

DELIVERABLE 4.1.3

Virtual Museums: cloud-based tools for the virtual museums

Report of the usability test and implemented amendements



Work Package	4
Activity	4.1.3
Phase Leader	PP9-UNIVPM
Deliverable	Cloud-based tools for the virtual museums

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Introduction

The present report contains images and results of the usability test about the cloud-based tool implemented for the virtual museums.

In particular the report of the usability test, the main part of the document, is a **key document to gain a deeper understanding of our audience's needs and behaviour during the browsing of the Virtual Museum Adrijo**. Moreover the step of testing the platform in front of people, commonly called usability test, can help discover website strong points as well as areas of confusion. The report is carried out by PP9 Univpm and its external expert Marchingegno.

On Tuesday, 13 April 2022, at the offices of the company Marchingegno srl, the usability test of www.adrijo.eu, a web portal created as part of the 'REMEMBER. REstoring the MEmory of Adriatic ports sites. Maritime culture to foster Balanced tErritorial growth" wss carried out with the aim of preserving and enhancing the historical monumental and intangible heritage of the 8 Italian and Croatian Adriatic ports that make up the network: Ancona, Venice, Trieste, Ravenna, Rijeka, Zadar, Dubrovnik, Split.

The developed portal, digital and interactive, intends to preserve and promote the tangible and intangible cultural and maritime heritage, both monumental and knowledge-based, of the 8 Italian and Croatian ports and to enable users to enjoy it also virtually.

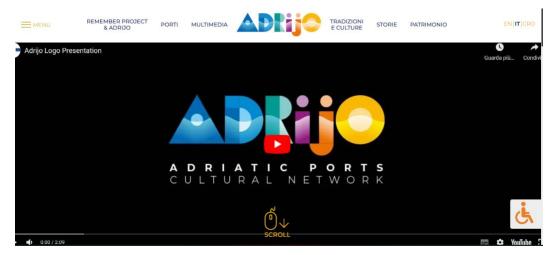
The platform provides informative content about the ports and selected points of interest (POIs), as well as offers a range of multimedia content such as drone panoramas, 3D models, audio and video, photographic images, etc. within the city's Virtual Museums. The POIs are also divided into categories:

- Traditions and Cultures,
- Stories.



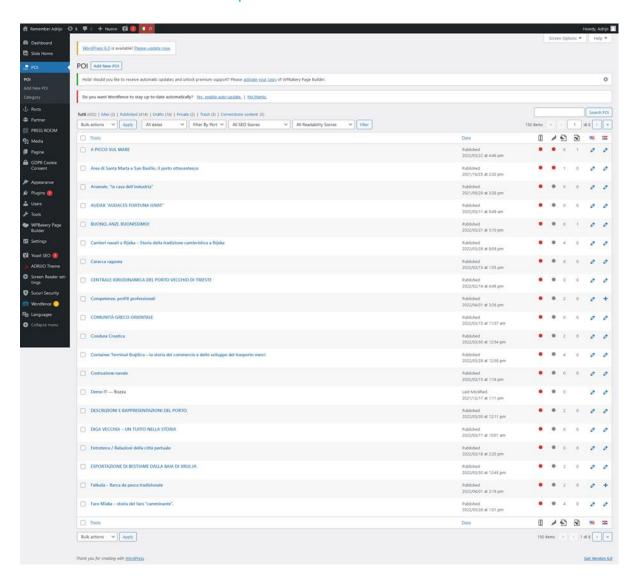
- Heritage.

Below is the header of the trial version of www.adrijo.eu:



