RESISTANCE Project

WP3 – Act. 3
Awareness raising and engagement

Deliverable Number D.3.3.5

Virtual museum - IWP platform

Final Version of 26/06/2023

Project Acronym	RESISTANCE
Project ID Number	10419754
Project Title	Raising Awareness of Maritime Spatial Planning Importance
Priority Axis	Environmental and cultural heritage
Specific objective	3.3
Work Package Number	3
Work Package Title	Clustering thematic activities
Activity Number	3.3
Activity Title	Awareness raising and engagement
Partner in Charge	University of Ferrara – PP4
Partners involved	All partners
Status	Final
Distribution	Public

INTRODUCTION

The main purpose of creating this virtual museum of the resistance project was to bring the general public closer to an often-little-known reality, the protection of the sea. The only system that bathes and touches kilometres of coastline that is undergoing sudden and long-term changes due to the poor management of natural resources and the bad behaviour of the human component. A difficult subject to discuss due to the variety of topics covered and the scientific nature of the content itself; the aim was therefore to translate these contents in order to make them more understandable and also interesting to as many people as possible.

Furthermore, the challenge of the virtual museum project was also finding a format that could combine different uses of this information: the availability of it for everyone, therefore the possibility of being consultable but also downloadable; attention to understanding these topics (language, tone, style of exposition…); the portability of them (and therefore, the format of the podcast).

The Resistance initiative contains projects of a multidisciplinary nature and which come from different contexts; and hence also the intention of being able to find junctions between these projects that could converge into overall macro themes that can be summarized for dissemination to the general public outside.

The contents published within the virtual museum are scientific news and data collected from local realities and from the institutes involved in the projects.

The starting point and reference for the elaboration of the contents are the seven Interreg Italy-Croatia programs carried out between 2019 and 2021 and routed within the RESISTANCE project (DORY, ECOMAP, ECOSS, ML-REPAIR, NET4mPLASTIC, SASPAS and SOUNDSCAPE).

The RESISTANCE programs have dealt with different research fields, all with a focus on the Adriatic Sea:

• DORY: promotion of sustainable management models for aquacultures
• ECOMAP: development of better environmental strategies in collaboration with local ports
• ECOSS: introduction of the ECOAdS for the integration and monitoring of ecological and demographic research in the Adriatic
• NET4mPLASTIC: data collection on the distribution and composition of microplastics along the Italian and Croatian coasts of the Adriatic Sea
• ML-REPAIR: development and management of shared intergovernmental solutions on marine pollution
• SASPAS: conservation and protection of algae in the Adriatic Sea through innovative anchoring and monitoring systems
• SOUNDSCAPE: implementation of a submarine noise monitoring network and evaluation of its impact.

Given the multidisciplinary nature of the programs presented, it has been established a common element to explore as a narrative reference for the development of the museum platform: the relationship between man, anthropic activities and the sea (lato sensu).
The contents of the seven RESISTANCE programs have been included in macro-categories in order to group the different natures of the projects into thematic areas.

The thematic divisions are:

1. Marine biodiversity:

The topics dealt with in this category touch delicate points and very close to the sensitivity of the visitor in any case: life under water. Of course, the issues related to biodiversity and its endangerment by human behaviour in the Adriatic Sea were investigated. Within the category "marine biodiversity" it was decided to divide the flora from the fauna; firstly, we investigated the importance of algae in the Adriatic Sea, their state of health and possible difficulties and the

procedures put in place by the partners of the Resistance project to safeguard this invaluable plant heritage.

Subsequently, the situation of the animals in the Adriatic Sea, their state of health and their endangerment due to the consequences of anthropic behaviour was investigated. Sea turtles and Adriatic cetaceans were discussed, what are the main concerns about their condition, what are the human actions that endanger them and what to do to avoid them. Furthermore, the partners who actively work in this research and protection sector were involved: it was explained what types of activities are put into practice, how the waters of the Adriatic Sea are monitored and how rescued and cared for animals are set free. Furthermore, an interesting aspect touched upon was the attention to the dissemination of good practices to be maintained and the results of monitoring and marine fauna protection activities.

2. Marine litter:

The topics covered here include naturally include marine pollution of the Adriatic Sea and the repercussions that these anthropic activities have and will have on marine biodiversity. Furthermore, it was decided to also include underwater noise pollution in this category, a little-known topic, fascinating to deal with and with harmful consequences as much as marine pollution from litter.

3. Microplastics

To be considered separately from point 2 due to the typical characteristics of the phenomenon; the division of this category from that concerning the marine litter was made consciously given the importance of the phenomenon of microplastic pollution. In fact, these have been defined on the basis of commonly accepted parameters of size and type; moreover, direct experiences of those among the project partners who work and do research on this highly topical issue have been reported.

4. Culture (Underwater archaeology)

In the "culture" category it was decided to deal with one of the aspects probably least known by the general public: underwater archaeology. This discipline has been well defined within the documentation produced for the virtual museum: underwater archaeology, as well as being an extremely fascinating, scientifically advanced and highly important discipline, is placed at the service of research institutes and administrations to raise awareness among public opinion on what is to all intents and purposes a cultural heritage shared by all the populations that touch the Adriatic Sea. Furthermore, the good practices to be maintained in case of sighting of finds or traces of archaeological heritage were investigated, firstly defining what is meant by cultural heritage.

CONTENTS

For each point, a broad explanatory offer has been structured based primarily on the material produced by the partners and received in the shared drive. Texts have been produced accompanied by the multimedia material presented (photos and videos) with additions made together with the representatives of the various collaborating realities or reviewed by them.

Furthermore, the content proposal has been enriched with the production of a thematic podcast *(Underwater Archeology* and *Marine biodiversity*). The format presents itself as the "official podcast" of the project and is focused solely on the contents of the virtual museum, embellishing them with additions and interviews.

In this regard, the podcast presents itself with episodes of 10-15 minutes max. and hosts a guest representing one of the partners.

If on the one hand, therefore, the data and results of the project are exposed through textual contents and enriched by multimedia material, on the other hand, thematic insights are offered together with those who actually carried out the research, thus proposing a greater proximity between users and scientific personnel.

Particular attention was paid to the use of language in the production of textual contents and in the realization of the podcast episodes.

In fact, by converging various research and intervention projects of different nature into common thematic groups, the anticipated risk was that of mixing different and highly specific terminologies which could cause uncertainty and difficulty in understanding the themes in the visitor.

TARGET

The target to which the virtual museum refers is the general user. It is not proposed to scientific or academic staff but to the general public more or less informed about the initiatives and topics covered in the RESISTANCE project.

This target, although very broad and articulated, nonetheless shares some characteristics that it is necessary to keep in mind in terms of language: it is not a general public curious about dissemination; this audience has at least a basic knowledge of scientific elements and sectoral languages; it is interested in the social and cultural aspects of scientific research.

