

# MOVIO ONLINE DIGITAL EXHIBITIONS

AN INNOVATIVE  
TOOL FOR THE  
REALIZATION  
OF ONLINE DIGITAL  
EXHIBITIONS

# WHAT ARE THE ADVANTAGES OF DIGITAL EXHIBITIONS?

- Help to promote the cultural heritage preserved by institutions
- Are a learning tool which helps to increase knowledge
- Can make accessible an amount of documents and items that is much greater than what any physical exhibition could ever manage to display
- Can make accessible to the public the most valuable and fragile works and documents, without putting the national and international cultural heritage at risk
- Help users to enjoy documents and works that may not be accessible otherwise
- Make it possible to view parts and details of works that could not otherwise be seen, not even through the direct observation of the original
- Remain accessible over time, since they are not limited to the duration of the actual event
- If online, they can be visited by users from all over the world, who may not be able to visit an actual exhibition
- Are dynamic in nature, since they can be modified even after they have been created, both with regards to planning aspects and to their activities and contents
- Can be enhanced by the contributions of users
- Can be staged even with limited budgets, and are less expensive than actual exhibitions
- May serve as an online archive for information related to the material exhibition
- Can have positive repercussions on the tourism industry



# INTRODUCTION

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In 2010 the Central Institute of the Union Catalogue of the Italian Libraries (ICCU), in cooperation with the Technological Observatory for the Cultural Heritage and Activities, out of the desire to cooperate between archives, libraries and museums, set up a working group of experts at national level with the objective of drafting guidelines for the creation of online digital exhibitions. This work resulted in a handbook which thanks to the European project INDICATE was also translated in English and accompanied by European good practices: *Handbook on virtual exhibitions and virtual performances*, version 1.0 (August 2012).

These guidelines are the result of a detailed analysis of the online digital exhibition scenario and a benchmarking of the existing tools for their realization; they contributed to the definition of concepts and provided recommendations to the cultural institutions wanting to create digital exhibitions.

After issuing the guidelines and analysing the existing tools – still very basic – ICCU made a project proposal named MOVIO, for the creation of a kit of technical resources based on the recommendations given in the handbook, to support cultural public and private institutions in the realization of digital exhibitions and thematic routes using multimedia content suitable to provide different levels of knowledge to different categories of users and to increase the visibility of cultural masterpieces. MOVIO was one of the seven winning projects funded by the Telecom Italia Foundation within a call for proposals aiming at the valorisation of the invisible heritage. MOVIO is being further developed, adding multilingual interfaces, and features for education and tourism within the AthenaPlus project (2013-2015), a CIP best practice network started in March 2013 and ending in August 2015.



# DIGITAL EXHIBITIONS AND THEMATIC ROUTES

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An **online digital exhibition** is a hypermedia collection made up of digital items which are:

- Linked together by a common thread, an interdisciplinary topic, a concept, an idea, an anniversary, a special event, or a physical person
- Displayed in 2D and/or 3D
- Occasionally stored in distributed networks
- Made accessible through the potential provided by modern technologies, thanks to a system architecture designed to provide user-centered, absorbing experiences
- Dynamic products that can offer additional services and be updated periodically

A **thematic route** is a particular aspect of an online virtual exhibition that can be:

- An autonomous and independent product
- A way to enhance and enrich the knowledge disseminated through the digital online exhibitions.

Thematic routes do not claim to be exhaustive, but they meet the need to “suggest” to users a possible interpretative framework that will help them grasp a particular topic and discover new aspects of it.





# THE MOVIO KIT

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MOVIO is a kit because it is not just a software product but contains a set of tools and services:

an open source software named **CMS MOVIO** for the realization of online digital exhibitions

**CMS MOVIO for mobile devices** (microsite): iPhone and Android smartphones and tablets

**MOVIO APP** for the mobile platforms

**MOVIO HUB**, an online catalogue of digital and real exhibitions, available also on **MOVIO APP**

**Online tutorials and interactive training** on the use of the kit and on the implementation of the guidelines for the creation of online digital exhibitions

The project keywords are:

**CULTURAL CONTENT:** MOVIO is tailored to assure different levels of learning, from the simplest to the more complex one, in multiple languages. All the applications are integrated and embedded in a comprehensive platform.

