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# BACKGROUND INFORMATION

## Partner country

Republic of North Macedonia

## Contracting authority

Municipality Bitola

## Country background

The Republic of North Macedonia has good tourism potential, but it still lacks proper promotion, widening the range of opportunities through the use of modern technology, as well as obtaining sufficient data about the attractions that could draw and sustain potential tourists in certain areas, mainly in Bitola and the cross-border region.

The variety and richness of cultural and historical monuments make the Republic of North Macedonia a very interesting and attractive tourist destination. Rich with a lot of cultural and historical heritage, The Republic of North Macedonia has a fascinating past and very attractive places, which still represents an insufficiently explored destination in tourism terms. Visiting new and unknown tourist destinations in recent years is becoming a major motivational characteristic of the tourists’ decision to engage in tourist routes. The cultural tourism industry is on a low developed level, especially in the target area of the project – Municipality Bitola.

## Current situation in the sector

Municipality of Bitola rightfully wears the epithet "City of Culture," primarily because of the rich cultural and historical background, cultural heritage and monuments, the spirit of inter-culture and Europeanism, which has left a deep mark here since the early 20th century. Bitola is also a member of the UNESCO creative cities network in the field of film since 2015. Bitola’s history with film dates back to the Manaki brothers who, as film and photography pioneers, brought to Bitola – formerly named Manastir – the Bioscope 300 film camera. The brothers famously filmed the very first motion pictures shot in the Balkans. Bitola is an urban and modern city offering numerous monuments of history, nurturing tradition, and allowing tourists to discover the town.

The approach of visitors and generally of touristic development is made on the basis of exploiting the new technologies, which help in the valorization of significant cultural elements and give to the visitor a more complete picture of the cross-border area. It is typical that the average visitor is aware of little evidence from the cross-border area, such as the waterfalls in Edessa and the Christian monuments in Bitola, while there are a number of important monuments and unique elements of the natural environment, which the visitor ignores.

Indeed, some important elements, such as the local architectural heritage with its unique characteristics, a number of important monuments, important archaeological sites, unique points of environmental interest and important biotopes are completely unknown to the majority of visitors. All of these elements will be provided with the assistance of new technologies to the visitors, both in organized information and communication facilities, and individually via PC, tablet, or smartphones.

Another common feature of the cross-border area is the activity of Manaki Brothers, who, as the first filmmakers in the Balkans, worked along the cross-border area. Through the promotion of their work and of the cinema history of the wider area, the development of new services to the visitors and the improvement of the touristic product of the area are attempted.

The biggest problem in the areas of Edessa and Bitola is that the visitors are in transit, as infrastructure for the reception of visitors and for the promotion of cultural and environmental characteristics has not been adequately developed.

The project attempts to succeed in the prolongation of the stay of visitors in the two cities with the creation of tools for their information and their better guide to all the cultural monuments and the points of environmental interest. Moreover, through activities for the valorisation of the interaction of the natural environment with cultural heritage, important aspects of the local history, architecture, and everyday life of the cross-border population are highlighted.

On the flip side, the cross-border area is loaded with characteristic architecture, natural wealth, significant archeologic elements, which can easily become a real tourist attraction through proper promotion. But there is not enough data to valorize their cultural and historical values and as such to promote worldwide. Setting religion on top of this, with the cultural and historical wealth and the cross-border region, especially the Bitola-Edessa route, a high potential for a real tourist attraction evolves. In context, expressing the significance of the Manaki Brothers, through acknowledging their specific work for that period, will elevate the will and interest in further research of their film and camera activities, and with this, the touristic attractivity of this cross-border region will rise to another level. The old Bitola theatre represents another attraction of which only the memories of elder citizens are preserved, to testify its construction in the early 20th century. A virtual tour through this facility, given by this project, will testify its unique, distinctive, and specific characteristics and will bring interest about it to any visitor. Objects of less specific origin, connected to the Old Bazaar, the Ottoman period, religion etc, undoubtfully present a need of valorising the cultural and historical heritage of this region, leading to many different materials that, properly arranged, will be able to promote the city justly, as well as to create a connection with the significance of cultural and historical heritage of Edessa. This way, a cultural and historical route will emerge, which will allow higher numbers of tourist visits and economic benefits for the region.

With these activities, Cineculture Project will have a serious impact on reducing the current lack of usage of the cultural and historical wealth of this area in order to provide tourist promotion.

## Related programmes and other donor activities

N/A

# OBJECTIVE, PURPOSE & EXPECTED RESULTS

## Overall objective

The overall objective of the project of which this contract will be a part is as follows:

• Protection and usage of cultural and natural heritage; with the valorisation of the traditional architecture and buildings in Varosi of Edessa and the Old Theater of Bitola, as well as of the cultural heritage of the two cities.