In this regard, the contents have been drawn up in a precise but not complex language, without taking previous or individual knowledge for granted.

The language used is, primarily, English; the Croatian and Italian language would be used in the future if there is a willingness from the partners to translate the contents or to offer the translations for inclusion in the platform.

Content formats

1) Texts

The texts investigate specific terms, keywords, characterizing the RESISTANCE programs with the aim of building a common narrative for each of the four themes explored.

The textual contents propose the following characterization:

• They are included in a clear division by theme, without forgetting the common thread ("man and the sea") and allowing for possible hybridization with other themes and projects;

• Clear intermediation: always pay attention to the language used and the reference target;

• Indicative reading length of 10-15min;

• Themes develop from the projects involved and the data provided, and then expand to other related concepts.

The use of a pdf reader integrated in the pages of the virtual museum helps the user of the text to navigate through it and to modify it momentarily during the read by underlining phrases or key elements, adding personal notes, printing the text and its download.
It was decided to guarantee the download of the text sheets in pdf format for anyone browsing the virtual museum.
This choice was made for coherence with the purpose of the project, which is to guarantee anyone who uses the platform a better understanding of these complicated and articulated topics.
The text cards were created using the templates made available in the Resistance project hub.

2) Podcasts

The podcast format is used to propose content that is structured as a story capable of exploiting the potential of the audio medium.
It explores themes that lend themselves to being developed in this way both for the possibility of building the product starting from a narrative structure ("characters", goal to be achieved, antagonists, narrative development, etc.) and for allowing "live" participation in insight into the topic.

The podcasts all feature:
• Title;
• Common jingle on opening and closing of the episode;

• Indicative length of 10-15 min;
• Sound interludes and audio effects.

Compatibly with the availability of the project partners, the guests of the episodes were contacted, questions related to the topic discussed were formulated and they were administered in two ways:

1) direct interview; through a video call recorded using Zencastr, an online podcast production software with a greater focus on the quality of the audio format of the recorded people
2) indirect interview; the questions were written and sent to the partners who autonomously recorded the answers. The audio files sent were then edited to simulate a "simulated live conversation" within the episode.

The recorded and edited episodes were then uploaded to YouTube to be integrated into the web pages of the virtual museum.
To offer a more attractive content during listening, videos and photographs made by the partners have been included in the editing.
In the information at the bottom of the YouTube video all participants and collaborators in each episode and project have been accredited. Images and videos have its own copyright specified.

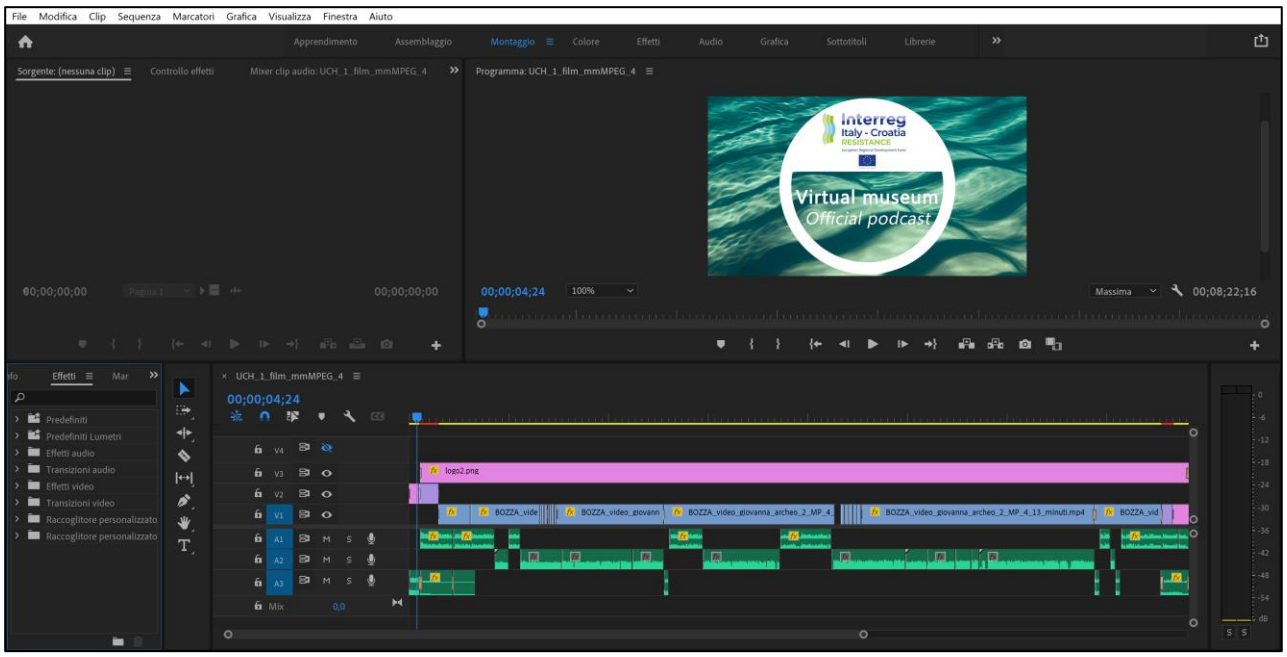
If the interviewees were given total freedom to record their speeches (if performed non-synchronously through the interview recorded on Zencastr), professional equipment was used for the production by the presenter.
For recording, a RØDE NT-USB microphone was used. The NT-USB harnesses the pristine audio quality of a professional condenser microphone and it features a studio-grade condenser capsule with a tight cardioid pickup pattern, so the recordings are rich and focused, and its ultra-low-noise, high-gain Revolution Preamp™ and high-resolution analog-digital conversion deliver clear sound.

The NT-USB+ features powerful internal DSP for adding advanced audio processing and effects to your voice, unlocked with the free RØDE Connect podcasting and streaming software, RØDE Central companion app for desktop and mobile, RØDE Reporter or UNIFY.

As regards the recording of the audio segments through the RØDE NT-USB microphone, a free software, Audacity, was used.

Adobe Premiere Pro software was used for editing the episodes. Adobe Premiere Pro is a timeline-based and non-linear video editing software application (NLE) developed by Adobe Inc. and published as part of the Adobe Creative Cloud licensing program. It is geared towards professional video editing, while its sibling, Adobe Premiere Elements, targets the consumer market.

File formats supported by Adobe Premiere Pro are included in a wide range including H.264, H.265 (HEVC), Apple ProRes, MPEG-2, MPEG-4, AVCHD, and native camera formats like Canon and Sony RAW, as well as a wide variety of codecs in a QuickTime (MOV) or MXF container. These characteristics make the software perfect for the audio and sound editing.



Editing phase of an episode of the official podcast of the virtual museum

Podcast template

It was decided to give each episode of the virtual museum podcast a fixed structure. The tree of each episode was decided and approved in the very early stages of outlining the contents to be created for the virtual museum of the Resistance project. The editorial plan was evaluated and approved by the project leaders.

