



BRIDGES

TRAINING, LEARNING AND EDUCATIONAL ENTERTAINMENT IN EXTENDED REALITY: FIREFIGHTERS AND MUSEUMS HAVE NOW ONE MORE TOOL WITH BRIDGES

The BRIDGES Immersive solution has been deployed at the Airports of Berlin and Athens, initiating an innovative approach in firefighter training using extended reality technologies.

In addition, the innovative platform has been deployed at the Foundation of the Hellenic World in Athens allowing visitors to 'immerse' themselves in an ancient Athenian house.

The team behind BRIDGES

The BRIDGES solution is created by a high-profile international consortium, coordinated by the Italian Maggioli Group, that brings together the resources of 9 participating organizations from 4 European countries and is well-balanced in terms of involvement of industrial partners (large companies & SMEs): Maggioli (Italy), Illusion Walk (Germany), Bolt Virtual (Greece); academia and research institutions: National and Kapodistrian University of Athens (Greece), Technical University of Vienna (Austria) in cooperation with Fondazione Sistema Toscana (Italy), Athens International Airport (Greece), Berlin Brandenburg International Airport (Germany) and Foundation of the Hellenic World (Greece). The project is funded under the Horizon2020 ICT - Information and Communication Technologies program.

BRIDGES. A step forward in the world of XR

BRIDGES stands for “A hyBRID (physical-diGital) multi-user Extended reality platform as a stimulus for industry uptake of interactive technologieS” and focuses on the areas of training and informal learning, culture, and entertainment, as it is widely recognized that immersive XR is an extremely promising tool for the enhancement of the user’s experience in these areas, and an optimal medium for achieving enhanced performance, engagement, a high level of effectiveness, and the transfer of skills and knowledge into the real world.





The BRIDGES solution is based on the Immersive Deck® platform, developed by Illusion Walk and Technical University of Wien, which is now further enhanced and developed into a turn-key product with widespread applicability that may act as a stimulus for the uptake of interactive technologies by the industry. The solution is complemented by an evaluation framework and a training assessment methodology.

Training in real world simulations

There is no doubt that the work of firefighters, despite all the precautions, presents numerous risks: in classic fire-fighting simulations there is the possible damage to the environment (for example due to the combustion of toxic materials) in addition to the risk of an accident. Furthermore, the economic aspect is not of secondary importance because it is often necessary to have reconstructions of buildings, vehicles, etc in order to make simulations more realistic as possible.

BRIDGES represents a concrete help for firefighting units by reducing training costs and supporting them in maintaining their efficiency and responsiveness in the event of an emergency. **Firefighters have started testing the potential of the BRIDGES platform, at the international airports of Berlin (Flughafen Berlin Brandenburg-BER) and Athens (Athens International Airport).**

One of the main airport training scenarios may be **an emergency with an aircraft**, either after a take-off or landing accident or during the refueling process. The standard procedure entails sending a first team to the site, which assesses the situation and coordinates further action. In the XR, **the trainer is able to set up the virtual session** by choosing a few criteria, which determines the rescue scene and its level of difficulty: **airplane size, fire level, smoke density, quantity, type and location of passengers and injured.**

Indeed, the difficulty levels are individually adjusted for the different teams according to their abilities and needs. The trainer observes the simulation through a monitor and a “virtual” radio connection. Additionally, XR-based training can help to acquire **spatial knowledge of an environment** and **can be repeated an unlimited number of times.**

XR in cultural applications

The BRIDGES platform is also designed for the cultural and **museum** sector, covering the field of **education and entertainment.** The XR platform is being tested at the **Foundation of Hellenic World in Athens** where users can experience the multisensory (visual, auditory, and tactile)





experience of **'living' inside an ancient Athenian house**. Further efforts in the coming months will be aimed at improving the experience by incorporating effects such as **wind, heat, smell, vibration**.

Still being faithful to its mission of protecting heritage and cultural knowledge, today institutions such as museums are renewing themselves, passing from being places of pure exhibition to places of experience and exchange between cultural heritage and the public.