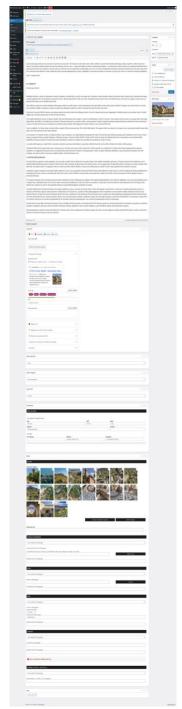


Some screenshot of the implemented tool



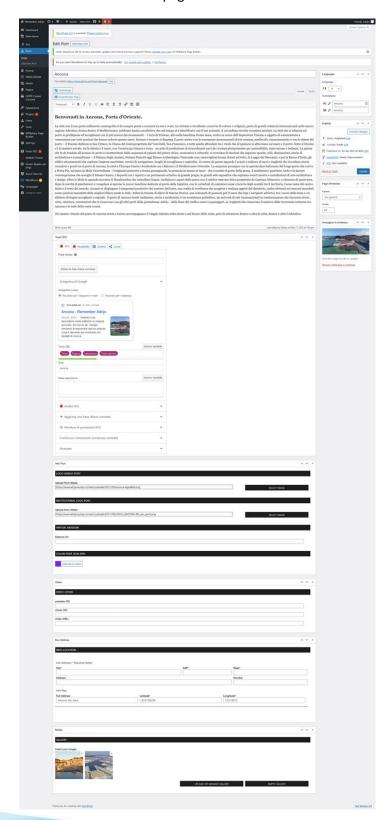


Back-end: list of POIs and one POI





Back-end: detail of Port page





Back-end: list of POIs



Benyenuti in Ancona, Porta d'Orient

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Nel museo virtuale del porto di Ancona storia e futuro accompagnano il viaggio infinito nella storia e nel futuro dello scalo, polo di attrazione dentro e oltre la città, dentro oltre l'Adriatico.



Benvenuto al Porto di Ancona

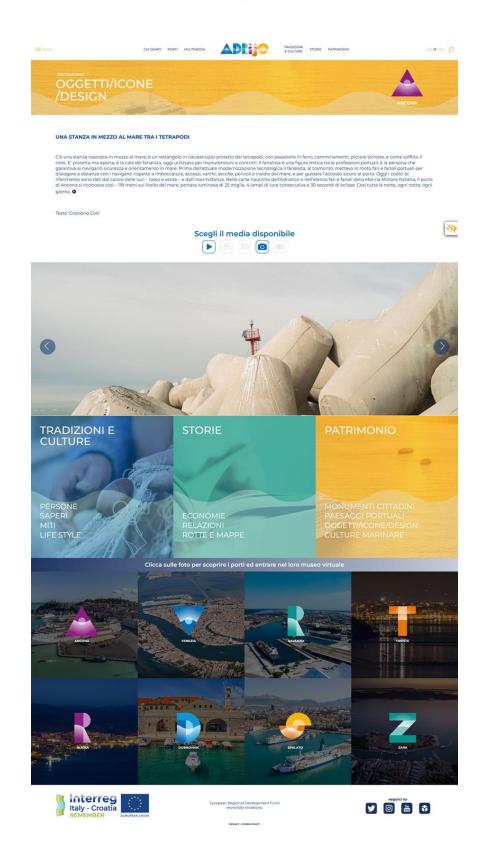


ra la mappa e ingrandisci i porti per scoprire i Punti di Interesse suddivisi per categori



Interreg Italy - Croatia

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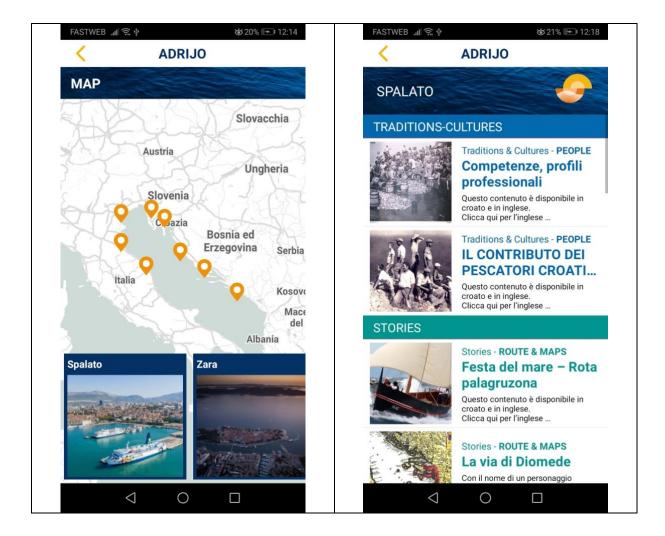












Aims and methodology of the test

The **aim of the usability test** is to check and assess the usability level of an online platform/website in cooperation with **testers**, **the protagonists of interaction**. It is the most effective method to get early feedback on the user-friendliness of a designed interface and to identify what makes it difficult or constitutes an obstacle to a satisfactory interaction.



The general objectives of the www.adrijo.eu site usability test are:

to assess ease of use,

to assess user satisfaction,

to assess the perceived usefulness of the service as a whole,

to evaluate the effectiveness of the site in relationship to the project's mission.

The methodology chosen for the usability evaluation of the site is a "Scenario-based" one, which involves the definition of a series of usage scenarios, typical and plausible objectives to be achieved in the web portal.