• Upgrade of touristic products and services; with the creation of useful ICT tools that operate supportively and valorise the touristic product. Through the use of new technologies, the touristic resources of the Cross-Border area to be promoted and highlighted.

• Horizontal and vertical networking among sectors that upgrade the touristic product.

• Involve stakeholders and population to the development of the touristic sector to create employment opportunities.

• Create a joint touristic brand for the CBC area, with the valorisation of the cultural heritage of the first filmmakers, Manaki Brothers and the creation - promotion of a new touristic product, which is based on cultural heritage and contemporary cultural creation.

## Purpose

The purposes of this contract are as follows:

* To collect historical text, photos, and videos about ~ 20 identified cultural-historical monuments in Bitola. A list of cultural monuments will be provided by Contracting Authority on the basis of the findings in the Study of touristic valorization of cultural and national heritage in the cross-border area, which is currently under development.
* To develop a digital map with georeferenced text, photos, and videos about ~ 20 identified cultural-historical monuments in Bitola, accessible from www and optimized for use on PC and smart devices.
* To create 3D reconstruction – computer 3D models of the exterior and interior of the Old Theatre in Bitola (demolished in 1980) and the exterior of 5 objects in Bitola Old Bazaar. The objects in Bitola Bazaar, which need to be modeled, will also be specified by Contracting Authority on the basis of the findings in the Study of touristic valorization of cultural and national heritage in the cross-border area which is currently under development.
* To develop an interactive and responsive web application (optimized for use on PC and smart devices) that will enable virtual tours through reconstructed 3D models of Old theatre in Bitola and five objects in Bitola Old Bazaar.

## Results to be achieved by the contractor

* Historical data in the form of text, photos, and videos about ~ 20 cultural-historical monuments in Bitola.
* Digital map with georeferenced collected data (text, photos, and videos) about ~ 20 identified cultural-historical monuments in Bitola.
* Digital 3D models - reconstruction of Old Theatre in Bitola and five objects in Bitola Old Bazaar.
* Interactive web application (optimized for use on PC and smart devices) that will enable interactive virtual tours through reconstructed 3D models of Old theatre in Bitola and five objects in Bitola Old Bazaar.

# ASSUMPTIONS & RISKS

## Assumptions underlying the project

Access to historical data (text, photos, videos) about cultural-historical monuments, especially for the objects to be 3D reconstructed (modeled).

## Risks

Not enough collected, or not granted access to, historical data (text, photos, videos) about cultural-historical monuments, especially for the objects to be 3D reconstructed (modeled).

# SCOPE OF THE WORK

## General

### Description of the assignment

The assignment consists of the realization of the following tasks:

- Data collection (texts, photos, videos, etc.) of the cultural-historical monuments in Bitola. We are estimating about ~ 20 identified cultural-historical monuments in Bitola that need to be analyzed. A list of cultural monuments will be provided by Contracting Authority on the basis of the findings in the Study of touristic valorization of cultural and national heritage in the cross-border area, which is currently under development.

- Development of a digital map where the collected data about identified cultural-historical monuments will be geo-referenced and presented. The map should be accessible from www and optimized for use on PC and smart devices.

- Development of digital 3D models of the Old Theater (exterior and interior) and five objects from the Old Bazaar in Bitola.

- Development of an interactive web application (optimized for use on PC and smart devices), which will allow having virtual tours in the reconstructed digital 3D models of the Old Theater and buildings of the Old Bazaar in Bitola.

### Geographical area to be covered

Bitola, Republic of North Macedonia

### Target groups

* Tour operators / Tourist Agencies
* Potential tourists to visit Bitola
* Authorities dealing with tourism development
* The general public in Bitola

## Specific work

- Data collection (texts, photos, videos, etc.) about identified by Contracting Authority (~20) cultural-historical monuments in Bitola. Additionally, data collection for the Old Theater and five buildings of the Old Bazaar in Bitola which will be digitally reconstructed (also specified by the Contracting Authority). Institutions (National Museum, State Archive, National Theater, National Library, etc.) and maybe individuals possessing such data should be visited. These data about the Old Theater and the buildings of the Old Bazaar in Bitola should be systematized and digitized.

- Digital mapping. Collected data should be georeferenced on a digital map and presented in a user-friendly format (text, images, videos). In your tendering documents (Organization and Methodology), please specify which technology you will for mapping, e.g., Google My Maps, Open Street Maps, proprietary solution, etc.

