



**Collaborative grant scheme for innovative project ideas**

**Interactive cultural digital map of Montenegro (CultDMap)**

**EuropeAid/162457/ID/ACT/ME**

**DELIVERABLE 1.2**

**ROADMAP: DIGITIZATION OF CULTURAL HERITAGE IN  
MONTENEGRO**

**1. INTRODUCTION**

Digitization of cultural heritage in Montenegro is still in its initial stages. Some project of this type have been realized, such as the Digital Library of Montenegro (managed by the National Library of Montenegro “Đurđe Crnojević”), which archives digitized historical collections, manuscripts, documents etc. Recently, the Ministry of culture of Montenegro funded the development of Touristiko app, created as a guide for tourists visiting Kotor, containing information about the town’s culture.

Interactive cultural digital map of Montenegro (CultDMap) is an ambitious and extensive project which will be a significant step forward in the process of digitization of Montenegrin culture. The digitization of cultural heritage in Nikšić will be a role model for other municipalities, so the cultural map can be extended to other parts of Montenegro, by launching start-up projects.

This Roadmap will clearly present objectives, results, target groups and final beneficiaries delineated by the project, as well as an extensive presentation of integrative set of tables related to work packages.

## 2. OBJECTIVES AND RESULTS

Global objectives and specific objectives of the project are presented in the following table:



Expected results are:

- ✚ Engaged young researchers in the fields of culture/arts, and ICT
- ✚ Created innovative repository of cultural artistic entities that are academically described and digitized;
- ✚ Created innovative web service and mobile application by following generic approach;
- ✚ Prototyped services for the cultural heritage of Nikšić;
- ✚ Promoted and prepared creative idea through start-up for another cities and locations in Montenegro
- ✚ Papers presented at conferences/journals, organised art exhibitions and workshops/promotions;
- ✚ Established cooperation channels with key international players in the fields

### 3. IMPACTS

Impacts of the Project can be divided to five levels: technical, economic, social, policy and scientific:

#### *Technical impact level:*

- ✚ Contribute to development of innovative repository of digitized cultural heritage
- ✚ Contribute to development of innovative repository of web services with digitized cultural heritage
- ✚ Contribute to creation innovative product with proven potentials for commercialization
- ✚ Contribute to creation of ICT enhanced communication services for digitized products in tourism

#### *Economic impact level:*

- ✚ Contribute to improvements of touristic sector in Montenegro
- ✚ Contribute to increased employment opportunities

#### *Social impact level:*

- ✚ Support to development of less developed regions and areas
- ✚ Spreading the information about history and culture sent to students at primary and secondary schools
- ✚ Spreading the information about history and culture sent to citizens
- ✚ Contribute to increased employment opportunities