The methodology makes it possible to verify any deviations between the interaction model proposed by the site structure and the path followed by the user.

The test focused on the completion of 9 scenarios of use of the site, in relation to its nature and representative of the service to be offered. **Ten randomly selected sample users participated in** the usability test on a voluntary basis, who used the test version of the www.adrijo.eu website.

The tests took place in a controlled environment, under observation by two professionals to collect qualitative data. The final gola was thus to optimise the prototype of the site in its final version. Each individual test lasted a maximum of 20 minutes.

Activities

The interviewer started the test by encouraging the user to express his or her thoughts aloud while browsing the web portal ('thinking aloud' method). Throughout the duration of the test, he/she passively observed without conditioning the execution.

After a short phase in which the user was allowed to familiarise himself with the portal (approx. 1-2 minutes), the interviewer led the user through the test.



The interviewer, always assisted by an observer, took care of documenting the evolution of the user-system interaction by noting what he/she observed on previously drawn up grids: for example, the interviewer noted the time taken by the interviewee to complete/abandon the task, the navigation paths taken and any errors made.

The tests were conducted in two stages:

- 1. SCENARIOS: monitoring phase of the tasks submitted to the sample users (15-20 minutes each tester);
- 2. THE EVALUATION SHEET: final evaluation phase by the user (time at the tester's discretion), independently.

Definition of the scenarios

The test users were asked to perform the following actions within the site:

- SCENARIO 1: Search for information on what "Adrijo" is.

The scenario also included a question on the exhaustiveness of the information provided and the user's reformulation of what was understood.

- SCENARIO 2: Looking for information about Venice.
- SCENARIO 3: Search for a list of all monuments in the city.
- SCENARIO 4: Search for general information on the world of fishing in the cities of the Adriatic Sea and delve into related content of your choice.
- SCENARIO 5: Enter the Virtual Museum of Ancona. Enjoy content of your choice.
- SCENARIO 6: Search for information on the Arch of Trajan in Ancona. Enjoy all connected multimedia content.
- SCENARIO 7: Search for socials related to the project and connect to Instagram.



- SCENARIO 8: Search for information on the Dogana Da Mar customs house in Venice. Enjoy all related multimedia content.
- SCENARIO 9: Return to Home.

The first scenario was proposed to allow the user to immediately understand the type of portal and the information he could find within it.

The second and third scenarios were designed to allow users to familiarise themselves with the site (basic level), and then move on to intermediate level actions in the following scenarios (scenarios 5-6-7-9).

Scenario No 4 proposes an advanced level action.

Scenario No 8 was designed to test the memorability of the possibilities offered by the site, by proposing actions already present in the previous scenarios (No 6).

The feasibility of the scenarios was previously carefully analysed during a test-pilot session in order to check a priori for possible error or other situations.

The test was therefore anticipated by an activity of setting up the station and checking the functioning of all equipment.

During each test, the time taken for each scenario, the errors made by the tester, the outcome of each scenario and any notes or observations by the user were noted down ("thinking aloud" method).

Mistakes that did not affect the achievement of the objective of each scenario were assessed as non-critical.

A copy of the scenario data sheet is attached at the end of the report (ANNEX A).



Results

The following table shows the parameters assessed during the usability test, broken down by users/testers.

TEST n.1			
Scenario	Time spent	Result	Uncritical mistakes
1	1 min 45 sec	SUCCESSFUL	1 uncritical mistake
2	< 1 min	SUCCESSFUL	
3	< 1 min	SUCCESSFUL	
4	> 2 min	UNCOMPLETED	
5	< 1 min	SUCCESSFUL	
6	1 min	SUCCESSFUL	
7	< 1 min	SUCCESSFUL	
8	1 min	SUCCESSFUL	1 uncritical mistake
9	< 1 min	SUCCESSFUL	
TEST n.2			
Scenario	Time spent	Result	Uncritical mistakes
1	< 1 min	SUCCESSFUL	
2	< 1 min	SUCCESSFUL	1 uncritical mistake
3	< 1 min	SUCCESSFUL	
4	1 min 30 sec	SUCCESSFUL	1 uncritical mistake
5	< 1 min	SUCCESSFUL	
6	1 min	SUCCESSFUL	2 uncritical mistakes
7	< 1 min	SUCCESSFUL	
8	2 min	SUCCESSFUL	1 uncritical mistake
9	< 1 min	SUCCESSFUL	2 uncritical mistakes
TEST n.3			
Scenario	Time spent	Result	Uncritical mistakes



