. Thus the active docks, the backdrops of the temporary architectures made up of ships, ferries and cranes, fishing boats, sails and containers, become the terrain for sharing with all forms of citizenship. - civic, cultural.

It is precisely this precious endowment that rests on a unique and articulated heritage, with assets linked to tangible and intangible heritage, the centre of influence of a stratified cognitive

capital with high added value that acts as a bridge between skills, communities, sustainable development models. These strategic actions with the subjects that animate economic development, strengthen relations with the production chains of the territory and its historic districts in metamorphosis, increase knowledge and the exchange between cultures, contextual and formal knowledge, and confirm the identity of the inbound and outbound apical infrastructure for high-quality manufacturing, commercial traffic and passenger transit. Thus the port - with its multilevel governance - interprets the vocation of hospitality and care where the cohabitation between differences represents the chosen context of development.

The way in which the Local Virtual Museum of the Port of Ancona will be able to fulfill its mission of representation and enhancement of the cultures that identify its history and perspective is that of a system of narratives in multiple languages - words, images, sounds. There will be authorial elaborations and citations from the archives involved in the project - ICCD of the Mibact, Corsini Archive of the Municipality of Ancona to which other partnerships may be added - through still and moving images, sound documents such as voices and significant environmental acquisitions of the port landscape, words understood as documents, stories, new writing. A network of points of interest - POI - implemented with a digital information system and cross-sectional contents designed for usability by different devices - will provide guidance for understanding the transformation of the port from a historical perspective, from antiquity to the present, to traces of the future. The target users look to resident citizens of the vast regional and supra-regional area, port operators, tourists and travelers on ferries and cruises, event organizations, cultural projects and tourist reception programs. The Local Virtual Museum of the Port of Ancona aims to be a platform for contemporary representation of the port ecosystem capable of activating forms of belonging and enhancement of the heritage variously understood as an irreducible resource for development. The matrix structure is the prerequisite for a wide and free use, which in the intersection between languages and content categories favors a multiple and transversal reading.

On the technological level, the digital dimension elaborates an offer that adheres to the sensitivity and spirit of the times, and allows accessibility to interlocutions from multiple devices.

In terms of content, the variety of sources and original and authorial productions make up the multiplicity of relationships with site-specific projects and programs - from partnerships with national and international networks to collaborations with artistic and cultural networks of the

2. The hypothesized implementation path

What digital experiences (DEs) do you create and how do they connect with the common ADRIJO platform?

The Local Virtual Museum of the Port of Ancona, in the context of the REMEMBER project is developed through the ADRIJO platform and through the path of 10 POI (Point of Interest), as better described below.

Regarding the ADRIJO platform, Central Adriatic Ports Authority will create and provide contributions to feed the following sections:

- **Common section** (2nd level of the platform): Central Adriatic Ports Authority will upload a selection of 9 contents, such as images, sound-videos and 3D and diagnostic data, realized ad hoc for the Remember project or collected/already produced in past events and adapted for the purpose of the VM. The contents selected and listed in the excel attachment will be able to give an overview of the main cultural and socio –economic characteristics of the Port of Ancona, thus introducing to the wider contents of the Local Virtual Museum, while at the same time, ensuring accessibility to all the themes for a wide audience.

All the materials produced will be uploaded in the cloud-based platform ADRIJO, and will be geo-localized.

- **Local section** (3rd level of the platform): this section will contain at least 10 further contents that provide the representation of the Virtual Museum of the Port of Ancona as described in the first chapter of the present document. The contents are elaborated for the specific purpose of the Virtual Museum, or in some case collected and adapted from previous events. The contents elaborated will be of the following typology: texts, images, sound-videos, 3d models and diagnostic data.

All contents will be uploaded to the ADRIJO platform and will be associated to a geo-location.

- **Path of the 10 P.o.I .:**

Central Adriatic Ports Authority identified 10 Poi (Point of Interest), namely 10 key spots in the area of the port of Ancona, that allow a real walk through the most significant elements, ranging from architectural heritage to places of current economies and professions. At each POI, at least 3 digital contents will be made available of the following typologies: texts, images, sound-videos, 3d models and diagnostic data.

The contents of the POI are accessible through the scan with the mobile phone of a logo (Adrijo or Remember) or a QRcode placed in a wayfinding sign (signage elements) that will be made available at each Poi (linked to the activity 4.2). These materials will however be uploaded in the Adrijo cloud base platform.

3. The disabled people as specific Target Group of visitors

Strategies and contents to be used for the disabled, with specific reference to blind people, mandatory since AF

The wide variety of languages used for the creation of the contents of the Virtual Museum of the port of Ancona allows the fruition by different target groups of visitors, including the disabled people.

In particular, videos and photos, with the help of short written descriptions, will be accessible to the deaf-impaired people, while interviews or audio-based contents will be accessible to visual-impaired people.

Moreover, it will be exploited the possibility provided the Adrijo platform to use integrated tool specifically developed for visual-impaired users, that consent the fruition of an alternative text automatically produced.

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Story telling of the virtual museum: collection and selection of themes and production of contents to form part of the virtual museum

Pp1 – Northern Adriatic Sea Port Authority

Work Package	4 “Knowledge and usability of cross-border heritage of Adriatic Italian and Croatian ports”
Activity	4.1.1 “Virtual Museum setting up”
Phase Leader	PP9-UNIVPM
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1. VM storytelling description

What is the theme, who is it addressed to, how do you develop the idea?