The plan of the structure of the podcast aims to ensure and underline the concreteness of the format and has allowed the easy replicability of the episodes facilitating the production of each episode and helping the guests coming from the partner institutes in inserting their interventions through a division into blocks of the content.

Thanks to the definition of the recording, intervention and interlude times for each segment of the episode (expressed in seconds), we proceeded to a faster and more efficient production of the contents.

As the following scheme well represents, the episode is characterized by elements common to all the others, such as the jingle at the opening and closing of the episode and the speeches in between. Furthermore, the possibility of following an articulated script based on the outlined outline allowed easy writing of the contents both for the podcast host and for the guests who intervened.

INTRO 0-1'30"	Opening theme and podcast name presentation (**30 sec**)	• Theme song • Music • Voice
	Introduction of the host, the podcast and the Resistance project – every time for all the episodes (**1 min**)	• Voice (Narrator) • Jingle
TOPIC 1'30"-5'30"	Introduction to the topic of the episode: basic notions, contents taken from the Virtual Museum and references to it, supporting multimedia contents (**3 – 4 min**)	• Voice (Narrator) • Sound fx • Jingle • Music (background)

GUEST 5'30"-17'30"	Introduction to the guest (intro) (**30 sec – 1 min**)	• Voice (Narrator) • Voice (Guest) • Sound fx • Jingle • Music (background)
	Questions and insights with the guest (**10 min**)	
	Conclusion of the guest intervention (outro) (**30 sec – 1 min**)	
OUTRO 17'30"-20'	Final summary of the episode and the topics covered (**1 – 2 min**)	• Voice (Narrator) • Jingle
	Greetings and closing theme (**30 sec**)	• Voice • Music • Closing theme song

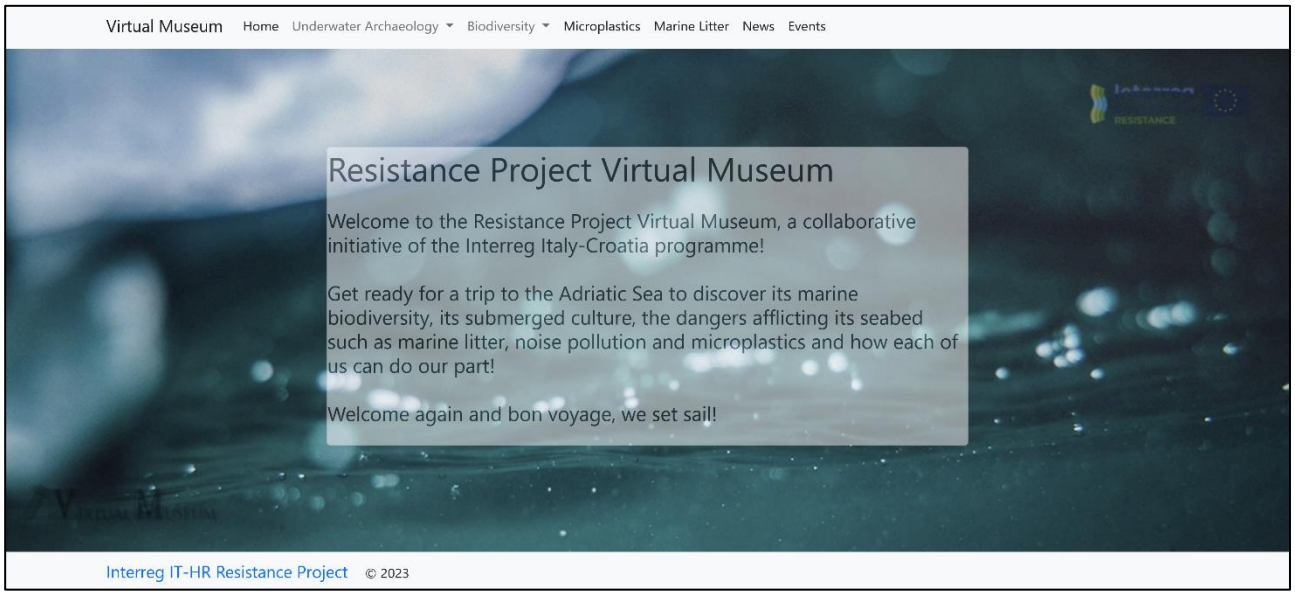
VIRTUAL MUSEUM NAVIGATION

The domain of the virtual museum of the resistance project is presented as an open source platform, allowing agility in its modification, creation and uploading of contents by using the html language. The virtual museum can be reached through the address http://www.resistance-it-hr.net/ and the navigation within it takes place through a linear scrolling by pages.

First landing page visible upon direct arrival from the link http://www.resistance-it-hr.net

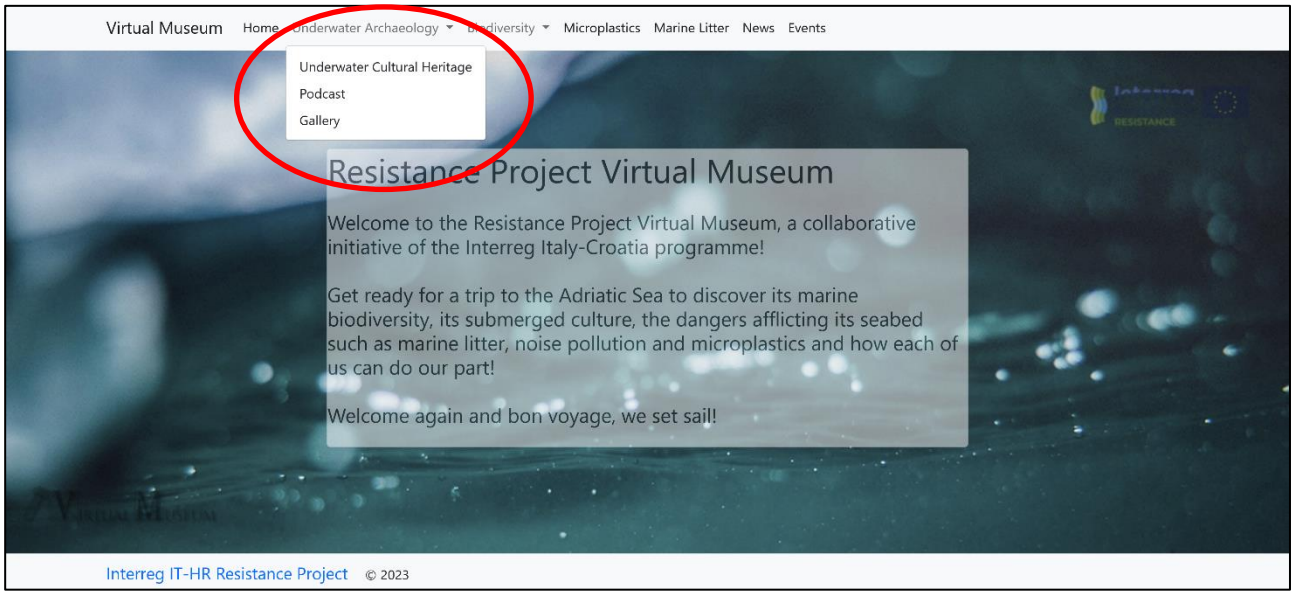
By clicking on Enter Virtual Museum, the visitor will enter in the platform.