#### *Policy impact level:*

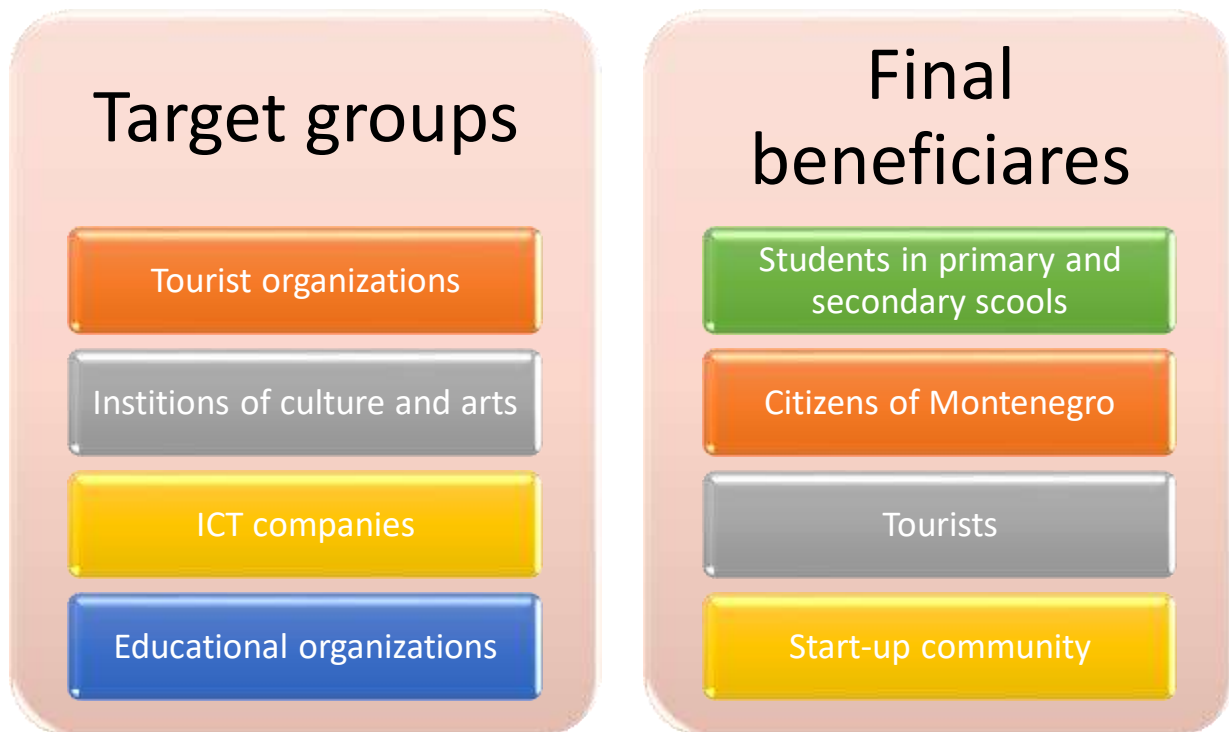
- ✚ Contribute to implementation of Smart Strategy Specialization and Digitization of Montenegro

#### *Scientific impact level:*

- ✚ Contribute to spreading excellence in research in ICT, culture and arts

#### 4. TARGET GROUPS AND BENEFICIARIES

Target group and beneficiaries are presented in following tables:



## 5. INTEGRATIVE ROADMAP (SORTED BY WORK PACKAGES)

Work package 1 - ANALYSES AND DESIGN OF CULTURAL RESOURCES		
<b>Objectives</b>	<ul style="list-style-type: none"> <li>- To analyse best practices at EU level, cross-match with existing situation in Montenegro, available resources, cultural and historical settings, etc.</li> <li>- To identify most suitable approaches to be applied for cultural heritage in Montenegro, being in line with ICT literacy, existing touristic and educational services, etc.</li> <li>- To select, analyse and categorize relevant cultural material, resulting in the first version of textual descriptions.</li> </ul>	
<b>Tasks</b>	<p><b>Task 1.1. Analysing existing digitized cultural content and products in member states of European Union (M1-M3)</b> (Task leader: FoA_UDG) Analysis will be based on leading countries in the European Union, including Germany, France and United Kingdom, as well as those with somewhat lesser level of development (such as Greece). By observing ways and methods these countries already used for digitalizing their own cultural heritage, Project team will be able to identify most successful solutions that are suitable in Montenegrin context. Finally, on the basis of analysed best-practices at EU and global level, a Roadmap will be prepared. The Roadmap will clearly specify which goals can be achieved during project implementation, and additionally how it can be extended to the whole cultural heritage in Montenegro.</p> <p><b>Task 1.2. Defining domains of culture that will be included in the project</b> (monuments, fortresses etc.) (M3-M5) (Task leader: FoA_UDG) Domains of culture that will be included in the project will be defined. This kind of categorization is important for clarity and structure of future steps. Examples of possible domains include: religious objects, cultural and historical objects and monuments, statues and</p>	<p><i>Key expected outputs:</i> reports on conducted research over 15 countries, organised visits to 10 stakeholders, defined at least 5 different domains of culture to be digitized (e.g. monuments, etc.), created repository consisted of raw material (first version of textual descriptions, photographic material etc.), which will serve as a basic for sequential digitalization of cultural heritage</p> <p><i>Key expected outcomes:</i> created grounds for digitalization of cultural heritage of municipality of Nikšić with clear applicability to other destinations and domains</p> <p><i>Main assumptions:</i> availability of artistic and cultural content of Montenegro; attractiveness of available content and potentials to generate digital services/products appropriate for touristic presentation of Montenegro;</p>