The PP1-VM related to the Veneto Port System will involve users in a narrative that enhances and relates the parallels between past and present of the Venetian ports, the maritime-port culture of Venice and Chioggia and their role in the Adriatic, as well as foreseen by the REMEMBER project.

The PP1 - VM should tell the heritage, tangible and intangible- of the ports and their hinterlands.

PP1 has already taken contact with other regional institutions and partners operating in the regional territory and it is currently defining the scope of the cooperation with all of them, such as:

- Fondazione Musei Civici di Venezia
- Venezia heritage Tower
- Marina Studi, Marina Militare di Venezia
- Veneto Region, Directorate for culture and sports
- Municipality of Venice
- State Archive of Venice
- Historical Archive of Istituto Luce-Cinecittà
- Historical Rai TECHE
- Fincantieri Foundation for the shipbuilding sector
- Accademia della Cucina Italiana
- Associazione UNESCO Giovani Venezia
- Grandi Molini Italiani
- Cereal Docks
- Cooperazione Piloti
- ASPO Chioggia

The general objective is to:

- develop an experience for the visitor that relates the contemporary culture to the past,
- tell about activities and crafts,
- illustrate routes and economies connected to the ports.

The leitmotif of the requested contents must be the narration of the role of the two Ports (Venice and Chioggia) over the centuries as a:

- place for the development of seafaring culture;
- economic development engine;
- gateway for transit for goods, people and ideas;
- workplace;
- architectural and artistic heritage.

The thematic focuses must allow the visitor to enjoy ad hoc produced contents and images and videos of the Venetian port system already available by the Port System Authority.

Throughout the history, some crucial places and moments for the setting up of the PP1- VM have been identified, and will be related from at least 20 contents. Here after some examples:

- -The origins of the 2 ports and their development and transformations over the centuries;
- (ADRIJO PLATFORM as Digital Experience) - the parallelism between the shipbuilding in the past (the Venetian Arsenal) and the shipbuilding at present Fincantieri
- (ADRIJO PLATFORM as Digital Experience) - the parallelism between special cargo handled in the past (Saint March Columns as a sort of project cargo in 1200) and special cargo handled today (project cargo and break bulk at present)
- (ADRIJO PLATFORM as Digital Experience) - the agribusiness industry and traffic in the past (Molino Stucky) and the same at present (Grandi Molini Italiani and Cereal Docks)
- (ADRIJO PLATFORM as Digital Experience) - specific trades in the past- spices in Venice and salt in Chioggia in the past and other today
- (ADRIJO PLATFORM as Digital Experience) - Jobs – Fishing in the past / Fishing at present by the port of Chioggia; Pilots in the past in Venice and Pilots today

- (ADRIJO PLATFORM as Digital Experience) - warehouses and Fondaci in the past and today

The PP1-VM may have a double level of explanation for students and citizens.

The goal is to enrich the visitor's experience with a reading that connects the contemporary to the past, tells about activities and crafts, illustrious routes and economies connected to the port.

The VM will have to give the user the opportunity to enjoy different types of information in an immersive environment.

PP1's VM will be accessible online. The fruition will take place:

- on the territory, outdoors (will feature geo-referentiated links to the sites where tangible and intangible heritage items are located in or originate from);
- within cultural and tourist bodies with which specific agreements will be made. At the moment, Marina Militare, Venezia heritage Tower and the Museo Laguna Sud di Chioggia do not confirm the availability in their premises, where the permanent exhibition should be set up.

So the user will be allowed to:

- explore the PP1-VM remotely, from the web or with a mobile application;
- have independent access contents when they are on places, by previously installing a free mobile application on their device;
- visit the PP1-VM in a physical installation, in a place chosen among the Ports of Venice and Chioggia's local partners.

2. The hypothesized implementation path

What digital experiences (DEs) do you create and how do they connect with the common ADRIJO platform?

Before the COVID-19 emergency the preliminary actions for the Remember tender was made and the public announcement was closed. By now the tender is in the authority pipeline of tenders to be launched. We work to launch it before the end of October. Cooperation with local authorities and museums is ongoing.

The Veneto Port System VM will directly put the content of POIs into the user's hands, who must be able to use them both remotely, while visiting the port or in spaces set up.

The Veneto Port System VM will directly put the contents into the user's hands, who must be able to use them both remotely, while visiting the port or in spaces set up.

The PP1- VM digital contents, through the narration enhance the parallels between the port's past and present, must be activated on the mobile visitor's devices with solutions such as, for example, markers, georeferencing, QRCode or other.

Each content of the PP1 - VM will include texts, audiovisual contents, sounds, virtual visits of the physical locations referred to, 360° photographic, digital reconstructions, 3D Models, 3D virtual reconstruction of landscapes, architectures and artifacts from the past.

All contents will be available in Italian and English.

3. The disabled people as specific Target Group of visitors

Strategies and contents to be used for the disabled, with specific reference to blind people, mandatory since AF

The PP1-VM will allow visitors to be involved without having to be present physically, allowing the access to the contents through digital media to all people, also to people living with disabilities, such as wheelchair users, the visually challenged and hearing impaired people.

The PP1-VM should enhanced accessibility and an active free-choice learning experience. Venice, Chioggia and their ports are difficult to access with even minor mobility impairments. PP1-VM should achieve accessibility and inclusion for diverse audiences by allowing virtual access to the non-accessible areas and contents.

The PP1-VM's start point is to recognize that it can be use different sense to experience and enjoy the contents. For the blind and visually impaired people, in particular, the sight is not the only sense: audio descriptions can help people to understand more about the contents. For people who are deaf or hard of hearing, a transcript of the audio should be available.