Upon arrival on the landing page, a welcome message is shown to the visitor with a very quick introduction to the virtual museum project.



Second landing page with welcome presentation of the virtual museum

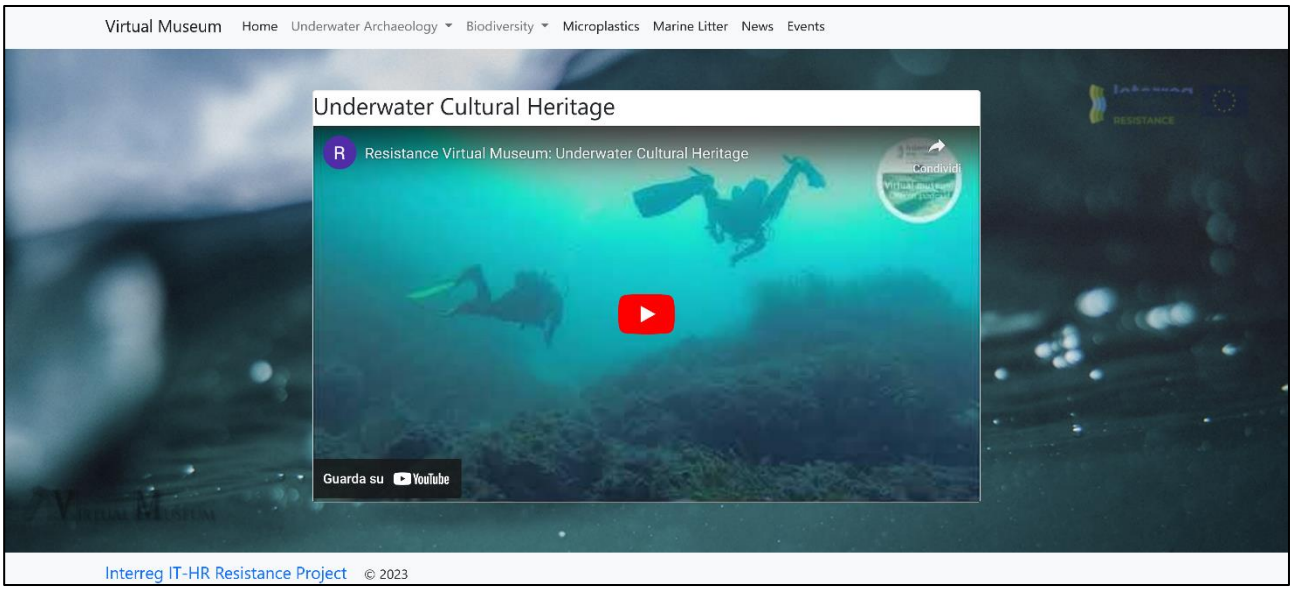
To move through the various pages, a drop-down menu is used for the various thematic sections (Culture/Underwater Archaeology, Biodiversity, Marine Litter, Microplastics).
Hovering over the name of the thematic sections automatically opens the menu presenting the division of contents into text, gallery and podcast tab.



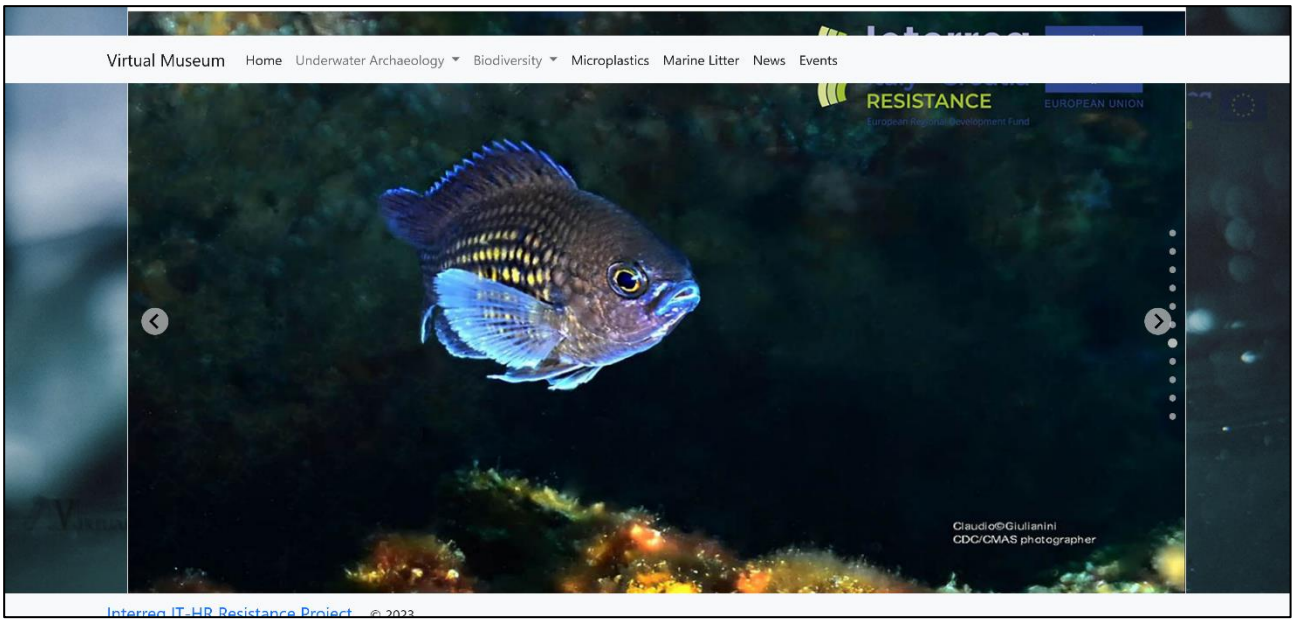
Visualization of the navigation menu in the museum

By selecting the desired contents from the drop-down menu, you access three different pages. Based on the content selected, you access the pdf file, the YouTube player and the photo gallery.

