R&D PROJECT

Title of the project

Immersive, Interactive and Itinerant Space for the Collaborative Management of Construction Projects

Acronym

SCAVE

Content of the project

The architectural and civil engineering projects require interdisciplinary teams where communication and the tools that enhance it are essential to guarantee an optimal work- flow.
One of the systems that has required more relevance is "Building Information Modelling" (BIM), recently supported by the Spanish Ministry of Development. BIM has the vocation of integrating all the elements of the complete building cycle and it consists of various levels of maturity based on the following variables: representation, collaboration and integration.
SCAVE will be an original product that does not exist on the market and that will allow monitoring of construction sites by applying virtual and augmented reality technologies.

General objectives

The main objective of SCAVE is to project, build and validate an immersive, interactive and itinerant space (hereinafter called SCAVE), which allows promoting collaborative work in interdisciplinary teams for the tracking and monitoring of remote construction projects in its three different development phases: project, construction and maintenance, generating a multiplier effect in the use of BIM and following the EU guidelines regarding its adoption and promotion.

The specific objectives of the system are the following:

- Development of a monitoring, supervision and communication tool to optimise the execution of works.
- Better communication between construction workers, contractors and clients through a real, virtual and augmented presence.
- Early detection of project mistakes, which will allow mitigating the consequences of imbalances between what is projected and the execution and the execution on the ground.
- Scaling of the access to formative and procedural guides about materials and components characteristics, as well as about construction procedures.
- Increased optimisation of construction monitoring.

Results and conclusions

It is well known that BIM will become an indispensable requirement in any new construction project: working with 3D models instead of projections, and with animations and changing information instead of fixed and static snapshots. BIM will allow offices to have a digital recreation of the work to be carried out.
BIMtable was created with the aim of connecting the industry with digital technologies where they are most needed: on the ground, on site. BIMtable integrates tools, devices and information and makes them available through adaptable access to the needs and skills of construction workers. BIMtable offers:

- BIM viewer: a device for viewing, commenting and sharing BIM information, 3D models, schedule, costs and other dimensions.
- Quality control: access to on-site progress via camera connection, videoconferencing systems and direct comparison between planned and executed model.
- On-site digitalisation: almost immediate updating of the construction state, modification of plans, registration of delivery notes and digital inspection, through access to the digital project.

BIMtable is a dust-tight and waterproof system, incorporating four gas pistons that assist the user in positioning the encapsulation. Finally, fibreglass phenolic panels are fire-resistant, damp-proof, wear resistant, highly impact and scratch resistant, and highly resistant to chemicals.

BUSINESS AREAS
Area Infrastructures
COMSA, S.A.U.

DURATION
2016 - 2019

BUDGET
Consortium Budget: 891.689,00 €
COMSA Budget: 393.644,00 €

KEYWORDS
BIM, management, monitoring, construction, virtual and augmented reality, software

COORDINATOR
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EXTERNAL FUNDING

GOBIERNO DE ESPAÑA · MINISTERIO DE ECONOMÍA, INDUSTRIA Y COMPETITIVIDAD

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