**USERS:** MOVIO helps curators to build online digital exhibitions targeted to different audiences - the generic user interested in culture, the teacher, the student, the cultural mediator - and to interact efficiently with each of them.

**USABILITY:** MOVIO is based upon principles of usability of the offered tools and services, in line – as much as possible – with the international guidelines on accessibility (W3C and HTML5). This is why anyone, even with no or limited technical skills, can easily use MOVIO.

**MULTICHANNEL:** MOVIO is an innovative tool exploitable through the web and mobile devices (smartphones and tablets)

**OPEN SOURCE:** MOVIO is fully open source to allow the reuse of its technologies

**INTEROPERABILITY:** MOVIO is standard-based and interoperable with existing digital (cultural) platforms.



# CMS MOVIO

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**CMS MOVIO** is a Content Management System that enables web content creation. CMS MOVIO is user friendly and can be easily exploited by many categories of users. It has a set of core functionalities and building components – or plug-ins – so that it can be easily expanded with brand new tools. CMS MOVIO is unique in the Content Management System landscape because it has a semantic approach; it can be defined as a **SCMS**, that is a Semantic Content Management System.

CMS MOVIO integrates native software and Open Source components and libraries released by other developers. After the test phase, CMS MOVIO will be distributed for free under an MIT license, a free software license originating at the Massachusetts Institute of Technology (MIT).

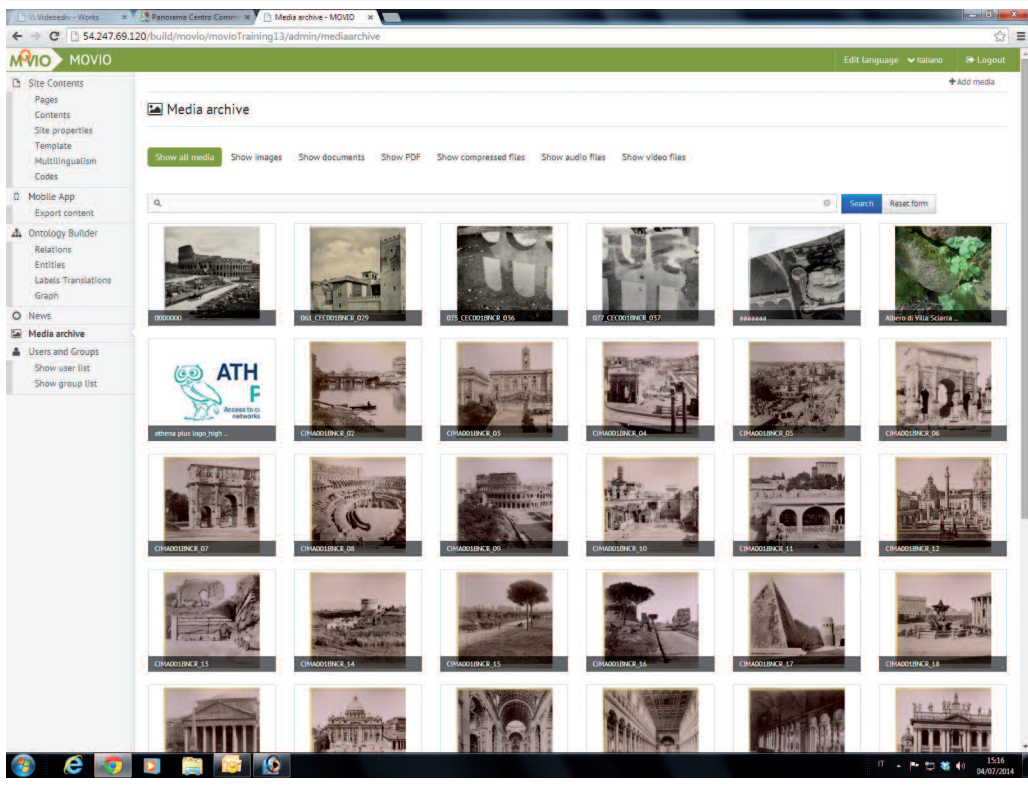
## THE TECHNICAL REQUIREMENTS

CMS MOVIO implements the LINUX operative system.