	<p>busts in public space, fortresses, architectural objects, busts, notable historical figures.</p> <p><b>Task 1.3. Creation of cultural context (M6-M8)</b> (Task leader: FoA_UDG) Relevant cultural heritage, defined and categorized in the previous task, will now be visited and adequately photographed. Significant number of high-quality photographs is needed in order to cover all planned cultural elements. This visual accompanying material will be of great importance in the digitalization phase of the Project.</p> <p><b>Task 1.4 –Textualization of selected segments (M6-M8)</b> (Task leader: FoA_UDG)Textual description for each selected segment of cultural heritage will be written, containing all relevant information about its cultural significance and history. Descriptions will contain important specific data, including dates, historical context, interrelations with other segments of cultural heritage etc. Textual descriptions will be written with the consultation of expert sources and academic literature, in order to provide maximal scientific validity and accuracy.</p>	<p><i>Main risks:</i> insufficient willingness for collaboration by local institutions</p>
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Deliverable	Delivery month (s)	Implementing body	Expected results and their impacts
<b>D1.1:</b> Report “Existing digitized cultural content and products in member states of European Union”	M3	<b>FoA_UDG</b>	<b>RESULT 2:</b> Created innovative repository of cultural artistic entities that are academically described and digitized  <b>IMPACT 1:</b> Contribute to development of innovative
<b>D1.2:</b> Report “Roadmap: Digitization of cultural heritage in Montenegro”	M5, updated on M12, M24	<b>FoA_UDG</b>	

<p><b>D1.3:</b> Initial Repository consisted of raw material (first version of textual descriptions, photographic material etc.), which will serve as a basic for sequential digitalization of cultural heritage</p>	<p>M8</p>	<p><b>FoA_UDG</b></p>	<p>repository of digitized cultural heritage;</p> <p>IMPACT 8: Spreading the information about history and culture sent to citizens.</p>
<p><b>Risk</b></p>	<p><b>Prob./ Impact</b></p>	<p><b>Preventative/Corrective Action</b></p>	
<p>Difficulties finding available sources of detailed information about certain cultural goods</p>	<p>L / M</p>	<p>Main researcher responsible for gathering necessary information will be an inhabitant of locality in question, equipped with both intimate familiarity with defined cultural heritage, and academic expertise in this field</p>	
<p>Risks related to the level of quality of photographic material</p>	<p>L / L</p>	<p>By engaging a professional photographer, we will ensure the best possible quality of photographs taken on the localities of cultural heritage</p>	
<p>Interactive cultural map includes certain element of cultural heritage that is claimed by a neighbour nation</p>	<p>L / M</p>	<p>Researcher responsible for selecting and defining the domains of culture included in the project will do so in a way that ensures full accordance with verified academic literature and scientific facts, in order to avoid any possible controversy concerning ownership and national identity</p>	

<p><b>Work package 2      DIGITIZATION OF CULTURAL HERITAGE</b></p>	
<p><b>Objectives</b></p>	<ul style="list-style-type: none"> <li>- To process and transform raw material (text, photographs etc.) from created Repository into visually and artistically attractive presentations</li> <li>- To identify most suitable architecture and design of web services which supports generic approach for replication and applicability in variety of domains and different kinds of end users</li> <li>- To create specific adaptations of collected presentational materials for different end users (including, but not limited to tourists, students in elementary and secondary schools, citizens, population with different kind of disabilities, etc.)</li> </ul>