1	2 min	SUCCESSFUL	1 uncritical mistake
2	1 min	SUCCESSFUL	1 uncritical mistake
3	< 1 min	SUCCESSFUL	
4 > 2 min		SUCCESSFUL	2 uncritical mistakes
5	1 min	SUCCESSFUL	
6	> 2 min	SUCCESSFUL	1 uncritical mistake
7	< 1 min	SUCCESSFUL	
8	1 minuto 40 sec	SUCCESSFUL	1 uncritical mistake
9	1 min	SUCCESSFUL	
TEST n.4			
Scenario	Time spent	Result	Uncritical mistakes
1	< 1 min	SUCCESSFUL	
2	< 1 min	SUCCESSFUL	
3	< 1 min	SUCCESSFUL	
4	1 minuto 30 sec	SUCCESSFUL	1 uncritical mistake
5	1 minuto 20 sec	SUCCESSFUL	1 uncritical mistake
6	< 1 min	SUCCESSFUL	
7	< 1 min	SUCCESSFUL	
8	< 1 min	SUCCESSFUL	
9	1 min	SUCCESSFUL	
TEST n.5 Scenario	Time spent	Result	Uncritical mistakes
1	> 2 min	SUCCESSFUL	2 uncritical mistakes
2	< 1 min	SUCCESSFUL	2 uncritical inistakes
3	< 1 min	SUCCESSFUL	
4	> 2 min	SUCCESSFUL	
5	1 min 10 sec	SUCCESSFUL	1 uncritical mistake
<u> </u>	1 min 30 sec	SUCCESSFUL	1 uncritical mistake
7	< 1 min	SUCCESSFUL	1 difficultiful illistanc
8	1 min 45 sec	SUCCESSFUL	2 uncritical mistakes
9	< 1 min	SUCCESSFUL	2 distribution tribunes
	- 2 11111	33333.02	



TEST n.6			
Scenario	Time spent	Result	Uncritical mistakes
1	< 1 min	SUCCESSFUL	
2	1 min 20 sec	SUCCESSFUL	1 uncritical mistake
3	< 1 min	SUCCESSFUL	
4	1 min	SUCCESSFUL	
5	2 min	SUCCESSFUL	1 uncritical mistake
6	< 1 min	SUCCESSFUL	
7	< 1 min	SUCCESSFUL	
8	< 1 min	SUCCESSFUL	
9	< 1 min	SUCCESSFUL	
TEST n.7			
Scenario	Time spent	Result	Uncritical mistakes
1	< 1 min	SUCCESSFUL	
2	< 1 min	SUCCESSFUL	
3	< 1 min	SUCCESSFUL	
4	2 min	SUCCESSFUL	
5	1 min 40 sec	SUCCESSFUL	1 uncritical mistake
6	< 1 min	SUCCESSFUL	2 uncritical mistakes
7	< 1 min	SUCCESSFUL	1 uncritical mistake
8	> 2 min	UNCOMPLETED	
9	> 2 min	UNCOMPLETED	
TEST n.8			
Scenario	Time spent	Result	Uncritical mistakes
1	< 1 min	SUCCESSFUL	2 uncritical mistakes
2	< 1 min	SUCCESSFUL	
3	< 1 min	SUCCESSFUL	
4	2 min	SUCCESSFUL	2 uncritical mistakes
5	< 1 min	SUCCESSFUL	2 uncritical mistakes
6	1 min 40 sec	SUCCESSFUL	2 uncritical mistakes
7	< 1 min	SUCCESSFUL	1 uncritical mistake
8	2 MIN	SUCCESSFUL	2 uncritical mistakes



9	< 1 min	SUCCESSFUL	
TEST n.9			
Scenario	Time spent	Result	Uncritical mistakes
1	> 2 min	UNCOMPLETED	
2	1 min 10 sec	SUCCESSFUL	
3	< 1 min	SUCCESSFUL	
4	2 min	SUCCESSFUL	
5	< 1 min	SUCCESSFUL	
6	2 min	SUCCESSFUL	1 uncritical mistake
7	< 1 min	SUCCESSFUL	
8	3 min	SUCCESSFUL	2 uncritical mistakes
9	< 1 min	SUCCESSFUL	
TEST n.10			
Scenario	Time spent	Result	Uncritical mistakes
1	1 min 50 sec	UNCOMPLETED	
2	< 1 min	SUCCESSFUL	1 uncritical mistake
3	< 1 min	SUCCESSFUL	
4	1 min 35 sec	SUCCESSFUL	
5	3 min	SUCCESSFUL	1 uncritical mistake
6	2 min 20 sec	SUCCESSFUL	1 uncritical mistake
7	1 min	SUCCESSFUL	
8	< 1 min	SUCCESSFUL	
9	< 1 min	SUCCESSFUL	1 uncritical mistake

The evaluation sheet

Following the monitoring phase of the activities proposed to the sample users, the 10 testers were asked to independently fill in a final evaluation form concerning various aspects of the portal.