The other required software to be installed in conjunction is:

- Web Server: Apache 2.2 or newer, RDBMS: MySQL 5.1 or newer, PHP: 5.3
- PHP extensions PDO, PDO\_mysql, dom, libxml, json, GDLib
- CMS MOVIO is based on Glizy, an open source framework developed using PHP that implements an architecture which separates the different layers of the application.

Glizy is a customizable platform, very flexible and scalable, allowing developers to add new modules and to modify the existing ones by creating new functional classes and graphic templates.

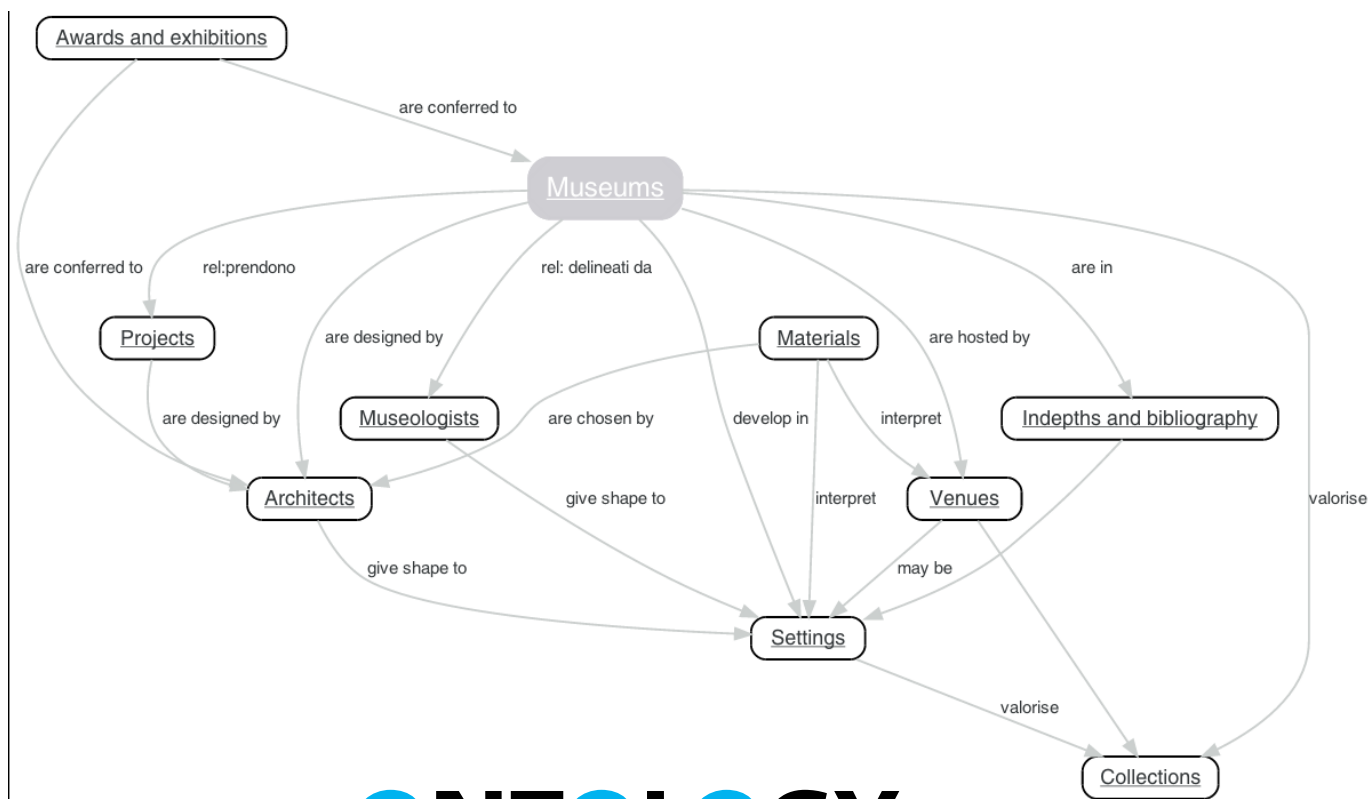


# BACK-END

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The back-end of MOVIO is the area where the curators create and manage the content of the digital exhibition.  
The back-end offers functionalities to manage:

- THE LANGUAGE OF THE CMS
- THE MULTILINGUALISM OF THE CONTENT