PP1-VM should be familiar with the Web Content Accessibility Guidelines (WCAG), developed by The World Wide Web Consortium (W3C), around the follow principles:

Content should be perceivable: On the web/app, PP1-VM will ensure at least one of these techniques: from providing acceptable size and contrast of text against background, to using images to display text, or providing transcripts for audio. The same principle will be applied at the physical installation that should take place among the Ports of Venice and Chioggia's local partners

Content should be understandable: The language on the PP1-VM should be simple, concise, direct welcoming, inclusive and informative. The website functionality and navigation should be obvious, consistent and predictable. To be inclusive, the language should address people directly, make them feel that they are being welcomed, and understandable

Content must be robust:

The web can be an incredible way for people with disabilities to access information and many other things. Conversational interfaces, chatbots for example are tools that have incredible potential, for even more frictionless interaction with other people and information.

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DELIVERABLE 4.1.1

PP2- Port of Ravenna Authority

Story telling of the virtual museum: collection and selection of themes and production of contents to form part of the virtual museum

1. VM story telling description

The first time we approached the issue of Virtual Museum and what to show in this tool we thought that the most peculiar content, very specific of the port of Ravenna, was that of the process through which the cultural identity of the port of Ravenna took shape: the struggle for access to the sea.

In fact, it is necessary to underline that, after the period of the Roman Empire, during which the Port of Classe was built to host the imperial fleet, Ravenna turned its back to the sea and in the following centuries Ravenna consolidated its sense of estrangement from the commercial and relational dimension that is typical of ports.

Within the REMEMBER projects it was decided to concentrate the story telling of the Virtual Museum from a turning point on the history of the Port, identified in the decision of Cardinal Giulio Alberoni, in 1737, to complete the works of connecting the city to the sea through the excavation of the so-called Corsini canal, until nowadays. The choice made in the early decades of the eighteenth century would have proved to be of great importance, because it would have helped to shape the ambivalence that is still constitutive of the relationship between Ravenna and the sea. This was a new beginning for the maritime dimension of Ravenna, a starting point of the development of the modern Port that accelerated during the centuries to arrive to nowadays.

The elements of the intangible cultural heritage on which we will focus are those that constitute the fundamental pillars of the cultural identity of the port city of Ravenna (timeframe 18th-21st centuries). In particular, we will therefore focus on the values of work and those of the economic enterprise. Moreover, an essential part of the construction of identity is given by the effort to control and bend nature and to reach and maintain access to the sea. Then the hydraulic engineering design documents will be searched, investigated and promoted.

The contents of the Virtual Museum are addressed to a wide audience as: citizens of Ravenna, stakeholders and port community, students of high schools and University. Then, the Virtual Museum and its applications will be available also to Delegations in visit at the Port (professionals, EU officials and port operators). The involvement of the audience will be done together with the Municipality of Ravenna, that is involved in similar initiatives, that are also financed through EU funds in the old “Town docks” of Ravenna. A partnership will be also established with other cultural institutions, as for example the Classis museum.

The aim of these partnerships with local stakeholders is to disseminate as much as possible the possibilities offered by the Virtual Museum and to use the best practices of other actors to build that tool.

2. The hypothesized implementation path

It will be possible to enjoy the Virtual Museum experience through the tools made available by the ADRIJO platform. This will allow users to consult the digital contents via website or by an app that will be free for download for everybody.

Moreover, the Port of Ravenna Authority foresees to install a touchscreen at his premises, in order to consult the contents directly at the Port.

Nevertheless, the touchscreen that should be installed will also serve as starting point of a physical path along the Port that everybody can perform (by feet or by bike) to discover all the themes and places presented in the Virtual Museum, thanks to an app that will present the topics as audio-guide when the users will arrive in the relevant places (beacon technology will be used for that purpose).

All the contents and tools that will be realized within the REMEMBER project will use as platform for the contents the ADRIJO tool and will be fully interoperable.

3. The disabled people as specific Target Group of visitors

All the contents of the VM will be fully visible and accessible for disabled people. Moreover, also the touchscreen that will probably be installed at the Port of Ravenna Authority premises to consult all the contents of the VM will be conceived to be user-friendly also for disabled people.

There will be also videos and sounds through which blind people will be able to enjoy the contents of the Virtual Museum.

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Story telling of the virtual museum: collection and selection of themes and production of contents to form part of the virtual museum

Pp3 – Port Network Authority of the Eastern Adriatic Sea

Work Package	4 “Knowledge and usability of cross-border heritage of Adriatic Italian and Croatian ports”
Activity	4.1.1 “Virtual Museum setting up”
Phase Leader	PP9-UNIVPM
Deliverable	Del 4.1.1 “Story telling of the virtual museum”

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1. VM story telling description

What is the theme, who is it addressed to, how do you develop the idea?

As already outlined in D3.1.5 the main protagonists of the Eastern Adriatic Sea ports' Virtual Museum (VM) will be the people that in, and with the port had a work relationship; however, also the "ordinary" people, whose life and fortune crossed that of the port will be featured in it.

To achieve this objective, a cultural itinerary of Industrial Tourism linked to the port's architectural landmarks (mainly situated in the Old Port and the Old Shipyard area), its historical machinery and the main professions linked to it, will be developed through some selected contents. The aim of the VM is to tell the stories of stevedores, labourers, crane and machinery operators, manufacturers and shippers during the 18th and 19th centuries. Contents featured in the VM will be mostly audiovisuals: pictures, videos, technical drawings coming from the Historical Archives of the Port Network Authority and other local public and private institutions collaborating in the project. Short interviews to former employees and a virtual tour into the old workplaces, today destined to return to the city and be open to the population and tourists, may also be included into the VM.