<p><b>Tasks</b></p>	<p><b>Task 2.1. Creation of digital products for specific end users' categories (M8-M12)</b> (Task leader: FoA_UDG) Creating three types of textual descriptions, suited for three main groups of users: tourists (version in English language), citizens of Montenegro, and students in primary and secondary schools (for use in educational programmes). It will also include preparation and printing of a <b>Guidebook</b> which will be rich with illustrations, while textual segments will offer only basic information about a specific object or locality. The link with the digital platform (that can be accessed through a web and mobile presentation), will be provided through the developing of QR code system (in the following tasks).</p> <p><b>Task 2.2. Architecture and design of web services for digitized cultural heritage (M11-M12)</b> (Task leader: Čikom) We will explore the use of a well-proven concept of software product lines (SPL) embraced by many well-known industrial players (e.g., Microsoft and Nokia), which supports creation of re-usable software components, synergetic use of proven modelling languages widely adopted by both the SPL and SOA (service-oriented architecture) communities, thus fully responding to the rapidly growing demands of the service economy. On the other side, the architecture and design of web services shall fulfil the following requirements: (i) provide proper presentation of innovative repository with cultural contexts of cultural artistic entities, (ii) support generic replicability for different domains and category of end-users (in order to ensure sustainable exploitation for new innovative ideas and initiatives applicable for whole Montenegro), (iii) ensure cost-effectiveness and ease of use (e.g. use of QR codes, etc.).</p>	<p><i>Key expected outputs:</i> reports on conducted research, report on created and explained architecture, created repository of web services</p> <p><i>Key expected outcomes:</i> empowered innovation community in Montenegro for creation of pioneering innovation:information accelerator about cultural heritage, backed up by academic hyperlinks</p> <p><i>Main assumptions:</i> possibility to create generic approach of web service and mobile application; development of digital interactive cultural map has clear potentials for innovations and market orientation;</p> <p><i>Main risks:</i> low level of existing knowledge to complete innovation and implementation tasks</p>
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	<p><b>Task 2.3. Web services prototyping (M13-M15)</b> (Task leader: Čikom) By following selected cultural artistic entities from municipality Nikšić (result of activity 1.2) and by applying generic approach for web service designing and modelling, (developed in 2.2), repository of prototyped web services will be created. It will be of crucial importance for further creation of innovative digitized products (e.g. different mobile and web applications, etc.) which could be integrated with modern communication and distribution techniques and methods, adjusted to the needs of persons with disabilities, etc.</p>		
Deliverable	Delivery month (s)	Implementing body	Expected results and their impacts
D2.1: Report “Guidelines: Development of specific digital solutions for distinct user categories”	M9	FoA_UDG	<p>RESULT 2: Created innovative repository of cultural artistic entities that are academically described and digitized</p> <p>IMPACT 1: Contribute to development of innovative repository of digitized cultural heritage;</p> <p>IMPACT 8: Spreading the information about history and culture sent to citizens</p> <p>RESULT 3: Created innovative web service and mobile application by following generic approach</p> <p>IMPACT 2: Contribute to development of innovative repository of web services with digitized cultural heritage</p>
D2.2: Guidebook: Cultural heritage of Nikšić	M10	FoA_UDG	
D2.3: Refined and digitalized collection of materials that present selected cultural heritage	M12	FoA_UDG	
D2.4: Report “Architecture and design of web services for digitized cultural heritage”	M12	Čikom	
D2.5: Repository of prototyped web services	M15	Čikom	

Risk	Prob./Impact	Preventative/Corrective Action
Difficulties in transferring graphic design solutions onto digital platform (e.g. impracticality for use in mobile version of the application)	M / M	Graphic design expert engaged in the Action will be in direct communication with experts in charge of digitalization process, in order to ensure compatibility between design solutions and technical feasibility
Low level of existing knowledge/expertise of research staff members	L / H	Review of best practices and background knowledge; Engagement of more experienced researchers
Difficulties in transferring graphic design solutions onto digital platform (e.g. impracticality for use in mobile version of the application)	M / M	Graphic design expert engaged in the Action will be in direct communication with experts in charge of digitalization process, in order to ensure compatibility between design solutions and technical feasibility