- THE GRAPHICAL TEMPLATES
- THE ONTOLOGY ASSOCIATED TO THE DIGITAL EXHIBITION
- THE MEDIA ARCHIVE
- THE USER PROFILES AND THE USERS
- THE PAGE TYPES AND THE RELATIVE TOOLS AVAILABLE IN THE CMS
  - traditional HTML pages
  - different kind of photographic galleries and sliders
  - zoom images
  - timeline
  - interactive maps
  - hotspots on images
  - storyteller
- THE OPTIMIZATION OF THE META-TAGS FOR SEO
- THE INTEROPERABILITY WITH MOVIO HUB AND MOVIO APP
- SOME SOCIAL FUNCTIONS



# ONTOLOGY BUILDER

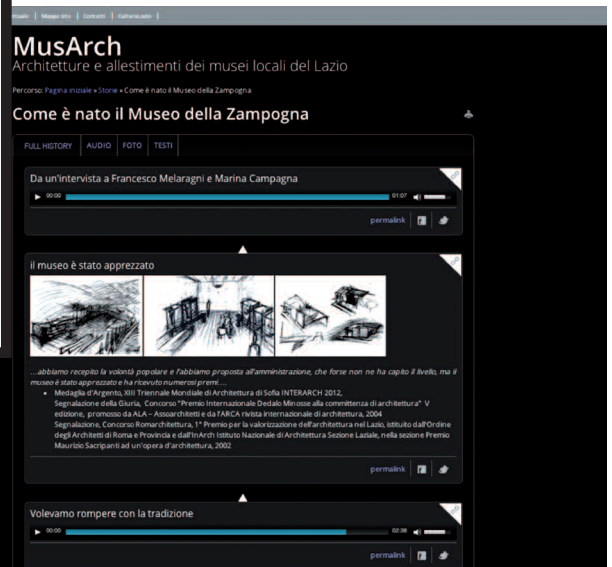
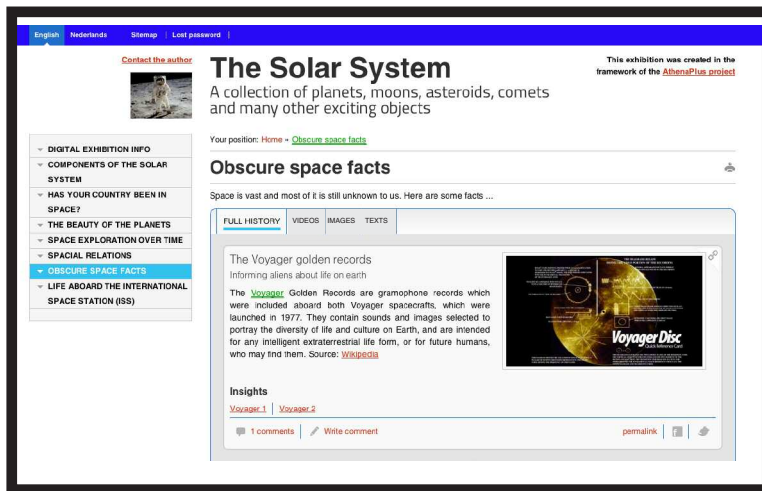
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The Ontology Builder is the tool that enables the curator to manage the conceptual map of the content to be published in the digital exhibition, and to offer the visitor new and unexpected paths throughout the exhibition.