- Development of 3D models of the Old Theater and five buildings of the Old Bazaar in Bitola on the basis of collected data about these objects/ sites. The development process includes:

* Development of a geometric 3D model of interior and exterior of the Old Theater.
* Development of the geometric 3D model of the exterior of the five specific buildings of the Old Bazaar in Bitola.
* The final geometry of the 3D models must be stritcly LOW POLYGON and geometrycally correct made in quads for the realtime render engine. In addition, the polygon budget must not exceed 150.000polys for both interior/exterior of the Old Theater and 30.000 polys for each building of the Old Bazaar.
* Scene modeling: georeferencing the 3D models of the Old Theater and the buildings of the Old Bazaar in Bitola on the map of Bitola.
* Texturing the 3D models. On the basis of collected historical data generating baked photo-realistic textures made for the exterior and interior of the Old Theater, and the exterior of the buildings of the Old Bazaar in Bitola. The resolution of the Baked Textures, Normal Maps and Displacement Maps of each model should be 4K for smartphone / tablet application and 8K for the Desktop PC version. The baked textures must include all the elements of photorealism produced from the materials/shaders (diffuce colour, subsurface scattering, specularity, refletivity, refraction, Roughness, IOR, emission) and the light simulation data also (shadows, global illumination, indirect illumination, ambient occlusion) and not only the diffuse layer. The size of each file must not exceed 5Mb for both versions.
* Rendering the 3D models. Generating photo-realistic views of the exterior and interior of the Old Theater, and the exterior of the buildings of the Old Bazaar in Bitola. The resolution of the Renders should be at least 8K, minimum three render angles (Left Perspective, Right Perspective and Front) for the exteriors, and more than five renders for the interior of the Old Theater, in order to cover all the important details of the area such as ceiling, scene, chairs etc. Moreover, in order to secure photorealism we prefer render engines like Vray, Cycles, Octane or Maxwell. Furthemore,use of IES (Illuminating Engineering Society) Lighting Profiles for the lighting setup of the interior and HDRI lighting for the exteriors is mandatory.
* Animation of 3D models. Creation of walk-through animation of the photo-realistic 3D models of the Old Theater and the buildings of the Old Bazaar in Bitola. The walk-through animation should consist additional info (textual or visual) about the history of the objects (e.g., info about interesting plays in the theatre, interesting stories connected with the objects/ sites, historical photos, or videos, etc.). All the animations should be able to play in 30 frames per second.
* Development of an interactive web application (optimized for accessing through www on PC and smart devices), which will allow having virtual tours in the Old Theater and the objects of the Old Bazaar in Bitola. 3D models should be interactive photo-realistic 3D models of the Old Theater (exterior and interior) and five buildings of the Old Bazaar in Bitola (exterior). The web application should enable to the visitors during the exploring the 3D models to discover info (textual or visual) about the history of the objects (e.g., info about interesting plays in the theatre, interesting stories connected with the objects/ sites, historical photos, or videos, etc.).

Please explain in the Organization and Methodology (Annex III) how you will realize these specific works, as well as present your ideas about the contents of the digital map, 3D Models, and the web application.

The produced digital outputs (3D models, animations, web application) must comply with the rules laid down in the Information and Publicity Guide for Final Beneficiaries published by the Joint Secretariat of Interreg IPA Programme for Cross Border Cooperation “Greece-North Macedonia 2014-2020”.

<http://www.ipa-cbc-programme.eu/gallery/Files/Library/Information--Publicity-Guide_Name-change_November-2019.pdf>

## Project management

### Responsible body

Project CINECULTURE/ Municipality of Bitola

### Management structure

Project management structure consists of a project manager, financial manager, and administrative officer (Evgenija Bektash Josifovska, project manager, Marija Savevska, Financial manager, Cvetanka Ristevska, administrative officer). For the deliverables, there will be a committee that will have to check and confirm the deliverables are in accordance with this ToR.

### Facilities to be provided by the contracting authority and/or other parties

None

# LOGISTICS AND TIMING

## Location

Bitola, Republic of North Macedonia

## Start date & period of implementation of tasks

The intended start date is when the contract is signed, and the period of implementation of the contract will be four months from this date. Please see Articles 19.1 and 19.2 of the special conditions for the actual start date and period of implementation.

# REQUIREMENTS

## Staff

Note that civil servants and other staff of the public administration of the partner country, or of international/regional organizations based in the country, shall only be approved to work as experts if well justified. The justification should be submitted with the tender and shall include information on the added value the expert will bring as well as proof that the expert is seconded or on personal leave.

### Key experts

Key experts are defined, and they must submit CVs and signed statements of exclusivity and availability.

All experts who have a crucial role in implementing the contract are referred to as key experts. The profiles of the key experts for this contract are as follows:

**Key expert 1: Team leader**

Qualifications and skills: Minimum bachelor degree in engineering or administration. Master or PhD level is preferable.

General professional experience: At least three years’ experience in managing projects of complexity and nature similar to this contract. Preferable requirement at least five years’ experience in managing projects of complexity and nature similar to this contract.

Specific professional experience: At least one managed project related to 3D modeling, virtual tours, georeferencing and digital mapping or similar, with a complexity similar to this contract. Preferable requirement at least one managed project related to 3D modeling, virtual tours, georeferencing and digital mapping or similar, with a complexity similar to this contract in the last five years.