In the final evaluation form, each user was also asked to express the most appreciated aspects of the site, those less appreciated and to provide suggestions regarding the problems encountered.

The final evaluation form is attached at the end of the report (ANNEX B).

The final evaluation form allows the user's impressions not made explicit during the test to be known.

In particular, the testers were asked to give a rating from 1 (minimum) to 5 (maximum) concerning:

- "Design and graphics"
- 2 persons rated it 3/5
- 7 persons rated it 4/5
- 1 person rated it 5/5
- "Ease of use"
- 9 people rated it 3/5
- 1 person rated it 4/5
- "Overall judgement"
- 4 persons rated it 3/5
- 6 persons rated it 4/5

Reading the data from the final evaluation forms shows that most testers liked the graphic appearance and design of the web portal.

Some testers, while evaluating the site as a whole, positively, gave an intermediate rating regarding its user-friendliness.



As demonstrated in the example above, some testers also expressed evaluations and opinions while carrying out the usability test. As the observers took note of these during the tests, they will be taken into account for the purpose of a more comprehensive evaluation.

Most appreciated aspects of the site

Summarising the comments left by the users, the most appreciated aspects of the site are the visual impact and the graphic design. During the test, particularly in the initial exploratory phase, several users expressed positive comments regarding the graphics of the platform.

Other positive aspects reported by the testers, who often left several comments for each individual item, are: the **possibility of interacting with some multimedia content (in particular 3D models),** the presence of photographic **images (in particular historical ones)**, **the possibility of navigation by map** (GIF in 'Home' and interactive map with POIs).

Less appreciated aspects of the site

Many of the aspects that emerged as problematic during the test itself are reconfirmed in the final evaluation.

Specifically, testers reported the unclear subdivision of content into categories and subcategories, the lack of homogeneity of multimedia content (both in terms of content type and number), an huge density of content in some sections, the difficulty of navigation due to a complex and non-intuitive structure, and the repetitiveness of some sections of the site (e.g. double menu).



The following suggestions emerged in the last section of the evaluation form:

Insert bar for autonomous search;

- Group content by city within categories and sub-categories;
- Add icons or directions for manipulating 3D objects, for drone panoramas... and for all non-automatic multimedia content;
- Add POI titles by approaching with the pointer;
- Highlighting city names in maps;
- Replace synthesised voices with spoken audio;
- Make it possible to continue navigating the site while listening to selected audio;
- Make multimedia content icons more intuitive and ituire the icon in a more visible manner (also removing icons of content not present);
- Replace the 360 icon
- Highlight the section dedicated to informing about "Adrijo" and the "Remember" project (as an "About Us");
- Visually distinguish the page being viewed from the general part that refers to the categories;
- Give more prominence to virtual museums;
- Add the X to exit the 'Menu';
- Add the little house icon to return to the 'Home';
- Giving greater prominence to the GIF map of ports;
- Make the link between colour and category more obvious.

In this list the more feasible, according to the approaching deadlines of the project, as well as the relevant ones, according to the group expertise are highlighted in light blue.



This choice was also evaluated with the LP and the editorial group in order to decide what to change in the platform.

Observing survey

From the observation of the users during the test, the observer was able to detect further problems:

- The initial video has the Youtube bar visible but not usable;
- Some user prompts are not translated into Italian (e.g. 'Choose the available media', 'Scroll'...);
- Difficulties in navigation in the presence of content not available in Italian;
- In the map, in all languages, Croatian towns are shown with an Italianised name;
- The icon for the visually impaired is not consistent and, in some cases, overlaps with the display of pages/content;(put it at the top of the menu)
- The 'Multimedia' section was under-utilised compared to the others and difficult to understand.

CONCLUSIONS

Six out of ten users positively completed all the proposed scenarios. On the other hand, four out of ten users failed one or two scenarios, but none of the scenarios was particularly problematic for several testers. There were therefore no errors in the scenarios that caused users to be concerned about the core functionality of the site. In general, the approach of the sample users was positive and interested, albeit with the difficulties described above.