The **Ontology Builder** describes and creates relations among different **Entities**, expressed by verbs; the user can click on the single Entity and access a list of resources that can be browsed, read, navigated and eventually played (e.g. videos).

Each Entity has a descriptive card produced in the “Module builder”. This feature allows the curator to create metadata describing the content of the Entity and include textual description, photographic galleries or other representative media.





# STORYTELLER

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This very innovative tool has been thought to “tell stories”. Typically, storytelling is composed of three “ingredients”: the story to be narrated (in our case through digital contents), the **narrator** (in our case with the support of the curator who edits the digital story, the **audience** (who will not only visualise the story, but also add it own comments).

The storyteller tool provided by CMS MOVIO is a **digital storytelling tool** where the narration can be made using a sequence of texts, images, audios and videos, and enabled user interaction.

The story is provided as a vertical narration made of different elements, but each element will be connected to form a continuous narrative path.

## Space exploration over time

Five significant dates in the [history of space](#) exploration. Source of this timeline information: [Wikipedia](#).



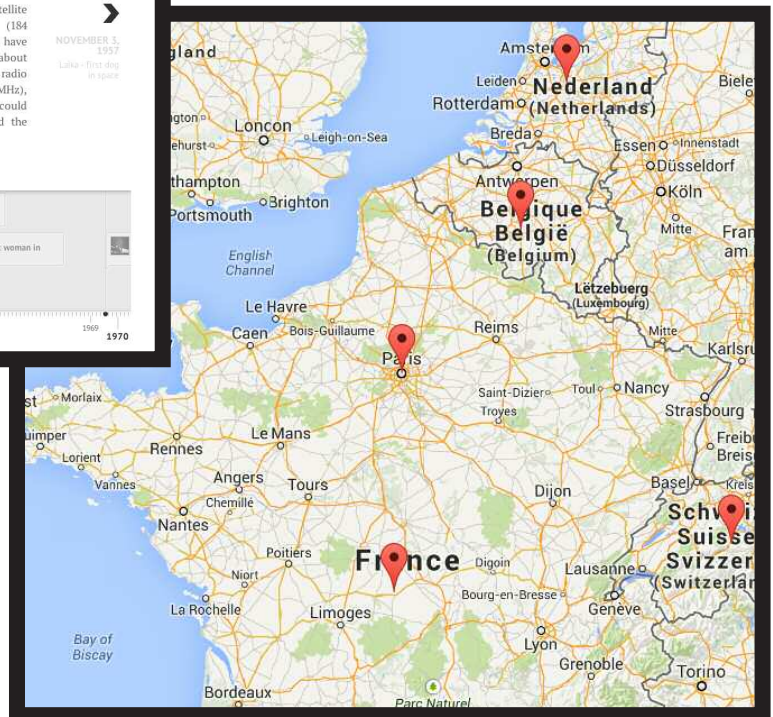
A replica of Sputnik 1 (U.S. Air Force photo)

October 4, 1957

### Sputnik 1

The first successful orbital launch was of the Soviet unmanned Sputnik 1 ("Satellite 1") mission on 4 October 1957. The satellite weighed about 83 kg (184 pounds), and is believed to have orbited Earth at a height of about 250 km (160 mi). It had two radio transmitters (20 and 40 MHz), which emitted "beeps" that could be heard by radios around the globe.

NOVEMBER 3, 1957  
Laika - first dog in space



# TIMELINE AND GOOGLE MAPS

MOVIO integrates TimelineJS, an open source tool that allows rich and interactive chronologies, which can be native or imported from a Google spreadsheet. Each element of the chronology may be enriched with video, external links or images. Consequently, each event becomes a part of a greater narration.



# IMAGE GALLERIES AND HOT SPOT

Several types of digital galleries (slider, slideshow, pageflip, gallery) allow the curator to valorise images, changing the visualisation according to editorial needs.