This journey is ideally conceived in parallel to a smaller itinerary to be hosted in the Port Network Authority's headquarters whose tower, the adjacent buildings and hangars represent a peculiar example of industrial architectural heritage themselves.

The same contents will be fine-tuned and told in a different way to the addressed audience that will be able to opt for a tailor-made itinerary by choosing whether to identify as one of the priority user groups the VM should be targeted to: local citizens (i.e. general population users), students, cultural tourists, or children.

The idea will be developed with the support of a history and cultural heritage expert, taking as a starting point the already existing collections and initiatives built around such pieces of the port-city's industrial and labour past, which have already showed to have huge potential towards stimulating models of sustainable and conscious tourism. Taking into account the CoViD-19 pandemic impacts on this sector, the VM might also represent an opportunity to improve the planning and enjoyment of optional visits in situ for specific target groups (e.g. schools, numerous groups etc.).

2. The hypothesized implementation path

What digital experiences (DEs) do you create and how do they connect with the common ADRIJO platform?

The Eastern Adriatic Sea ports' VM will be accessible online and optimized for access through mobile devices. At the moment, the partner does not envisage making available in its premises, devices through which the VM may be visited. However, the local VM will feature geo-referenced links to the sites where tangible and intangible heritage items are located in or originate from. In parallel, informative panels could be positioned in the places where tangible heritage items (buildings/machinery) are located to link to the corresponding sections of the VM. Furthermore, whereas digital and/or online resources referred to an item/category of items included in the VM are already available, the VM itself may also be useful in directing visitors to existing websites, as well as providing further information concerning access to the cultural sites/institutional premises/physical museums.

As to digital experiences (DEs), the local VM will include stories about the contents selected by PP3 and which will delve into some of the themes already addressed in the ADRIJO platform. Such stories are to be told through texts (captions or interviews) responding to the characteristics described in D3.1.3 – Technical specification tender of the VM, notably paragraph 1.1 and D3.1.4 – Guidelines for the storytelling of VM contents. These texts will be worded and presented differently according to the targeted audience, as well as taking into consideration the overall objective to ensure accessibility to individuals with sensory impairments. In addition to this, the local VM will feature mostly audio-visual contents (images,

audio/sounds and videos) produced in accordance with paragraphs 1.2 and 1.3 of D3.1.3. Users will be given the opportunity to experience, through geo-referenced spots, virtual visits of the physical locations referred to.

The items included in the Eastern Adriatic Sea ports' VM will be indexed according to keywords linking them to related contents hosted in the ADRIJO platform and include direct links to it.

3. The disabled people as specific Target Group of visitors

Strategies and contents to be used for the disabled, with specific reference to blind people, mandatory since AF

For blind and visually impaired people to be able to autonomously access the contents of the Eastern Adriatic Sea ports' VM, a selection of texts will be made available in an extended audio version, accompanied with sounds able to give context to the story told.

In this regard, a useful reference may be represented by the Handbook developed within the Interreg Central Europe project COME-IN!, focusing on accessibility to (physical) museums: <https://www.interreg-central.eu/Content.Node/COME-IN/COME-IN-HANDBOOK-ENG.pdf>

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Story telling of the virtual museum: collection and selection of themes and production of contents to form part of the virtual museum

Pp4 – Intermodal Transport Cluster

Work Package	4 “Knowledge and usability of cross-border heritage of Adriatic Italian and Croatian ports”
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1. VM story telling description

What is the theme, who is it addressed to, how do you develop the idea?

The Port of Rijeka is located on the North Adriatic, in the Kvarner Gulf, and is the largest Croatian port. Throughout its history Rijeka has always been a favorable port and intersection of land and sea routes.

The medieval port, the site of today's Školjić, was the site of a lively trade exchange, but the turning point in the development was the charter of Emperor Charles VI. dated 1717, declaring free navigation by sea, and a charter issued in 1719, granting Rijeka and Trieste the status of free ports which has allowed them to become key ports for the expansion and strengthening of the Habsburg Trade Policy, the main ports for import and export, as well as connections with all Mediterranean ports and the majority of ports across the world.

The main theme of our museum is industrial history of Rijeka. It will be discussed through 9 subcategories that should give a rounded picture of our city. We mainly address it to citizens, students, visitors and tourists. We wish to increase their knowledge of our city's history and heritage.

The subcategories will be:

- Crafting, tools
- Religions, gods, sea mythology, fairy tales
- Food and recipes
- Import/export of goods, traffic
- Immigration/emigration of people
- Fishing
- Lighthouses
- Ship design, shipbuilding, ship maintenance
- Other monuments

We have developed this idea since all of above-mentioned subcategories are important pieces of Rijeka heritage and should be presented and protected.

2. The hypothesized implementation path

What digital experiences (DEs) do you create and how do they connect with the common ADRIJO platform?

Virtual museum is developed through the Adrijo platform and 9 subcategories that will be presented. For each of subcategories we will produce short video, quality photo and text. There will also be a video and 4 quality photos for the introductory part.

3. The disabled people as specific Target Group of visitors

Strategies and contents to be used for the disabled, with specific reference to blind people, mandatory since AF

Elderly and disabled people will be able to access all information from their computers and smartphones. For deaf people, short textual description, photos and videos should show the richness of our heritage. For blind people, sounds recorded in videos should at least partially help to enjoy our virtual museum.