The use of increasingly advanced technology meets the need of museums to broaden their offer and to attract new audiences.

The use of XR technology allows a cultural institution to offer its visitors a highly immersive and at the same time highly educational experience. This is why the Foundation of the Hellenic World party, stressed that, when they opened the doors to BRIDGES, it was important not only to support the technological development phases of the platform, but also to closely collaborate with developers in order to create an authoritative scenario, validated by historians experts on Ancient Greece. Only in this way visitors will be able to enjoy an immersive experience that also conveys a culturally appropriate information.

BRIDGES is currently undergoing careful and intense testing to be ready to conquer the market. More info on www.bridges-horizon.eu

BRIDGES consortium is composed by:

Gruppo Maggioli - Coordinator (Italy) is the main Italian company provisioning Public

Administrations, offering a broad range of highly professional solutions in several domains (including training and museums). It provisions more than 6,000 Municipalities (out of 8,048) in Italy, more than 3,800 museums and 1,500 SMEs. Gruppo Maggioli is the BRIDGES Project Coordinator and thus lead Project Management and Quality Assurance but also Exploitation.

Illusion Walk (Germany) is a company, founded in 2013, specialized provider of walk-in and multisensory virtual reality platforms, and developer of the Immersive Deck® that allows multiple users to move freely across multiple rooms and interact with real objects. It will be involved in many tasks throughout the project lifetime, especially leading Pilot-specific Platform Deployment & Demonstration: the design, production of assets and programming for the training use case.





Bolt Virtual (Greece) is a VR software development company, market leader in Greece, of applications in education, healthcare, cultural heritage, tourism, gaming and marketing. It will participate in several tasks and it will be leading the User Experience design and production of assets (3D graphics modelling & animation, sound, etc.) as well as the development for the informal learning use case.

National and Kapodistrian University of Athens (Greece) is a major public research University and the oldest tertiary education institution in Eastern Mediterranean area. It consists of five Faculties (Sciences, Health and Medicine, Law Economics & Political Sciences, Philosophy, and Theology) and 29 academic departments with more than 51,000 registered students. It will be leading the User-Centered & User Experience Design and the Evaluation and replicability assessment bringing its methodology and expertise in designing the scenarios and the evaluation procedures.

Technical University of Vienna (Austria) with its Institute of Visual Computing and Human-Centered Technology is one of the leading institutes in research and development in the areas of computer graphics, computer vision, virtual and augmented reality, visual analytics and human computer interaction. The institute's research is based on tight cooperation with Austrian and international academic partner institutions and industrial partners. For these reasons, it will lead the Platform Agile Development.

Fondazione Sistema Toscana (Italy) is a non-profit participative foundation created in 2005 by the Tuscany Region with the aim to promote the Tuscan territorial system through integrated multimedia communication tools. It carries out national and European projects in the field of web 2.0, digital communication, territorial marketing, and online tourism promotion. It will lead the Dissemination and Communication activities.

Athens International Airport (Greece) is a pioneer international Public-Private Partnership of its type, being the first major greenfield airport constructed with the participation of the private sector. It will host one of the three pilots by providing specific requirements for the airport rescue & firefighting training case.

Berlin International Airport (Germany) operates Schönefeld Airport and Tegel Airport in Berlin, Germany through its subsidiary BFG. With approximately 34.7 million passengers, it is the third largest airport location in Germany. It will host one of the three pilots by providing specific requirements for the airport rescue & firefighting training case.





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Foundation of the Hellenic World (Greece) founded and funded by the family of Lazaros Efraimoglou, is a privately funded non-profit cultural institution based in Athens. Its foundation was ratified in 1993 by unanimous vote of the Hellenic Parliament. Its mission is the preservation of Hellenic history and tradition, the creation of an awareness of the universal dimension of Hellenism and the promotion of its contribution to cultural evolution. It will host one of the three pilots by providing specific requirements for the informal learning / edutainment case.

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