<b>Work package 3 DEVELOPMENT OF INNOVATIVE PRODUCTS AND START-UP INITIATIVES</b>	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>- To prepare, promote and establish creative idea in the form of new start-up</li> <li>- To implement and evaluate start-up innovative idea, on which further sustainable plans and actions could be implemented</li> <li>- To integrate innovative communication techniques to increase profit and spread the use among different groups of end-users (e.g. m-ticketing, etc.)</li> </ul>

<p><b>Tasks</b></p>	<p><b>Task 3.1. Start-up establishment: <i>Digital Innovations in tourism</i> (M15-M17)</b> (Task leader: FoA_UDG) Start-up related to the Project will be established within the Entrepreneurial nest, which can support the start-up in the first six months. Entrepreneurial nest is a centre organized on the University of Donja Gorica with the aim of supporting students in relation to planning and developing start-ups. Start-up team will be constituted of students, especially MSc students. Čikom's expertise will help with developing products of the start-up.</p> <p><b>Task 3.2. Start-up “<i>Digital Innovations in tourism</i>”: implementation of one digitized innovation (M16-M21)</b> (Task leader: Čikom) Based on created repository of web services, variety of different web/mobile applications can be created with different target groups, different purposes and business models. One of ideas which in preparatory phase showed promising results (based on primary search and analyses of potential users, their existing needs and requirements (as presented in Section 2.1.1.1) and which is rooted in developed generic approach for targeting different end users (including tourists, students, citizens, etc.) is creation of INTERACTIVE CULTURAL DIGITAL MAP. Therefore, digital map will be implemented by integrating selected resources related to municipality Nikšić (task 1.2), thus clearly exemplifying the concept and idea applicable for other municipalities and regions of Montenegro.</p> <p><b>Task 3.3. Start-up “<i>Digital Innovations in tourism</i>”: Evaluation (M20-M24)</b> (Task leader: Čikom) In order to provide solid grounds for start-up functioning after project duration, different evaluation methods will be used, naming just a few: analyses of user experience, communication with future stakeholders and analyses of their</p>	<p><i>Key expected outputs:</i> established at least 1 start-up, prototyped at least 1 innovative product which is a key asset for the start-up, tested and evaluated prototype, created sustainable plans and market-oriented strategy</p> <p><i>Key expected outcomes:</i> enhanced start-up community in ICT innovations in tourism, enhanced cooperation with key stakeholders, strengthened market orientation of created digital solutions</p> <p><i>Main assumptions:</i> proposed solution has potentials for real breakthrough at digital market in Montenegro, interests of key stakeholders to accept ICT innovations, applicability of well-known techniques and methods to create interactive digital map suitable for Montenegrin society and identified target groups</p> <p><i>Main risks:</i> lack of readiness and willingness to support further exploitation of the solution, low level of existing knowledge to complete innovation and implementation tasks</p>
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potential requirements, etc. Only by using comprehensive evaluation approach over prototyped solution, long-term plan for integration of key actors can be made as well as approaches for further development and sustainability models and be created.

**Task 3.4. Start-up “*Digital Innovations in tourism*”:** Use of modern communication techniques to increase profit (M22-M24) (Task leader: Ćikom)

Modern communication techniques recently applied in tourism are mainly focused on upgrading and improving the tourist offer, providing real-time information on tourist offer and attractive theatre, literary, sports, concert and other events at the location they are staying and at the time of their stay, and simultaneously enhancing the work of national and local tourism organizations, facilitating the more efficient linkage of tourism organizations with public and private companies, etc.

One of fast-paced trend of tourist offers in the world today is m-ticketing system which integration could also optimize and standardize business processes in the ticketing segment, finally presenting the integrated tourist offer of Montenegro as a whole on a daily basis. Therefore, creation of integral solution will be prototyped and analysed, to serve as a basis for further sustainability of established start-up.