DELIVERABLE 4.1.1

Storytelling with the virtual museum: the collection and selection of themes and the production of content to form part of a virtual museum

Pp5 - Dubrovnik Port Authority

Work Package	4 “Knowledge and usability of cross-border heritage of Adriatic Italian and Croatian ports”
Activity	4.1.1 “Virtual Museum setting up”
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1. VM storytelling description

What is the theme, who is it addressed to, how will you develop the idea?

What is the theme?

1. **The foundation of the city of Dubrovnik:** The intrusion of barbaric tribes (The Avars and The Slavs) and the destruction of the city of Epidaurus (present-day Cavtat); the arrival of refugees from Epidaurus to the small island of Ragusa; the founding of a settlement and the start of its fortification.
2. **Connection with the mainland and the fortification of the city in the 12th century.**
3. **Formation of a harbor: The city walls, forts, the Kaše breakwater in the 15th century**
4. **Dubrovnik's trade:** The development of maritime and land trade
5. **City administration:** the Byzantine rule, the Venetian rule, the Hungarian rule, the Republic of Dubrovnik, relations with the Ottoman Empire.
6. **The politics of the Republic of Dubrovnik**
7. **Dubrovnik's fleet enters the waters of the Atlantic Ocean in the 16th century**
8. **Dubrovnik's merchant fleet:** 280 ships
9. **Dubrovnik's seamen:** A story about Miho Pracat (1522 -1607); the Ohmučević family from Slano, Vice Bune from the island of Lopud, in the 16th century, and the Sagroević family from the island of Šipan.
10. **Dubrovnik's shipyards and shipbuilders**
11. **Types of boats in Dubrovnik's fleet:** ormanica, barcusium, koka, galleon, carrack
12. **The boat crew;** The captain-owner (*patrun*), *nostromo*, *nokjer* (boatswain - captain's assistant in charge of navigation), the pilot, *kamerot* (cabin boy, valet), *kogo* (the cook), *gvardijan* (the guard), *mladić* (lowest-ranking seaman, in rank above the deck boy), common mariners, deck boys (mariner apprentices)
13. **Production and trade of salt**
14. **Renowned artists from Dubrovnik** (Nikola Božidarević, Vlaho Bukovac)
15. **The maritime language (*lingua franca*):** the universal language among the Mediterranean mariners; the traditional wooden boat terminology (boat Jared given as example)
16. **Dubrovnik's maritime and caravan (land) routes**
17. **Fishing**
18. **The city fortification:** city walls, defense forts
19. **Design of Dubrovnik's ships:** the carrack as an example

20. The carrack as the metaphor for the city of Dubrovnik

Who is it addressed to?

1. **The citizens of Dubrovnik** – Interpretation of Dubrovnik's maritime heritage is aimed at the very citizens of Dubrovnik who are the heirs of their maritime culture. By becoming acquainted with their heritage, the people of Dubrovnik gain competences to interpret it to their guests, the visitors of Dubrovnik.
2. **The guests (tourists)** as well as all other types of visitors of Dubrovnik who will for the first time have the opportunity to learn about the maritime history and the history of the city of Dubrovnik by means of modern technology (virtual reality and augmented reality).
3. **Handicapped visitors** (visually impaired, blind, auditorily impaired, motion disabled) who will have the option of an adjusted approach to communication.

How will you develop the idea?

1. **Textual part of the interpretation:** Texts will be composed for all topics of interest. These texts will be composed in a rhetorical manner so as to draw attention and provide the most interesting information in a concentrated and detailed manner, adjusted to be well comprehended by all categories of visitor.
2. **Drawings and other types of visual displays in the function of interpretation:** Drawings of traditional types of Dubrovnik's wooden boats will be used; a map of the city of Dubrovnik, visual depictions of its fortifications, maps of maritime and land trade routes.
3. **Audio interpretation:** The audio interpretation will be recorded in an MP3 format, in a number of selected languages.
4. **VR (virtual reality) or AR (augmented reality):** The most interesting visual attractions and artefacts (ships, ports, fortifications, museal objects) will be depicted through VR or AR.
5. **Scale models for tactile communication:** The following scale models will be constructed: the model of the city of Dubrovnik, a model of Dubrovnik's representative

ship – the carrack – for the visually impaired visitors, in order to add to tactile communication to the museal experience.

2. The hypothesized implementation path

What digital experiences (DEs) will you create and how do they connect with the common ADRIJO platform?

The goal is a realization of a virtual, 3D construction of a carrack.

Although the object is immaterial or illusive, the 3D reconstruction is a real construct and the amount of work is as extensive as the construction of a real object. Namely, during the construction process each piece is formed separately and is then assembled into larger construction units.

This is a repeated (virtual) construction which upon its completion enables the realization of a number of variants. It is constructed at a scale of 1:1, from the original (virtual) material of a suitable mass, density and external texture. The pieces are virtual and the visitor can rotate them in virtual space, on the screen, and assemble them together. The end result, in this case, is a virtual boat as the basis for further work.

At first time what is possible with the virtual carrack is conventional: layouts, cross-sections become available (legible) quickly and in unlimited amounts. The entire procedure of manual construction is digitalized and there are no more templates (in case the construction of a faithful replica of a small souvenir carrack is needed, these can be made at any scale). Digitalization is very important because it enables low-cost processing in line with new discoveries.