ANNEX A

PROGETTO "REMEMBER REstoring the MEmory of Adriatic ports sites. Maritime culture to foster Balanced tERritorial growth"

Test di usabilità del sito www.adrijo.eu

SCENARI DI UTILIZZO

Esplora in autonomia il sito per un minuto.		
1. Cerca informazioni su cosa sia "Adrijo".		
Percorso seguito dall'utente:		
Le informazioni sono esaustive? Sì 🗌 - No 🔲 Che cos'è Adrijo?		
Le informazioni sono esaustive? Sì - No - Che cos'è Adrijo? Tempo totale impiegato per lo scenario:		



Esito	COMPLETATO	ERRORI NON	NON
	POSITIVAMENTE	CRITICI	COMPLETATO
dello scenario			

Cerca info	rmazioni su Vo	enezia.		
Percorse	o seguito dall'u	tente:		
		Tempo tota	le impiegato per	lo scenario:
		-	le impiegato per	
	Faita	Tempo tota	le impiegato per ERRORI NON CRITICI	lo scenario:
	Esito dello scenario	COMPLETATO	ERRORI NON	NON
		COMPLETATO	ERRORI NON	NON
		COMPLETATO	ERRORI NON	NON

3. Cerca l'elenco di tutti i monumenti delle città.



Perco	orso seguito dall'u	tente:		
		Tempo tota	le impiegato per	lo scenario:
	Esito dello scenario	COMPLETATO POSITIVAMENTE	ERRORI NON CRITICI	NON COMPLETATO
Error	i registrati:			
contenut	Iformazioni gene ti inerenti a tua s orso seguito dall'u	celta.	ella pesca nell'	Adriatico e approf
		T	le impiegato per	



Esito	COMPLETATO POSITIVAMENTE	ERRORI NON CRITICI	NON COMPLETATO
dello scenario			

	Errori registrati:
5.	Entra nel museo virtuale di Ancona.
	Percorso seguito dall'utente:



isci un cont	tenuto a tua s	celta.		
		Tempo tota	le impiegato per	lo scenario:
d	Esito lello scenario	COMPLETATO POSITIVAMENTE	ERRORI NON CRITICI	NON COMPLETATO
Errori re	gistrati:			



ci tutti i	contenuti mult	timediale connes	si.	
		Tempo tota	le impiegato per	lo scenario:
	Esita	COMPLETATO POSITIVAMENTE	ERRORI NON CRITICI	NON COMPLETATO
	Esito dello scenario			
	egistrati:			
Errori re				



	Tempo tota	le impiegato per	lo scenario:
Esito	COMPLETATO POSITIVAMENTE	ERRORI NON CRITICI	NON COMPLETATO
dello scenario			
rrori registrati:			
informazioni sulla	n Dogana Da Mai	r di Venezia.	
		r di Venezia.	
		r di Venezia.	
		r di Venezia.	
rcorso seguito dall'u	tente:		
rcorso seguito dall'u	tente:		
a informazioni sulla ercorso seguito dall'u utti i contenuti mul	tente:		
ercorso seguito dall'u	timediale connes		lo scenario:
orso seguito dall'u	timediale connes	si.	lo scenario:



orna a	lla home			
Perco	orso seguito dall'ut	ente:		
				
		Tempo total	le impiegato per	lo scenario: _
	Figito	Tempo total COMPLETATO POSITIVAMENTE	le impiegato per ERRORI NON CRITICI	lo scenario:
	Esito dello scenario	COMPLETATO	ERRORI NON	NON



ANNEX B

PROGETTO "REMEMBER REstoring the MEmory of Adriatic ports sites. Maritime culture to foster Balanced tERritorial growth"
Età del compilatore:
VALUTAZIONE FINALE
Le chiediamo ora di esprimere un giudizio da 1 a 5, dove 1 rappresenta il valore più basso e 5 il valore massimo, sui seguenti aspetti legati al sito:
• DESIGN E GRAFICA 1 2 3 4 5
• FACILITÀ DI UTILIZZO 1 2 3 4 5
• GIUDIZIO COMPLESSIVO 1 2 3 4 5
Le chiediamo infine di esprimere un breve commento riguardo le seguenti voci: • Aspetto più apprezzato del sito

• Aspetto meno apprezzato del sito



Problematiche e/o suggerimenti

GRAZIE PER LA SUA COLLABORAZIONE!



PHOTOGRAPHIC REPORT