1) Viewing the downloadable and editable pdf file directly from the web page

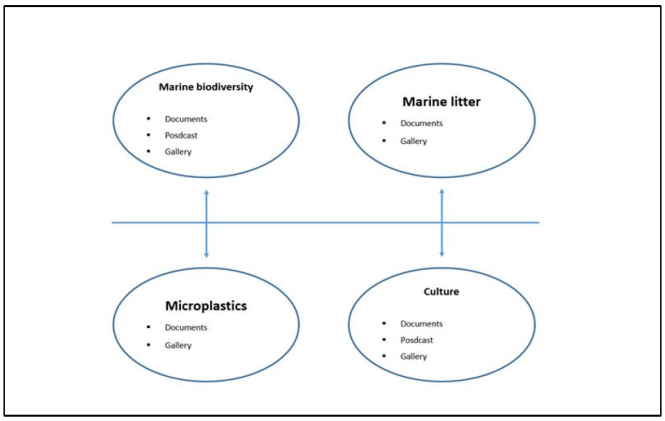


2) YouTube player view that takes you directly to the video with the podcast episode



3) Photo gallery view

Below, the navigation scheme through the site tree; this is guided through a linear navigation and it can connect the various themes through the types of communication formats between them. Navigation is therefore guided through defined pages and by the content managed by those who produce them. The linearity guarantees clarity in the exposure of these and ease of interaction and use for the visitor.



The navigation scheme through the site tree

VIRTUAL MUSEUM PLATFORM

The main functionalities and a detailed list of tasks, to fully operate the virtual museum platform, are described in the next paragraphs. In detail this document will cover the following aspects:

- Main page login and main navigation menu;
- Operate Document Sections
- Operate Podcast Sections
- Operate Gallery Sections
- Others.

Moreover, at the end of the document, a brief explanation on how to upload new content is provided.
Source code of the platform have been implemented in open-source structure, using pure HTML format for ease of future integration and represent an annex for this document.

Main Page – Enter the Site

A picture of the main page of the site is depicted here below, reachable at the address:

www.resistance-it-hr.net

Note that sometimes browsers like chrome can keep in chronology other visualization and interpretate by themselves the correct way to access the site, in this case this could lead to an unwanted link to RESISTANCE PLATFORM (in fact just in case a link to the virtual museum has been implemented also in the main page), so the real hypertext link to the virtual museum to enter directly by the welcome page is the following:

www.resistance-it-hr.net/index.html2

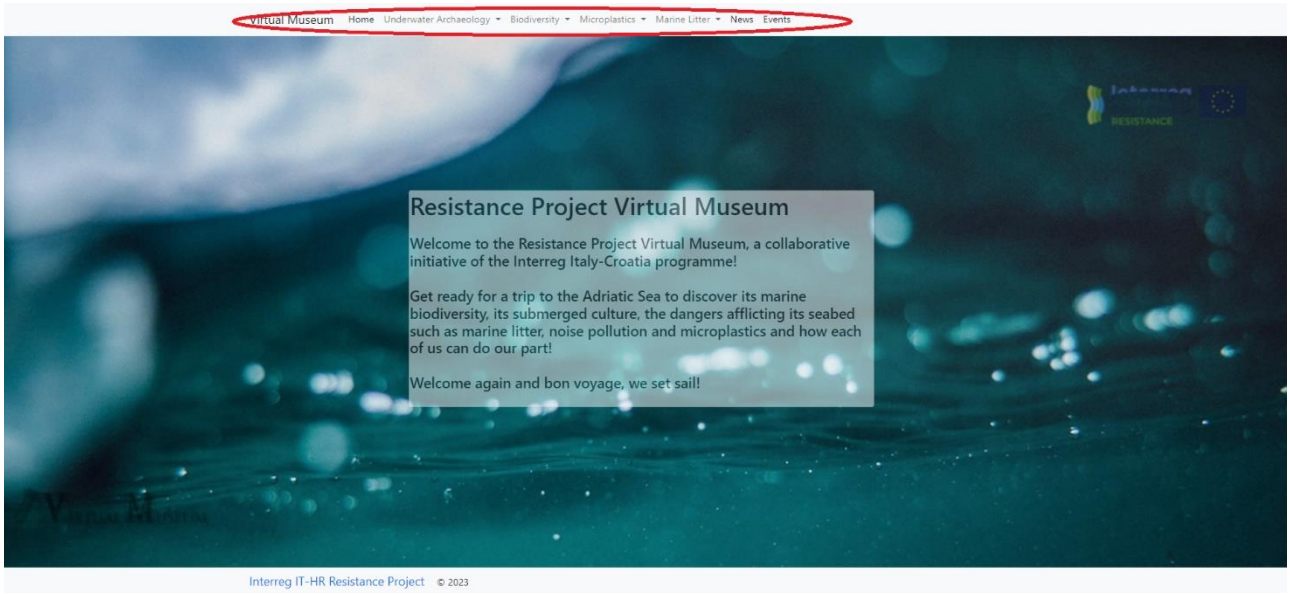
By clicking on that link the welcome page will appear, as depicted in the picture below

Main Page

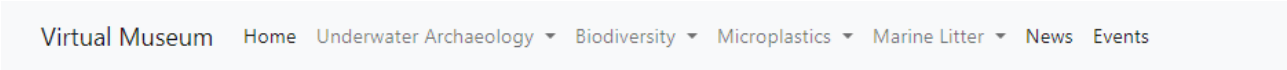
Login procedure is auto-performed by the system that will lead the operator into the HTML environment. To enter in the site it is just necessary to click on the "Enter Virtual Museum" label to immediately reach the main landing page.

The system will then forward the login request to the hosting server and the main landing page will appear.

After entering the site, the main navigation menu takes part on the upper part of the screen, as highlighted in the picture below.



Main navigation menu location



Main navigation menu detail

Every section, as for the editorial project, is composed by:

- A document written by the authors of the section;
- A podcast related to the argument of the section Marine Biodiversity and Culture/Underwater Archeology;
- Gallery related to the argument of the section.

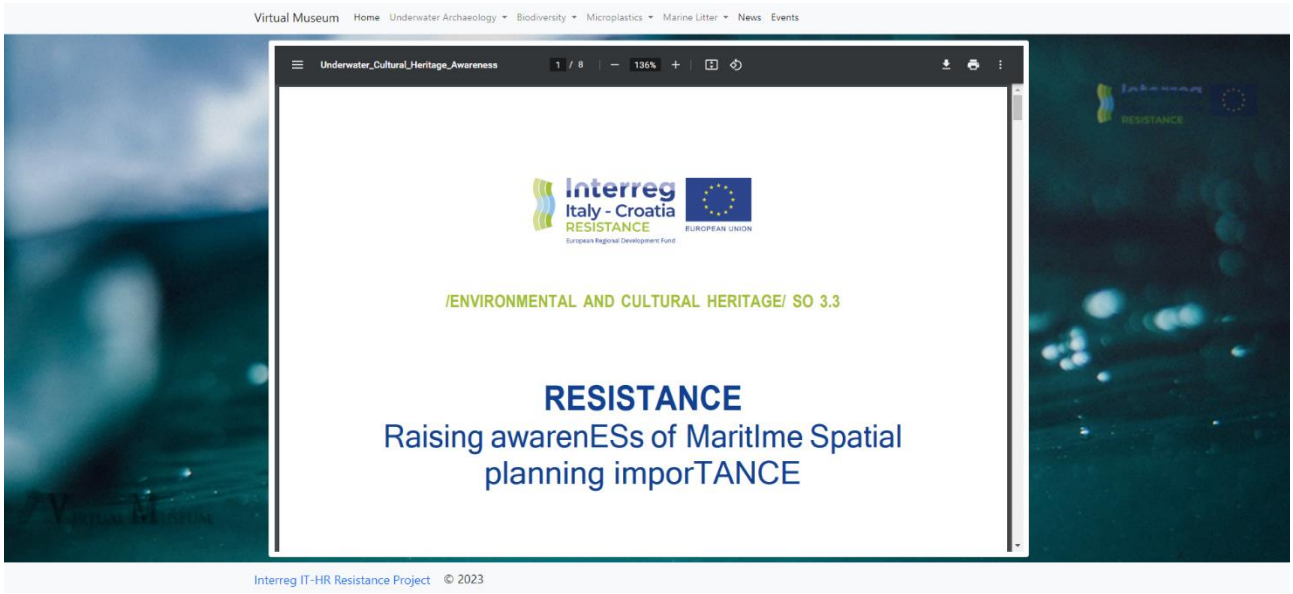
At the moment the macro field of interests of the virtual museum are the following:

- Culture (Underwater Archaeology);
- Biodiversity;
- Microplastics;
- Marine Litter.

The paragraphs enlisted here below will describe how to navigate thru it.

Operating Document Section

For each of the integrated arguments present in the virtual museum, the first voice in the sub-menu, reached upon clicking on the respective upper menu voice argument, integrates a document that has been written for the project purposes. Here below is depicted how it will appear.



Document data page

Document data sections allow the user to read and study directly on-line the PDF document provided. It has been implemented using the latest state-of-the-art open-source online pdf-viewing API to allow the administrators to easily implement and load further on other kinds of documents, while as providing the user a comfortable experience.

The user can scroll with the mouse wheel on the document, while as, like in a study environment, can perform a set of operation by clicking on the upper side of the applet, such as:

- View the list of pages of which the document is composed of;
- Zoom the page;

- Expand the page;
- Rotate the page;
- Export and download the document in PDF format;
- Print the document;
- Others (check document properties, etc.).

In the picture here below, it is shown an example of the menu bar document navigation, with the operation menu underlined in red.

Document operation menu

Operating Podcast Section

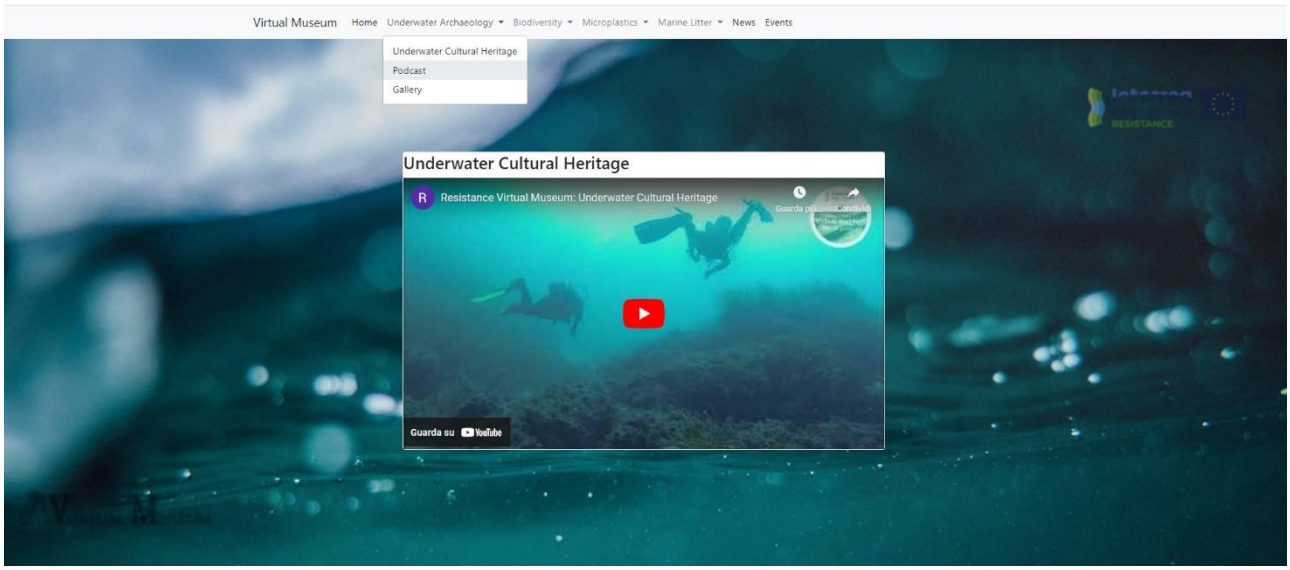
Two podcast are present in the virtual museum, the second voice in the sub-menu, reached upon clicking on the respective upper menu voice argument, where present,

integrates a podcast that has been recorded on purpose for the related argument. Podcasts have been loaded on a YouTube specific channel, called:

https://www.youtube.com/@ResistanceVirtualMuseum

and it represents the repository of the actual and all the future integration of the podcasts related to the argument of the museum.

Podcasts are dynamically loaded thru an active widget on the virtual museum web page, giving the user the full experience without the needing to swap to another site such YouTube and then being back in the virtual museum. Here below is depicted how podcasts appear in the virtual museum.



Podcast Operation Menu

Operating Gallery Section

For each of the integrated arguments present in the virtual museum, the third voice in the sub-menu, reached upon clicking on the respective upper menu voice argument, where present, integrates a photo gallery that has been selected on purpose for the related argument. Images have been directly stored on the hosting platform for an easier and faster way to recover them.

Pictures are dynamically loaded thru an active widget on the virtual museum web page, giving the user the full visual experience. Each picture is with caption, where present, to allow the user to understand what he is seeing. Pictures are exportable by right clicking on them and select the “save with name” option.