It is possible to locate the virtual carrack, by means of projection, into a central space of the museum. In this way we can also present the procedure of construction and assemblage in such a way so that each part or the whole can be depicted and observed from all sides (3D projection). There can also be an animated video of the construction process. The visitor can search in detail each specific part at will.

Let us envision a carrack being rotated in the museum space in front of the visitors. We plan for the visitors to eventually be able to also enter this virtual ship by means of their "data suits," and then also sail through this virtual space from any starting point in the world.

The basis for this endeavor is the construction of a 3D model of the carrack in one of the regular or specialized programs for construction. In order to realize this project, we need all

existing and available data on the construction of the carrack. Based on frame templates, a 3D virtual frame will be modeled (or recorded with a laser, digitized), and based on this frame we will be able to have a new (physical) machine-made frame that will be, printed by a 3D printer, a faithful copy of a handmade piece.

The presentation of the virtual carrack will be connected to the Adrijo platform.

The Project aim

An attractive and innovative touristic product with great commercial exploitability which is the result of cooperation between the Port Authority Dubrovnik and commercial partners.

Benefits to the partners/associates from participation in the project:

Partners will demonstrate their capacities to contribute to the development of innovative commercial products, new brands and the commercial exploitation of (in)tangible cultural heritage, notably in the field of cultural and sustainable tourism.

Commercial partner(s)/Contractors will benefit from the knowledge transfer resulting in new brands, new products, high quality jobs, successful businesses, better goods and services and sustainable development.

Expected impact(s) of the project:

The development of cultural tourism and the sustainable development of local communities. As a pilot project in the field of the promotion and commercialization of national cultural heritage, this project will inaugurate a new mindset of the presentation of cultural heritage and its potentials for the market and local and national communities.

Development of a new brand in tourism.

Research activity generates knowledge and technologies that yield high quality jobs, successful businesses, better goods and services and more efficient production and management processes.

Conformity of the impact with strategic development plans at national, regional and municipal levels:

The development of cultural tourism is one of the key elements of strategies of sustainable development at all levels applicable for this project: municipal, regional and national.

Experience in preparation and implementation of similar projects:

Our partner is Prof. emerit. Joško Božanić (University of Split) who is an expert in cultural studies and maritime heritage. He was the head of *Falkusa* boat reconstruction project and has organized Croatian maritime heritage world promotion (Expo 98 in Lisbon in 1998; World sea festival in France (Fête Internationale de la mer et des marins, Brest 2000, 2004, 2008, 2012; Regata Storica, Venice 2005, 2006); Sea festival Oslo (2014); XII Encontro de embarcações tradicionais de Glicia, Cabo de Cruz 2015; Navalis – Boat Festival, Prague 2017; Wooden Boat Festival, Port Townsend, USA 2020). He was the head of several interdisciplinary scientific maritime heritage projects: Studia Mediterranea – Interdisciplinary research; Halieutica Adriatica – Philological and anthropological research of Adriatic culture; Adriatic Tale – Interdisciplinary research of Adriatic narratives. He is the head of the Maritime Heritage Association which was a partner in IPA 2010 application for the project Virtual Adriatic Museum (Virtual Adriatic Fishing Museum segment). The project leader was University of Bologna, but the application was not accepted.

Consultancy needs in preparation and/or implementation of the project:

IPP consultancy

Market research consultancy

Marketing consultancy

3. The disabled as a specific target group of visitors

Strategies and contents to be used for the disabled, with specific reference to blind people, mandatory since AF

The specific target group of visitors are blind or visually impaired persons. The lack of visual communication will be compensated through audio and tactile communication.

Audio communication

Visually impaired visitors will have a specially designed story they can hear from their guides or in a recorded, MP3 format, with a number of languages to choose from.

Tactile communication

Visually handicapped visitors will be offered a scale model of the 19th-century carrack that could be disassembled in a way so its interior can be explored by hand as well. By means of touch, the visually handicapped will be able to learn about all the details of this historical boat. In other words, the audio information will be complemented by tactile sensation.

DELIVERABLE 4.1.1

Story telling of the virtual museum: collection and selection of themes and production of contents to form part of the virtual museum

PP8 - NATIONAL MUSEUM ZADAR

PP6 – PORT AUTHORITY ZADAR

Work Package	4 “Knowledge and usability of cross-border heritage of Adriatic Italian and Croatian ports”
Activity	4.1.1 “Virtual Museum setting up”
Phase Leader	PP9-UNIVPM
Deliverable	Del 4.1.1 “Story telling of the virtual museum”

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1. VM story telling description

What is the theme, who is it addressed to, how do you develop the idea?

Main theme of our VM will be the historical development of Zadar port and its connections with the other Adriatic ports.

As our Virtual Museum is going to be located within the new building of Port Authority Zadar, the best way to present our main theme by a video. Video will be some 10 to 15 minutes long and will include many of the important stories that are closely connected to Zadar and its port. First part of the video will be a short historical development of the city and the port. It will start with a scene that shows the first stone-age citizens of Zadar who are entering the port and making the first settlement. Scene will be accompanied with some traditional music from Zadar area. After the initial scene video will move forward in time to the Middle-Ages and will show the city as it looked back then, with the help of digitalized models of the city from that period. One of the most famous writers from Zadar, Petar Zoranić, will be played by an actor in an old church. This scene will show him at the table, writing a history book of Zadar. After that there will be some scenes from the history of Zadar that are depicted on various old paintings and photos. Scenes from the older photos will be filmed again from the same position so the two images will overlap and show the changes in the city and port. After those scenes there will be some interviews with various interesting people from Zadar. They will each talk about different topics like history, fishing, boat-building and sailing, sports, etc. Video will end with the scenes from the new port in Gaženica, so it will connect old port and the new one.