Deliverable	Delivery month (s)	Implementing body			
D3.1: Reports “Start-up: Digital Innovations in tourism-documentation”	M17	FoA_UDG	<table border="1"> <thead> <tr> <th data-bbox="1057 296 1524 401">Expected results and their impacts</th> </tr> </thead> <tbody> <tr> <td data-bbox="1057 401 1524 1220"> <p>RESULT 4: PROTOTYPED SERVICES FOR THE CULTURAL HERITAGE OF NIKŠIĆ</p> <p>IMPACT 3: Contribute to creation innovative product with proven potentials for commercialization;</p> <p>IMPACT 4: Contribute to creation of ICT enhanced communication services for digitized products in tourism;</p> <p>IMPACT 5: Contribute to improvements of touristic sector in Montenegro;</p> <p>IMPACT 11. Contribute to implementation of Smart Strategy Specialization and Digitization of Montenegro</p> </td> </tr> </tbody> </table>	Expected results and their impacts	<p>RESULT 4: PROTOTYPED SERVICES FOR THE CULTURAL HERITAGE OF NIKŠIĆ</p> <p>IMPACT 3: Contribute to creation innovative product with proven potentials for commercialization;</p> <p>IMPACT 4: Contribute to creation of ICT enhanced communication services for digitized products in tourism;</p> <p>IMPACT 5: Contribute to improvements of touristic sector in Montenegro;</p> <p>IMPACT 11. Contribute to implementation of Smart Strategy Specialization and Digitization of Montenegro</p>
Expected results and their impacts					
<p>RESULT 4: PROTOTYPED SERVICES FOR THE CULTURAL HERITAGE OF NIKŠIĆ</p> <p>IMPACT 3: Contribute to creation innovative product with proven potentials for commercialization;</p> <p>IMPACT 4: Contribute to creation of ICT enhanced communication services for digitized products in tourism;</p> <p>IMPACT 5: Contribute to improvements of touristic sector in Montenegro;</p> <p>IMPACT 11. Contribute to implementation of Smart Strategy Specialization and Digitization of Montenegro</p>					
D3.2: Product: Interactive cultural digital map of Nikšić	M21	Čikom			
D3.3: Report “Start-up “Digital Innovations in tourism”: Evaluation approach”	M20	FoA_UDG			

D3.4: Report “Start-up “Digital Innovations in tourism”: Evaluation results”	M24	FoA_UDG	<p>RESULT 5: PROMOTED AND PREPARED CREATIVE IDEA THROUGH START-UP FOR ANOTHER CITIES AND LOCATIONS IN MONTENEGRO</p> <p>IMPACT 6: Contribute to increased employment opportunities;</p> <p>IMPACT 10: Support to development of less developed regions and areas;</p> <p>IMPACT 11. Contribute to implementation of Smart Strategy Specialization and Digitization of Montenegro</p>
Risk	Prob./Impact	Preventative/Corrective Action	
Version of textual description intended for students is not aligned with existing school curriculums or not meeting pedagogical requirements	L / M	Researcher responsible for writing textual description for students will be mindful of the content of current school curriculums, and also take pedagogical postulates into account.	
Stakeholders (local institutions) being not sufficiently inclined to provide support and cooperate.	L / H	Members of project team will timely maintain personal communications with relevant decision-makers and ensure their participation and motivation to engage and promote the Action.	
Lack of public attention and insufficient interest for the interactive map	L / H	Using best practices designed for dissemination and raising public awareness, along with innovative creative solutions in domain of communication with the public.	

Low level of existing knowledge/expertise of research staff members	L / H	Review of best practices and background knowledge; Engagement of more experienced researchers
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**Work package 4 DISSEMINATION AND EXPLOITATION**