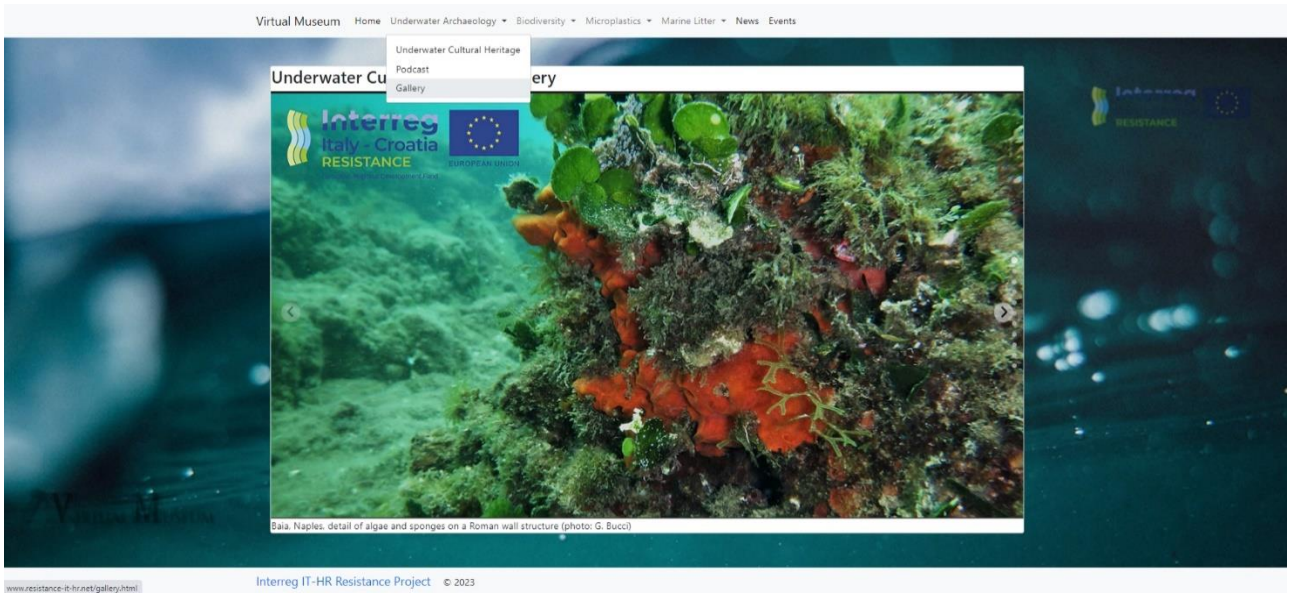
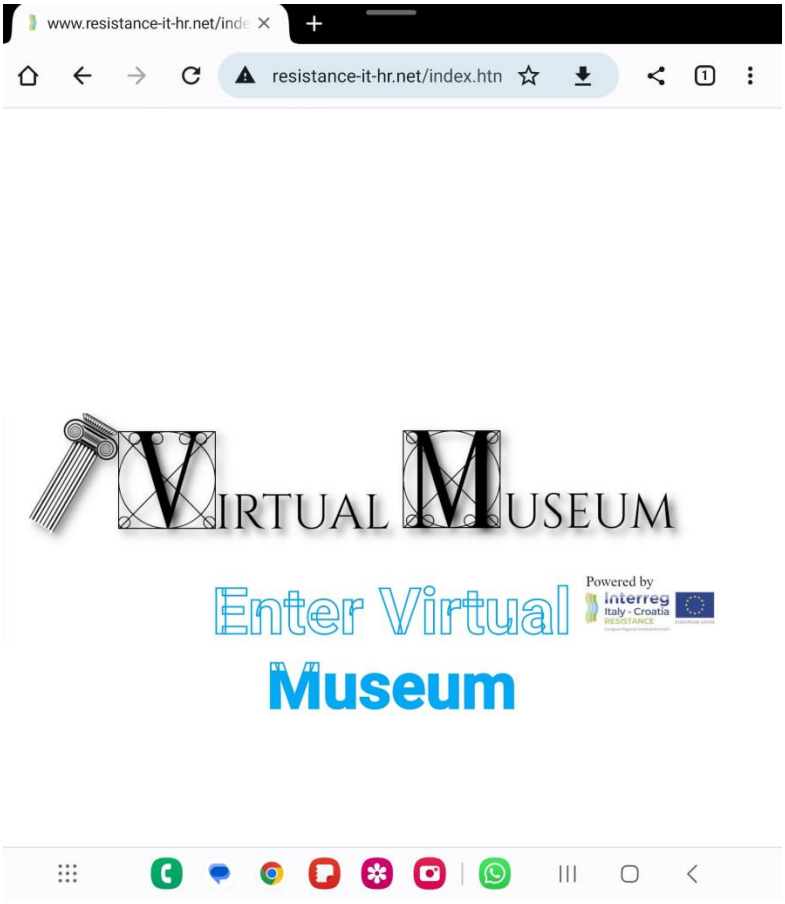
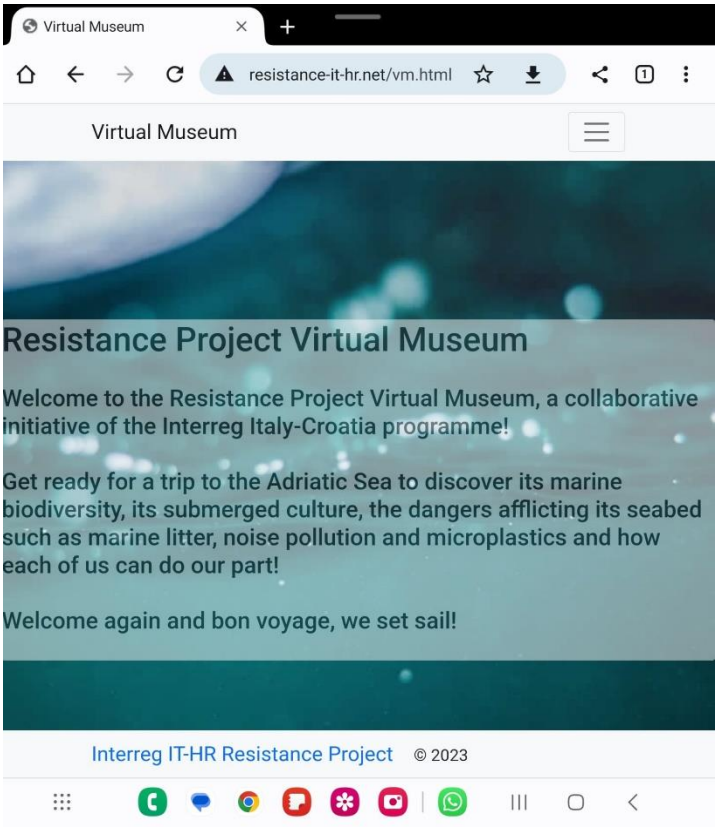


