

Sopra Steria Digital Interaction Spain

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Industry 4.0

- Industry 4.0 is the term we use to refer to the fourth industrial revolution, a change in the way of organizing productive means consisting of the introduction of digital technologies in industry.
- Industrial Digitalization is a transformation towards the implementation of hyper connected smart factories where it is possible to access and modify, in real time, the behavior of the different elements that make up the system.
- In this fourth industrial revolution technology is put at the service of industry to improve the efficiency, productivity, quality and safety of industrial processes.





Mixed Reality in Real Environments

Applying to all professional sectors, **training will be one of the great spaces in which Mixed Reality will continue adding presence.** From small business to large corporations like NASA itself, today there are already many companies that have training plans for their employees through Virtual Reality devices.

In addition to offering a technology with many possibilities for transmitting knowledge and interacting with it, **once the investment in each training plan is made, the cost of training for employees is reduced.** All this, with a **much more attractive and effective environment for the worker, which has more motivation, interactivity or connectivity.**

In this way, the employee can be trained in the use of heavy or dangerous machinery, or know the occupational hazards of certain facilities, without facing the risks associated with their handling during the training period.

Also, in the field of training is its application to the health field, with the recreation of operating theatre simulators in which doctors or interns can intervene and learn as if they were facing a real situation.

We now turn to analyse each of the Industry 4.0 solutions that incorporate Mixed Reality Optimization of designs with Virtual Reality and Augmented Reality



VR & MR

- With virtual reality glasses, it is possible to place an operator in a virtual environment where a machine that has stopped production, so that it checks its operation and solve the incident as if it were found in the real factory environment is displayed.
- Virtual and Mixed Reality are close to the field of training, offering industrial companies a much more optimal and economic tool for the training of their workers. Well, thanks to it, it eliminates the cost of the technician who must do the training to each worker, optimize the times and avoid having to stop production to train these workers or allow them to access the machines to practice their use, thus being a fantastic tool for the Knowledge Transfer from one technician to another.
- This technology allows operators to experience situations of realistic risks in the first person, improving the perception of risk detection and greater awareness of the consequences thereof.





Benefits

Security benefits of mixed, augmented and virtual reality at work:

- Improves operational performance.
- Providing information and data within the field of vision of the operator.
- Reducing the latency and cost of paper-based processes.
- By solving anomalies in real time and creating digital control routes.
- By connecting workers, both locally and remotely.
- Facilitating activities for compliance.
- Providing documentary procedures for the analysis of causes.
- Improving the quality of the scale processes.
- Integrating with existing systems and data sets.



Benefits

Increase the value of labor force and industrial safety:

- Allowing to capture and store procedures and tasks.
- Providing access to training courses and recorded tutorials.
- Facilitating on-the-job training and cross-training.
- Maintaining and transmitting the knowledge of the most experienced staff.
- Accelerating the training of new workers for qualified or complex jobs.
- Improving the use of personnel by managing workloads



Sopra Steria as Digital Enablers

As Digital Enablers, it is our responsibility to guide and accompany every client in the journey towards Digital Transformation.

It is our duty to properly identify the best digital solution to solve, improve and handle the needs in the industry, whatever nature they might be, security, training, inspection, logistics...

This way we can make sure that we are guiding our client towards an exciting, digital future.





Mixed Reality Training

Hydraulic Loop





Sopra Steria as a Microsoft Mixed Reality Partner

Thanks to this project, Sopra Steria was able to become an official partner in the Microsoft's Mixed Reality Partner Program, which has given us the opportunity to further tune our skills in Mixed Reality development.



Microsoft
Partner

Mixed
Reality



Tecnatom & Sopra Steria.

- Since 2016 in Tecnatom we are immersed in a digitalization process of our training programs. This process is based on SOUL our knowledge management and transfer knowledge platform, This platform turns knowledge into a profitable asset for our company, focusing learning in the trainees.
- Through this platform we integrate advanced training tools (360, 3D models, MR , VR...) like this project, which was designed with one of our best partners, Sopra, which is currently our trusted technologists to work in these challenges.
- Currently we use internally as on the job training in our field simulators for new instructors. The first feedbacks are being very positive.





Solutions Architecture

The elements which compose this architecture are:

- .MS Hololens: Device which shows holograms positioned IRL with the capability to interact with them.
- .MS Azure. Environment in which all the different components of the App are held.
- . REST Services. They are in charge to establish the communication between the glasses and the rest of the components of the App (Data bases and web).





Management Web & configuration Database

. Management web:

This web is outside of the reach of the first stage of the Project, but we think is necessary to define its basic functionality to better understand the purpose of the Project. The web Will be the interface with the user and Will be in charge to manage the actions and permissions of the training courses.

The functionalities are as follows:

- User and user role management (Admin, instructor, student)
- Training session management - Session assigned tasks management
- Capability to see in streaming what the user is seeing in that moment.
- Send in real time tasks to one or several students.

. Configuration database.

This data base will have the info of the tasks and the different training courses held in the previously described web



Tecnatom Mixed Reality Video



Thank you
very much

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Delivering Transformation. Together.