<b>Objectives</b>	<ul style="list-style-type: none"> <li>- To disseminate and promote project results</li> <li>- To establish cooperation channels with key national and international players in the fields</li> <li>- Increase the awareness about digitized cultural heritage at cultural, touristic and wider community (articles presented at conferences, exhibitions, workshops, etc.)</li> </ul> <p style="margin-left: 40px;">Ensure sustainable effects of project results at national level.</p>	
<b>Tasks</b>	<p><b>Task 4.1. Promote CultDMap to citizens, stakeholders, policymakers, and market, at national and international level (M1-M24)</b> (Task leader: FoA_UDG) Official <b>CultDMap</b> site will be created, as well as accounts on most popular social networking services, in order to promote the Project. Campaign on social media will be organized by principles of integrated strategic communication and PR, ensuring best possible relations with public, especially with most important target groups.</p> <p>Through coordination with journalists from most popular Montenegrin medias, nation-wide publicity will be guaranteed. Direct communication with representatives of tourist organizations will be conducted, in order to ensure maximal cooperation and promotion of <b>CultDMap</b>'s products on tourist fairs. Members of Project team will have direct communication with representatives of relevant educational organizations (especially primary and secondary schools). Hard-copy promotional material will also be utilized.</p> <p><b>Task 4.2. Promote CultDMap to innovation community at national and international level</b></p>	<p><i>Key expected outputs:</i> organised different dissemination activities, published scientific papers, conference posters, exhibitions, workshops</p> <p><i>Key expected outcomes:</i> enriched project visibility at national/international levels, contribution to establishing cooperation channels with key national/international players</p> <p><i>Main assumptions:</i> proposed actions have strong potentials to provide results of high interests for wider community, innovation and scientific sectors</p> <p><i>Main risks:</i> inappropriate communication means with different communities; low interests of key actors to promote results; low interests of communities to accept key project results</p>

(M1-M24) (Task leader: Čikom) Specific means will be used for promotion of key project results to innovative and scientific community, including: conference and journal papers, posters at scientific conferences, presentation and promotion of newly established start-up to start-up community at national/international level (e.g. cooperation with MTelDigitalnaFabrika, TechnopolisNikiš, other innovation and entrepreneurship hubs, etc.)

**Task 4.3. Promote and organise the Final CultDMap Forum in Montenegro (M19-M24)**

(Task leader: Čikom) Near the end of the Project, **CultDMap Forum** will be held in Montenegro. That will present an opportunity to gather important stakeholders on local, national, regional and international level, as well as policy makers, regulatory bodies and media representatives. Results of the Project will be discussed, and future possibilities will be emphasized. Forum will bring together professionals from various branches, such as culture, arts, ICT, tourism, academic research community, education professionals, tourist subjects etc.

Deliverable	Delivery month (s)	Implementing body	
<b>D4.1:</b> Reports on dissemination activities at national and international level	M12, M24	FoA_UDG, Čikom	<b>Expected results and their impacts</b>
<b>D4.2:</b> Report on dissemination activities to scientific and innovation communities	M12, M24	Čikom	RESULT 6: PAPERS PRESENTED AT CONFERENCES/JOURNALS, ORGANISED ART EXHIBITIONS AND WORKSHOPS/PROMOTIONS
<b>D4.3:</b> Final Report on the Final CultDMap Forum	M24	Čikom	IMPACT 9: Spreading the information about history and



<p><b>D4.4:</b> Report on established cooperation agreements and cooperation channels</p>	<p>M24</p>	<p><b>FoA_UDG</b></p>	<p>culture sent to students at primary and secondary schools</p> <p><b>RESULT 7: ESTABLISHED COOPERATION CHANNELS WITH KEY INTERNATIONAL PLAYERS IN THE FIELDS</b></p> <p>IMPACT 12. Contribute to spreading excellence in research in ICT, culture and arts</p> <p>IMPACT 11. Contribute to implementation of Smart Strategy Specialization and Digitization of MNE</p>
<p><b>Risk</b></p>	<p><b>Prob./Impact</b></p>	<p><b>Preventative/Corrective Action</b></p>	
<p>Inappropriate communication means with different communities; Low interests of key actors to promote results; low interests of communities to accept key project results</p>	<p>M / H</p>	<p>Intensified promotional activities</p>	