A part from video, our external expert will create photo-book that we are also planning to upload on ADRIJO platform. Photo-book will mostly contain old photos and will be a good way to see how some parts of the port looked in various time periods.

Other contents, that video will not feature, will be in form of texts and images.

We also plan to have digitalized models of the city, the port, and old wooden boats.

Currently we are working on acquiring models of the city. We plan to make some models of old boats but we will have to see if we will be able to do that in terms of Port Authority and National Museum budgets.

2. The hypothesized implementation path

What digital experiences (DEs) do you create and how do they connect with the common ADRIJO platform?

All of our digital experiences will be connected to ADRIJO platform. The main idea is to have video about the history of Zadar and its port. Video is currently under development. Apart from video, other contents will be presented with texts and images. Images will mostly be old photos that are closely connected to the port, accompanied with textual descriptions. Models of the city and old wooden boats will also be connected to ADRIJO platform, but the level of details of the models will be in close correlation to Port Authority and National Museum budgets.

3. The disabled people as specific Target Group of visitors

Strategies and contents to be used for the disabled, with specific reference to blind people, mandatory since AF

Disabled people will be able to experience VM through the ADRIJO platform. Video will be narrated so that even blind people will be able to experience it. Scenes in the video without the narration will be accompanied with traditional music from the Zadar area. Narration, music and some nature sounds like Sea organs will form a unique experience for the blind people, so that they also can enjoy the video-presentation of the historical development of Zadar and its port. Apart from video we hope that we will be able to acquire 3D printer so that we could make some 3D models of old wooden boats, or even a small model of the city or some parts of the port. That will be the great asset to our VM because blind people could experience the appearance of the old wooden boats.

DELIVERABLE 4.1.1

Story telling of the virtual museum: collection and selection of themes and production of contents to form part of the virtual museum

Work Package	4 “Knowledge and usability of cross-border heritage of Adriatic Italian and Croatian ports”
Activity	4.1.1 “Virtual Museum setting up”
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1. VM story telling description

What is the theme, who is it addressed to, how do you develop the idea?

What is the theme?

- I. HISTORY
1. Etymology of the word gaeta falcata and the Mediterranean context of this kind of a fishing vessel
 - Story about Caieta, nurse of Achillean hero Aeneas from the Trojan war and the founder of Rome. The town Gaeta was named after Aeneas' nurse, and it is the origin of the name of the boat.
 - Arabian origin of a name falcata via the Greek language
 - Comparison of a Komiža falcata and Maltese "Ferilla" boat
2. Diomedes' Route – the oldest trans Adriatic route
3. Benedictine trans Adriatic route
4. The encounter between the Pope Alexander III and the Komiža fishermen on the island of Palagruža
5. Regatta falcata from Komiža to Palagruža – one of a kind in the world
6. Historic documents about the fisheries
 - Report to the Doge of Venice on the catch of three million pilchard in a single night
 - Draconic punishment for the fishermen who caught fish on the Palagruža island
 - Letter of the Komiža fishermen to the Council of the Wise in Venice
 - The attack of the Venetian war galley on the falcata and the murder of a priest
 - "Scanadalous free behaviour" of the Komiža fishermen
 - Austrian authorities permit fishing on the Palagruža island
 - "Aristocracy of the fishing" in Komiža
 - Fishing armada of the island of Vis
 - New era in the history of fishing on the Vis island
 - Komiža as fishing mecca of the Adriatic

- Komiža fishermen as world pioneers in the fish processing industry
- II. SHIPWRECK OF THE LAST FALCATA
- III. ARS HALIEUTICA – INTERDISCIPLINARY RESEARCH AND CONSTRUCTION OF FALCATA
- Structure of falcata
 - Boat lines
 - Building a half model
 - Language, oral tradition, fishermen language – lingua franca, nomenclature of falcata
- IV. WORLDWIDE PROMOTION OF FALCATA
- Building and launching of a replica of historic falcata „Comeza-Lisboa“
 - World exhibition EXPO 98 in Lisbon, 1998
 - Promediterranea – in Palamós (Spain), 1998
 - Brest International Maritime Festival, Brest 2000, 2004, 2008, 2012
 - Regatta storica, Venice 2005, 2006
 - Forbundet Kysten Landsstevne - Bicentenari of the Norwegian Constitution, Oslo 2014, Festival of the sea of the Scandinavian countries on 200th Anniversary of the Norwegian Constitution
 - XII meeting of traditional boats of Galicia in Cabo de Cruz, Galicia, Spain, 2015.
 - Navalis, boat festival in Prague, Prague, May 2017.
- V. FALCATA IN THE VIS ARCHIPELAGO UNESCO GLOBAL GEOPARK
- Sea geopath by falcata
 - ☐ Komiža –city of volcanic origin (Komiža bay – south coast of Vis)
 - ☐ Biševo – Poseidon stone library
- VI. FALCATA HERITAGE FOR THE FUTURE
- Baby boat – falcata
 - The School of Falcata

Who is it addressed to:

1. Citizens of the island of Vis – Interpretation of maritime heritage addresses all citizens of the island as heirs to the maritime heritage
2. The children and the youth – making old customs and heritage become attractive for kids and students, especially if presented via interactive and virtual technologies
3. Guests (tourists) and all visitors of the island Vis – Virtual presentation will enable all visitors of the island to get familiar with the maritime culture of the island Vis via virtual presentation. Special focus is on off season tourists.