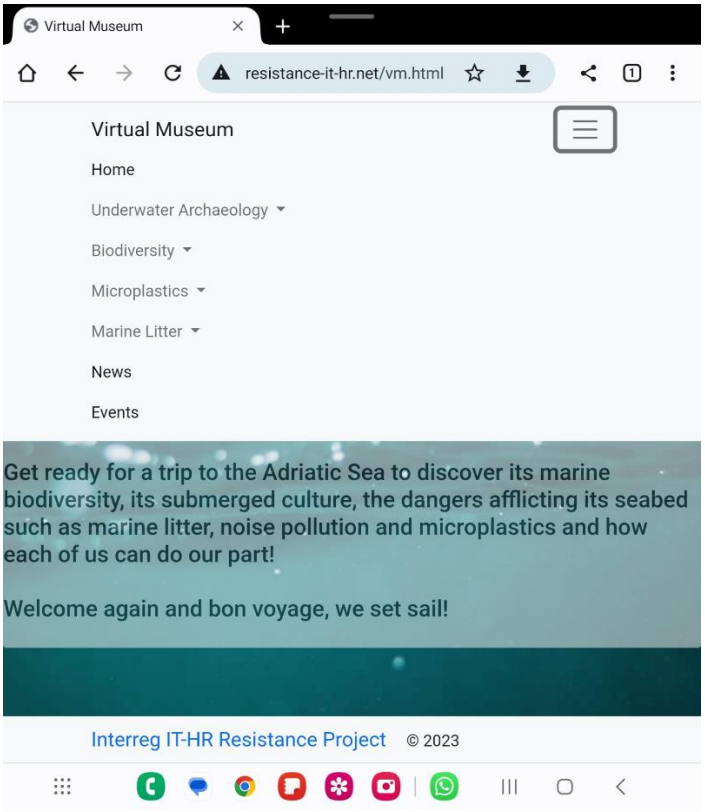
Photo Gallery Operation Menu

Others

Software is scaled to be portable also on Android/MacOS tablet/smartphones. The functionalities are exactly the same and the system is auto-adaptative due to the CSS formatting standard of the interface. Here below are depicted, as example, some screenshot taken from an Android smartphone, showing the functionalities described above.


www.resistance-it-hr.net/inde
resistance-it-hr.net/index.htn
VIRTUAL MUSEUM
Powered by
Enter Virtual
Museum


Virtual Museum
resistance-it-hr.net/vm.html
Virtual Museum
Resistance Project Virtual Museum
Welcome to the Resistance Project Virtual Museum, a collaborative initiative of the Interreg Italy-Croatia programme!
Get ready for a trip to the Adriatic Sea to discover its marine biodiversity, its submerged culture, the dangers afflicting its seabed such as marine litter, noise pollution and microplastics and how each of us can do our part!
Welcome again and bon voyage, we set sail!
Interreg IT-HR Resistance Project © 2023


Virtual Museum
resistance-it-hr.net/vm.html
Virtual Museum
Home
Underwater Archaeology
Biodiversity
Microplastics
Marine Litter
News
Events
Get ready for a trip to the Adriatic Sea to discover its marine biodiversity, its submerged culture, the dangers afflicting its seabed such as marine litter, noise pollution and microplastics and how each of us can do our part!
Welcome again and bon voyage, we set sail!
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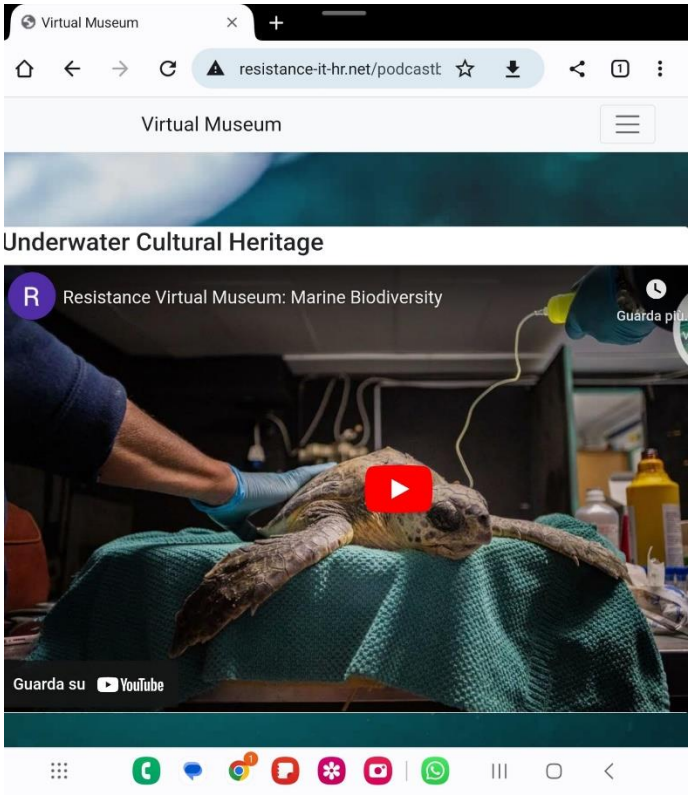
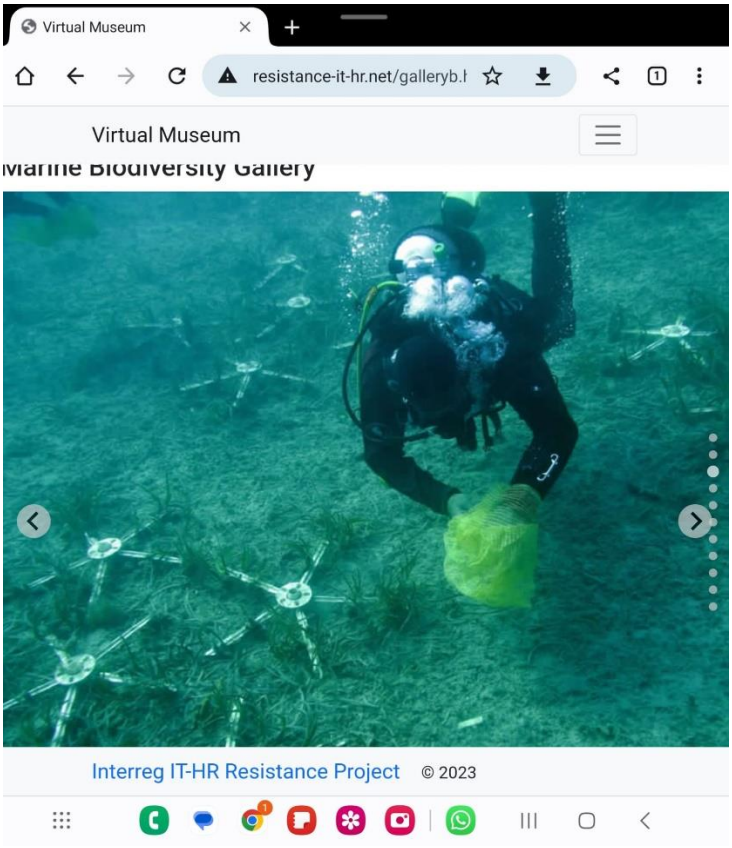

Virtual Museum
resistance-it-hr.net/podcastt
Virtual Museum
Underwater Cultural Heritage
Resistance Virtual Museum: Marine Biodiversity
Guarda su YouTube


Virtual Museum
resistance-it-hr.net/galleryb.l
Virtual Museum
Marine Biodiversity Gallery
Interreg IT-HR Resistance Project © 2023

Annexes

D.3.3.5 Virtual museum - IWP platform_Annex I

D.3.3.5 Virtual museum - IWP platform_Annex II

D.3.3.5 Virtual museum - IWP platform_Annex III