Work package 5 <b>MANAGEMENT AND COORDINATION</b>	
<b>Objectives</b>	<ul style="list-style-type: none"> <li>- Overall coordination and management of the project;</li> <li>- Organisation of project meetings; preparation of progress and final reports.</li> <li>- Collaboration with main stakeholders and policy makers.</li> <li>- Monitoring of the progress in standardization and further collaboration with key stakeholders.</li> </ul>
<b>Tasks</b>	<p><b>Task 5.1. Coordination (M1-M24)</b> (Task leader: Čikom) The aim of this task is assurance of amiable working atmosphere between partners given the diversity of operating environment, academia and business. This includes also monitoring of cooperation with key stakeholders at national level. An internal report “<i>The State of the CultDMapProject</i>” every six months will be prepared and distributed by the Coordinator to co-applicant.</p> <p><b>Task 5.2. Management (M1-M24)</b> (Task leader: Čikom) A detailed project plan and sub-task per partner, including detailed scheduling, will be formulated. Under this task the <i>Management &amp; Quality Plan</i> will be elaborated and implemented, including: (i) Implementation of a quality assurance procedure on deliverables, including peer review when appropriate, (ii) Organisation of an efficient continuous project progress monitoring and supervision of the progress of the project (tasks, milestones, budget), (iii) Evaluation of the expected impact of problems or issues that might affect the project in terms of delays, quantity of work, inferred repercussions on other activities, and other similar factors, (iv) Identification and analysis of risk, plus suggestions for fall-back solutions, as well as: (i) Monitoring of the overall budget status of the entire project, collection of administrative documents and cost statements and (ii) Day-to-day administrative management, (iii) Preparation of any document connected with the project.</p> <p><b>Task 5.3. Innovation and Scientific management (M1-M24)</b> (Task leader:</p> <p><i>Key expected outputs:</i> reports on conducted research over 15 countries, organised visits to 10 stakeholders, defined at least 5 different domains of culture to be digitized (e.g. monuments, etc.), created repository consisted of raw material (first version of textual descriptions, photographic material etc.), which will serve as a basic for sequential digitalization of cultural heritage</p> <p><i>Key expected outcomes:</i> created grounds for digitalization of cultural heritage of municipality of Nikšić with clear applicability to other destinations and domains</p> <p><i>Main assumptions:</i> availability of artistic and cultural content of Montenegro; attractiveness of available content and potentials to generate digital services/products appropriate for touristic presentation of Montenegro;</p> <p><i>Main risks:</i> insufficient willingness for collaboration by local institutions</p>

	FoA_UDG) Special focus will be put on monitoring scientific and innovative progress of defined activities. To this aim, Scientific Committee will be established with experienced researchers and representatives experienced in business innovations which will periodically monitor progress of PhD student(s) and recognised researchers (with PhD), as well as inclusion of MSc students and further impact on scientific/innovation community.	
Deliverable	Delivery month (s)	Implementing body
<b>D5.1:</b> Management and Quality Plan	M3	Čikom
<b>D5.2:</b> Interim Project Reports	M12, M24	Čikom, FoA_UDG
<b>D5.3:</b> Final Project Management Report	M24	Čikom, FoA_UDG
<b>D5.4:</b> Project meetings reports	M1, M5, M9, M12, M15, M18, M21, M24	Čikom
Risk	Prob./Impact	Preventative/Corrective Action
Low level of scientific results	L / H	Engagement of more experienced researchers; Review of timetable
Difficulties in management: financial, organisation, cooperation, communication	L / M	Consultations with CFCU, change in management structure, organisation of meetings between partners, more effective management and time reporting

## **6. CONCLUSION**

This Roadmap has presented the most appropriate steps that need to be taken in the direction of digitizing Montenegrin cultural heritage, in the context of CultDMap project. The Project will have positive effects on multiple levels: educational, cultural, academic, innovative, economic etc.

The Coronavirus pandemic has already changed the world and proved the necessity of digitalization and new technologies. The Interactive cultural digital map of Montenegro will, therefore, be of great importance for international presentation and cultural globalization of Montenegro, its heritage and identity. Centuries of Montenegrin history and culture will be easily accessible to the global community, just “one click away”.

(This is the first version of the Roadmap, which will be updated on 12<sup>th</sup> and 24<sup>th</sup> month of the project realization.)