4. The widest audience – global audience who will discover a story about Falcata via ADRIJO web platform
5. The disabled guests (reduced mobility, visual and hearing impairment) who will be offered a tailored communication approach. For the blind and those with visual impairment, a special model targeted at the tactile communication will be at disposal. For those with hearing impairment, texts, drawings, and photos will be prepared.

How do you develop the idea?

Narrative part of the interpretation:

1. Textual part of the interpretation will be designed in line with the rhetorical lines of communication. Texts will be written in a popular way for the widest audience, nevertheless with lots of attractive information based on historic documentation.
2. Drawings and other kinds of graphic presentations in the function of interpretation. The plan is to make drawings of boat lines, her structure, nautical and fishing equipment. Numerous old black and white photos will be at disposal. The most attractive photos will be chosen from the ARS HALIEUTICA archives, covering all relevant themes.
3. Video presentations
The audience will be offered a few short movies and video clippings showing a historic boat in a historic context, as well as clips including presentations at the world maritime festivals.
4. Audio interpretation
A story about falcata will be available in a few languages.
VR (virtual reality) or AR (augmented reality): Presentation of the most attractive visual attractions and artefacts (boats, ports, fortifications, museum artefacts) via VR or AR technology
5. Models for tactile communication: Models of falcata will be made for people with visual impairment.

2. The hypothesized implementation path

What digital experiences (DEs) do you create and how do they connect with the common ADRIJO platform?

The goal is to create a virtual 3D model of a boat.

A half model of a falcata will be made in a scale ratio of 1:10. It will be made based on the existent comparative research studies of a few recent falcata boats, that were conducted in a period

1986-1992. The half model will be used as a basis to extract the correct boat lines, and to obtain a virtual representation of her shape.

Although the object is nonmaterial, it nevertheless presents an equally comprehensive workload as constructing a real object. In the creation process, each part is being shaped and then arranged into larger construction parts, with the final goal of creating a virtual falcata boat.

This virtual construction enables realization of numerous variation possibilities. It is being constructed in a scale ratio 1:1 from the original (virtual) material with respective weight, density, and exterior texture. Given that all the parts are virtual, they can be rearranged on screen into units according to one's preferences. The final product in this case is a virtual boat as basis for future work.

The first option to use this virtual object is conventional: drawings, cuttings become available (readable) with no speed or quantity limitations. The entire handwork process is digitalized and has only few templates (if necessary, templates can easily be created, in any scale ratio, for example the construction of the most authentic small souvenir model of falcata boat). Digitalization is of essential importance since it enables a low-priced processing in line with the most recent breakthroughs in technology.

It is possible to display the virtual falcata in the central museum space using projectors, thus presenting a process of design and assembly in a way that each part and the whole can be shown and viewed from all sides (3D projection). In a similar fashion, a process of construction can be laid out. A visitor can browse the details on each part in more depth, according to their interests. Let us imagine a falcata boat rotating in a room in front of the visitors. In perspective, visitors will be able to embark on a virtual boat via "data-suits", and then even experience Virtual Reality Sailing Simulation, from any place in the world.

The starting point for this task is to create 3D model of falcata boat in one of the ordinary and specialized construction softwares. To make this possible, one requires all the available data on the falcata construction. Based on a template of boat frames, a model (or laser, digitalized footage) of 3D virtual frame will be made that can be a mould for the manufacturing of a new (real) frame that will be produced in 3D printer technology as an exact fit-compatible version of a handmade piece. In terms of equipment, there will be adaptation of entire VT material for responsive viewing on all physical media (desktop computers, tablets, mobile phones ...), and VR glasses. The technological development to be relied upon is virtual tour.

Also, a 360° VIDEO during navigation through regatta called „Rota Palagruzona“ will be produced. It will include recording of various 360° video scenes, recording of soundscape, as well as detailed post-production, colouring, and digital processing of multiexposure materials. Adaptation for responsive view and integration within the virtual tour will be ensured. In terms of equipment, we will rely on multimedia display equipment, indoor and outdoor totem (up to 55" screen, unbreakable glass, capacitive touch), VR glasses. Regarding the technological tools and solutions, adjustments for viewing 360° videos using VR glasses (fully immersive) will be made.

Presentation of a virtual falcata, as well as a 360° VIDEO of a regatta will be uploaded to ADRIJO platform.

3. The disabled people as specific Target Group of visitors

Strategies and contents to be used for the disabled, with specific reference to blind people, mandatory since AF

The cloud-based platform will allow the accessibility to the cultural contents also from remote locations and by virtual tourists, contributing to enhance the accessibility of the cultural destination.

A careful use of sounds, pictures, videos, and words will be used to adapt to different kinds of disabilities (visual and hearing impairment). A mix of all four media languages will be relied upon. Audio elements: creation of soundscape (recording and processing of ambient authentic sounds and implementation inside 360° scenes); recording and synchronizing narrative audio and implementation within a virtual display (specially designed story that one can hear from the guide or via MP3 device with an option of choosing the language of a story).

Tactile communication: For the visually impaired people, a model of a boat will be made, that can be dismantled, and her interior becomes accessible through the sense of touch. Likewise, thanks to tactile encounters, visually impaired people will be able to "see through touch" and learn more about all the details on this historic boat.

Finally, physical locations within the port site to display VM will be chosen respecting the accessibility for the disabled.