NEREUS – Space4Tourism

The integration of digital solutions for the immersive enjoyment of cultural heritage:
GEOCART and DIGITAL LIGHTHOUSE application projects for sustainable tourism

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GEOCART
sensing innovation

DIGITAL LIGHTHOUSE

Who we are

GEOCART
sensing innovation

Geocart S.p.A. is an **engineering company** working in the fields of Earth Observation, Infrastructures, Civil Engineering and ICT, developing innovative technical services that respond to every market need.

DIGITAL LIGHTHOUSE

Digital Lighthouse S.r.l. is an **entertainment & media house** specialized in virtual reconstructions, graphic animations, digital visual effects, audio-visual products and software/mobile applications.

Our main CAPABILITIES

Displacement Maps with millimetric accuracy by Multi-Temporal SAR Interferometry Data from Space Using SENTINEL-1 and COSMO-SKYMED Satellite Missions
in order to monitor Central Urban Areas and Heritage Items of Cultural Interest.

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Digital Tourism & Virtual Reality
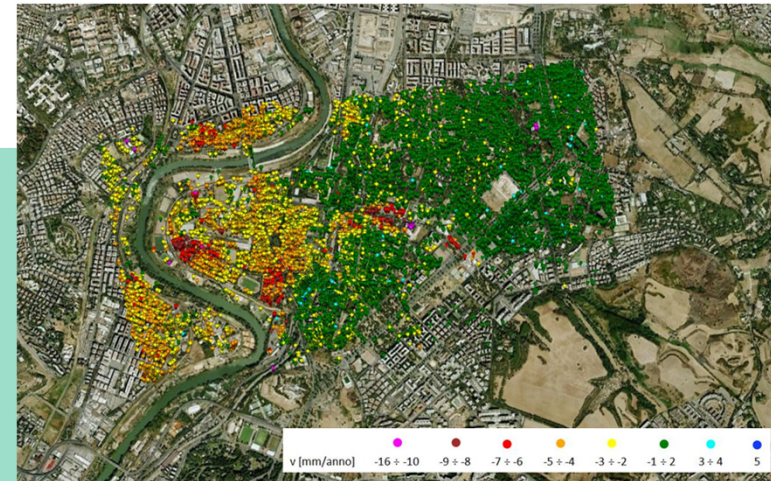
1. AOSTA DIGITALE | Innovation for History

Discover more
App AOSTA DIGITALE
Modelli 3D AR Augmented Reality
Virtual Reality VR Saint-Martin-De-Corléans Museum

Aosta Digitale is an app, available on AppStore (Apple) and PlayStore (Google), consisting of two main tools: a Videogame with games and puzzles that must be solved during an evocative journey through time aimed at discovering – "remotely" – Aosta's cultural heritage, and an Interactive Map, compass and "magnifying glass" that allow one to explore the city by following fascinating and practical themed itineraries.

The plot of the Videogame is inspired by the story of the English Romantic traveller William Brockedon who, between 1821 and 1839, stayed in Italy and in the Aosta Valley several times, as reported in his travel notebook entitled 'Illustrations of the Passes of the Alps'. It is precisely from this manuscript and verified events in his life that the narrative of the game draws its inspiration.

The player, or an enthusiastic traveller who wishes to explore Aosta by physically visiting the city, will be supported by the Interactive Map in visiting the sites of main interest, moving along thematic or customised itineraries that retrace the most culturally significant places. Augmented Reality, which can be activated either by being in Aosta or by using the app in any other place, will make the visit to the Cryptoportico, the Roman Theatre and the Church of San Lorenzo an evocative experience. Lastly, an exclusive Virtual Reality experience is available solely for visitors who physically go to Aosta: the user will be projected into an exciting journey in the megalithic area of Saint-Martin-de-Corléans, in which he or she will be able to experience, in a fully immersive mode, ritual actions and instances of life lived in carefully reconstructed prehistoric settings.

2. MATERA IMMERSIVA

MATERA IMMERSIVA is a project to enhance the cultural heritage of the Basilicata Region by proposing innovative ways for enjoying and conserving the cultural heritage of one of the most beautiful cities in the world: Matera.
The new digital borders and an integrated multimedia system are the DNA of a project with great vision for the future, through which it is possible to find digital archives and to visit in 3D mode the sites and elements of major artistic and architectural interest that fall within the historical center of Matera, in the Sassi, in the Chiese Rupestri and the Murgia Materana Parks.

Starting from the implementation of digitization, virtualization, and archiving processes for an accurate selection of contents relevant to the city's cultural heritage, the MATERA CONTENT POOL, an interactive digital system on a Cloud platform, was born.

Matera Content Pool is a cross-media portal, also based on 5G telecommunication systems, that provides citizens, professional users, companies, universities, research centers and institutions with a full range of high-quality standard content ranging from HD, 4K, 8K, and 360° videos as well as high and very high-resolution photos, panoramic, and aerial images to complete the full range of products offered with accurate 3D digital reconstructions: in total more than 8.000 digital contents.

Digital intelligence platform for immersive use of Cultural Heritage

3. SUGGESTUS

Suggestus is an innovative digital intelligence platform for the immersive use and conservation of Cultural Heritage. The platform is able to return digitized cultural content with high added value, including high-resolution 3D reconstructions that can be navigated through Apps and VR (Virual Reality) Headsets, through the application of enabling technologies 4.0. The platform is able to suggest personalized tourist and cultural itineraries through a recommendation algorithm based on semantic systems and a system of analysis and monitoring of visitor flows and the environment.

Suggestus will allow constant monitoring of the ecosystem in which it will be inserted, which is essential for the assessment of risks and dangers on the state of conservation of the assets also through the integration of information deriving from satellites.

4. QUIRINALE 3D VR

QUIRINALE 3D VR, a software for the virtual browsing of the Quirinale Palace, is the result of a prestigious project that envisaged the digital reconstruction of the rooms on the Quirinale's Main Floor (Piano Nobile) through by high-resolution laser scanners and cameras as well as advanced computer graphics techniques applied to the data collected.

QUIRINALE 3D VR enables a unique and amazing experience of immersive browsing. The visitor is free to move in the reconstructed environments in the finest details and to observe and interact with objects and artwork. This software has PC and notebook monitor compatibility view in addition to the immersive mode through Oculus Rift headset.
The first version of this software enables browsing through eight rooms on the Main Floor of the Palace. Further automatic software updates with new rooms opening and implementation of new functions will be soon available.

Positive external effects

AN INTEGRATED WORKING TEAM: ENTERPRISES & RESEARCH BODIES

Remote visit
A preview to encourage the real visit

Museum itineraries
Virtual reality stations in museums to complete the museum itinerary

Beyond reality
Ability to view details no longer present in reality (e.g. decorations of a church gone lost or damaged) also enriching the visit with experiences not possible in real life

Inclusion
Possibility for everyone, including disabled people, to visit sites difficult to reach

Beneficiaries

- Citizens
- Tourists
- Students
- Elderly, disabled people and children
- Local and State Public Administrations
- Enterprises
- Universities and Research Institutions
- Technicians and Professionals
- Museums
- Touristic Guides
- Local Promotion Agencies
- Cultural Associations

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