**Key expert 2: Expert for** **collection and digitization historical data**

Qualifications and skills: Preferred requirement, bachelor degree in engineering, or history and related social sciences. In the absence of a formal degree, at least five years of working experience in collection, digitization, and digital mapping of historical data.

General professional experience: At least three years of working experience in collection and digitization of historical data. Preferred requirement at least five years working experience in collection and digitization of historical data

Specific professional experience: At least one realized project with similar complexity, which includes digitalization and mapping of historical data (visual or textual).

**Key expert 3: Expert for 3D Modelling**

Qualifications and skills: Preferred requirement, bachelor degree in engineering. In the absence of a formal degree, at least five years of working experience in digital 3D modeling and animation.

General professional experience: At least three years of working experience in digital 3D modeling and animation. Preferred requirement at least five years of working experience in digital 3D modeling and animation.

Specific professional experience: At least one realized project with similar complexity, which includes 3D modeling and animation of exteriors and interiors of the buildings.

**Key expert 4: Web Developer**

Qualifications and skills: Preferred requirement, bachelor degree in engineering. In the absence of a formal degree, at least five years of working experience in interactive websites development.

General professional experience: At least three years of working experience in interactive websites development. Preferred requirement at least five years of working experience in interactive websites development.

Specific professional experience: At least one realized project with similar complexity, which includes development of interactive website for exploring 3D models.

### Other experts, support staff & backstopping

CVs for experts other than the key experts should not be submitted in the tender, but the tenderer will have to demonstrate in their offer that they have access to experts with the required profiles. The contractor shall select and hire other experts as required according to the needs. The selection procedures used by the contractor to select these other experts shall be transparent and shall be based on pre-defined criteria, including professional qualifications, language skills, and work experience.

The costs for backstopping and support staff, as needed, are considered to be included in the tenderer's financial offer.

## Office accommodation

Office accommodation for each expert working on the contract is to be provided by the contractor.

## Facilities to be provided by the contractor

The contractor shall ensure that experts are adequately supported and equipped. In particular, it must ensure that there is sufficient administrative, secretarial, and interpreting provision to enable experts to concentrate on their primary responsibilities. It must also transfer funds as necessary to support their work under the contract and to ensure that its employees are paid regularly and in a timely fashion.

## Equipment

**No** equipment is to be purchased on behalf of the contracting authority/partner country as part of this service contract or transferred to the contracting authority/partner country at the end of this contract. Any equipment related to this contract, which is to be acquired by the partner country, must be purchased by means of a separate supply tender procedure.

# REPORTS

## Reporting requirements

The contractor will submit the following reports in English in one original and two copies:

* **Inception Report** of maximum 12 pages to be produced after two weeks from the start of implementation. In the report, the contractor shall describe, e.g., initial findings, progress in collecting data, any difficulties encountered or expected in addition to the work programme and staff travel. The contractor should proceed with his/her work unless the contracting authority sends comments on the inception report.
* **Interim report** of maximum 12 pages (main text, excluding annexes). This report shall be submitted no later than two weeks before the end of the first two months of implementation of tasks. As annexes in digital format should be attached: Collected historical texts, photos, and videos; Digital map with georeferenced historical data; the Draft structure of 3D models and web application which will enable virtual tours through the reconstructed 3D models of the Old Theater and the buildings of the Old Bazaar in Bitola.
* **Draft final report** of maximum 12 pages (main text, excluding annexes). This report shall be submitted no later than two weeks before the end of the period of implementation of tasks. As annexes in digital format should be final versions of 3D models and animations - reconstruction of the Old Theater and five buildings of the Old Bazaar in Bitola; Interactive web application which will enable virtual tours and exploring reconstructed 3D models of the Old Theater and the buildings of the Old Bazaar in Bitola.
* **Final report** with the same specifications as the draft final report, incorporating any comments received from the parties on the draft report. The deadline for sending the final report is 15 days after receipt of comments on the draft final report. The report shall contain a sufficiently detailed description of the different options to support an informed decision on the quality of developed digital tools. The detailed analyses underpinning the recommendations will be presented in annexes to the main report. The final report must be provided along with the corresponding invoice.

## Submission and approval of reports

The report referred to above must be submitted to the project manager identified in the contract. The project manager is responsible for approving the reports.

# MONITORING AND EVALUATION

## Definition of indicators

* Collected historical text, photos, and videos about ~ 20 identified cultural-historical monuments in Bitola.
* Digital map with georeferenced data about ~ 20 identified cultural-historical monuments in Bitola.
* 3D reconstruction – models of the Old Theater and the buildings of the Old Bazaar in Bitola.
* An interactive web application that will enable virtual tours through reconstructed 3D models of the Old Theater and the buildings of the Old Bazaar in Bitola.

## Special requirements

None