

T4.0 Technical Guidelines:

Multimedia Content, Portals and Reservation Systems - version 1.2

Within the research project Tourism 4.0 TRL 3-6, the first research project in the field of tourism in the history of Slovenia, basic knowledge is created for understanding the tourism ecosystem and its functioning. The project is led by Arctur in consortium with leading experts from three Slovenian universities: The Faculty of Tourism Studies - Turistica (UP), the Faculty of Tourism (UM) and the Faculty of Computer and Information Science (UL) in cooperation with the Community of Municipalities of Slovenia (SOS). The goal is to establish and support cooperation between different stakeholders - local communities, tourist providers, the state and finally, tourists. Only in this way can tourism become sustainable and how we all want it to be.

In order to achieve this, a series of projects are being created under the Tourism 4.0 Partnership, which will put research findings into a real environment. Anyone can join the partnership easily and non-bindingly and decide as a member on which projects and activities she wants to participate or just become part of a movement that sets new foundations in tourism development.

The electronic form is available at: joinus.tourism4-0.org

Key Features of The Tourism Cooperative Platform 4.0

The system will use the latest technologies such as blockchain, large database processing, artificial intelligence, the Internet of Things, augmented and virtual reality. The Tourism 4.0 collaborative platform will, among other things, allow monitoring and directing the flow of people, a completely new way of storing personal data and the possibility of anonymously sharing individual interests that can be the basis for personalised tourist offer, as well as rewarding preferred tourist behaviour.

The platform, which will also be a strategic planning tool with its features, will be used by those who will properly design their tools or qualify them for interoperability, that is, to connect and share data with it.

Municipalities and their organizations that carry out development and promotional activities are increasingly encountering multimedia materials in their work, archiving these materials, and publishing them on portals that are pre-defined, everything in accordance with public procurement procedures. These recommendations were made at the request of stakeholders who are turning to the Tourism 4.0 Partnership to properly design procedures for public procurement of new tools and selecting the most suitable providers to keep abreast of technology and ecosystem developments.

The purpose of these recommendations is to alert the contracting authorities to certain elements that may be overlooked in the procurement processes and, as a rule, do not entail additional costs if they are recorded in the tender documents. Otherwise, the subsequent request for certain formats or data would present additional costs. Based on the findings of the platform's research and development, the recommendations are being upgraded over time and there is another version ahead. Members of the Tourism 4.0 Partnership are, of course, automatically informed of all steps of development. If you are not already a partner and want to be informed, you can sign up for the news via a [contact form](#)

Crucial to interoperability with the collaborative Tourism 4.0 platform is the ability to interact with a **digital ID card**, which is being developed as part of the aforementioned research project. It will provide an opportunity for an individual to sign up with service providers and build a personal profile. In doing so, personal data will be cryptographically secured and anonymised, with the possibility of complete erasure after logout. The individual profile will be structured in accordance with T4.0 standards and will allow personalisation of both the tourist experience when visiting the website and later at the destination itself.

T4.0 Ready Multimedia Materials

In order for the web portals and the offer through other communication channel to be personalised for the user, it is necessary to enrich the materials with the data that will enable this. It is very important, first and foremost, to provide new materials with metadata and attributes that accelerate, enrich search and cataloguing at various levels.

The materials must comply with the IPTC (International Press Telecommunications Council) standard, which makes recommendations for standardised metadata structures in electronic media such as image, video and audio.

The image data is stored in EXIF (Exchangeable Image File) format and is already automatically saved by digital cameras, scanners and other devices.

How to enter non-EXIF metadata:

- a) manually (field by field) via the web interface,
- b) handled via the export table,
- c) semi-automatic via the converter, which will be available on the T4.0 collaborative platform.

In order for multimedia materials to be ready for integration into the T4.0 platform, they must be equipped with the following metadata:

Photographs	Audio	Video	3D scanned and modelled objects
author name document type date file created date file modified file size dimension resolution bit depth colour mode lens specification white balance exposure ISO speed focal length flash orientation GPS lat, lang, alt (KML) GPS image direction (compass) camera model comment/notes Licence type	document type artist name date file created date file modified file size album track number genre sample rate duration loop tempo number of beats composer release date instrument comment Licence type	artist date file created date file modified file size orientation document type duration tape name frame rate frame width frame height pixel aspect ratio compressor alpha mode scene shot/take date shot comment GPS lat, lang, alt GPS image direction Licence type	Artist document type date file created date file modified file size resolution 3D type (scan, model) comment GPS lat, lang, alt Polygons Vertices Texture Materials Animated Low poly Game-ready 3D Printable-ready Licence type

All file types should be further equipped with the following attributes:

- | Title – Title
- | Description – Description
- | Categories – Categories
- | Keywords – Keywords

For visuals, it is recommended that they contain metadata about the ability to resize the image. We also recommend that all audio-visual material can be used in further use without mentioning the author (backed by a written agreement). All material should also have the exclusive transferable material copyright.

T4.0 Ready Multimedia Archive

For secure storage, easier processing and more transparent use of multimedia materials equipped with the above metadata, it is recommended to use multimedia archives that enable:

- | safe collection and permanent or time-limited storage,
- | appropriate categorisation,
- | Uploading material with all the metadata in various resolutions, formats and records to T4.0 standard-compliant web sites or portals.

The research project will generate the so-called MMA T4.0, which will provide many different ways of using and accessing materials:

- | free and restricted,
- | paid and widespread.

The client will be able to transmit multimedia material via the API.

T4.0 Ready Web Portal

The web portal should enable registration with a personal digital tourist card, which, based on the user's profile (i.e. avatar), personifies the content of the portal and complies with GDPR.

The displayed content of the offer must be equipped with metadata in order to be customisable to the user. Web portal accesses material through T4.0-ready multimedia archives.

All databases included in the catalogue offer on the website must be enriched with metadata. The entire catalogue offer must allow for the transfer of data using an API that covers the contents of metadata input fields.

T4.0 Ready Booking System

We recommend choosing a reservation system that allows you to:

- | Prepare for registration with a personal digital tourist card and transfer of each user's profile (i.e. avatar).
- | Prepare the offer (offer selection) according to each user's profile on their own or parallel web pages.
- | Ability to order services from other local providers.

We are at your disposal, should you require assistance with the procurement of information solutions yourself and have not found the answers in the [MPA Guidelines for Procurement of Information Solutions](#).

It should be noted that in the same spirit [T4.0 Technical Guidelines for the Digitisation of Cultural Heritage](#) were created to assist in the creation of digital content in the field of cultural heritage.

A support site is available for all interested to ask questions:

tourism4-0.org/support

More about the project at:

tourism4-0.org

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