Through the hotspot, the curator may select some elements of a single image, and highlight them. The marked spot may be linked to a tooltip with some piece of information, to another section of the digital exhibition or to external websites.



# EXHIBITIONS' CARD

Before the publication of a digital exhibition, the curator may fill in an exhibition card (either for the digital exhibition or the connected real exhibition - if any). These information cards are useful for the final user and for the curator alike. They will feed the web service MOVIO HUB: the catalogue of all digital exhibitions realised with CMS MOVIO.





MOVIO HUB is a web service acting as a catalogue of all digital exhibitions realised with CMS MOVIO, whose information is imported automatically through interoperability procedures. But it is not only that! By registering in the service, also institutions who did not realise digital exhibitions with MOVIO, may advertise their physical exhibitions. They may fill in basic information forms, enriched with trailers and digital media, which can be enriched with users' reviews. This service will also be available through a dedicated APP, customised for tablet and smartphone.

**NEAR ME:** this function shows all exhibitions available in the surroundings of the user or around the point selected by him on the map.

**BOOKING:** MOVIO HUB includes a module, through which the user may book a visit in one of the institutions hosting an exhibition.

**AGENDA:** a calendar of the ongoing exhibitions.

**SEARCH:** it is possible to make a search in the main fields of the exhibitions cards. The results will show digital exhibitions and real exhibitions.

**SOCIAL:** MOVIO HUB integrates the possibility to share exhibitions and contents on Twitter and Facebook, and also to 'like' an item.

**MULTILINGUALISM:** MOVIO HUB supports multilingualism and allows the visualisation of exhibitions in the original language and in the English language when a translation is available.



# MOVIO APP

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MOVIO APP is the framework for the creation of mobile applications, based on the digital exhibitions created with CMS MOVIO.

The application generated with MOVIO APP is a digital guide of an exhibition that can be distributed on the stores for Android and AppleStore platforms. These apps can be also browsed off-line and updated directly from the server. They implement the usual features of touch devices, like *tap*, *swipe*, *pinch* etc., and new specific functions that make the use of MOVIO unique also with smartphones and tablets thanks to the embedding of maps, the geolocalisation of the digital resources and the possibility of sharing content with friends.

MOVIO APP has specific features that facilitate the enjoyment of cultural content like conceptual maps, photographic galleries, timeline, and storyteller.

All these tools are integrated with the most common social networks and enable the possibility of publishing comments and general user feedback.



# FAQS

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## WHAT IS MOVIO?

MOVIO is an open source kit that enables the realisation of virtual exhibitions.

## MOVIO IS FOR...

... everyone! Museums, archives, libraries, public and private institutions, cultural associations, schools, universities, students and researchers as well as any other individual user.

## I'M NOT IT SKILLED: CAN I USE MOVIO?

Of course. You can realise a virtual exhibition with MOVIO without any specific IT skill; only if you wish to customise the software and the templates you need specific expertise. What you really need is a particular care for the content in your exhibition, which must be provided with a clear and simple language, suitable to the web communication.

## HOW CAN I LEARN ABOUT MOVIO?

The information and the tutorials about MOVIO are on <http://wiki.athenaplus.eu>

- general info
- software available versions
- installation requirements
- the user manual in .pdf format
- the video-tutorials
- the announcements of the training courses
- how to subscribe to the mailing list of the MOVIO user community

## HOW CAN I IMPROVE MOVIO?

Include cards on real and digital exhibitions in MOVIO HUB, an international catalogue of digital and physical exhibitions.



**ATHENAPLUS COORDINATOR**  
Istituto centrale per il catalogo unico  
delle biblioteche italiane  
Viale Castro Pretorio 105  
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**GENERAL COORDINATOR**  
Rossella Caffo

**TECHNICAL COORDINATOR**  
Maria Teresa Natale



#### SOFTWARE DEVELOPMENT



#### TRAINING



design mteresa milani

#### INFO

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