GIS and Augmented Reality to boost field activities and improve work safety

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20 years of experience in Field Service and innovation

Field Service

Planning, optimization and monitoring of activities on the field or in production plants

GIS

Advanced integration with Geographic Informational Systems (GIS)

Augmented, Mixed, Virtual Reality

Disruptive solutions using cutting-edge technologies

Augmented, Mixed, Virtual Reality: what are they?

Augmented Reality

Overlapping of textual, graphic and multimedia information to the world observed by the user

Mixed Reality

Integration of digital objects into the physical world. It enables users to interact with the artificial objects displayed within their field of vision

Virtual Reality

It provides an artificial environment where VR users immerse themselves and interact with multimedia content

Three technologies transforming the way people interact with the physical world, bringing user experience to a whole new level

Wearable technologies & AR solutions

"By 2020, more than 75% of Field Service organizations with over 50 users will deploy mobile apps that go beyond simplified data collection and add capabilities that help technicians succeed.

Wearables and immersive technologies will play an important role across training, production and service delivery. "

Gartner.

Available on multiple Head-mounted Displays

Augmented Reality

RealWear HMT-1   Epson Moverio BT-350   Vuzix M300   Tablet   Smartphone

Mixed Reality

Microsoft HoloLens   Microsoft HoloLens 2   ThirdEye   Daqri Smart Glass   Vuzix Blade AR
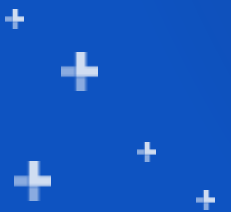
Virtual Reality

HTC Vive   Samsung Gear

Extended Field Solution – Application areas

Extended Collaboration

Broadening field working modalities and creating a cooperative virtual environment, as to support the quality standards and expertise provided by the operators involved

Extended Maintenance

Supporting field technicians in their daily tasks to enhance quality, efficacy and safety standards, while sharing the company know-how

Extended Training

Introducing a new dimension to training activities, providing innovative, safe and cooperative training sessions

Extended Collaboration

It expands the concept of collaboration between users, introducing innovative ways of working

- Real-time content sharing and manipulation, with multiple users
- Advanced toolbox for annotations
- Multimedia and virtual content sharing
- Tracking of the tasks performed and knowledge creation

Increase in
first-time fix rate

Improve in
remote resolution rate

Enhance in
technicians' productivity

Extended Training

It makes possible to conduct training sessions both in Mixed and Virtual Reality

MIXED REALITY

- Remote presentation, by involving the attendees, and using virtual objects
- Interaction among remote users, allowing them to increase their product knowledge
- Mentor-attendee roles-ready

VIRTUAL REALITY

- Selection of multiple scenes based on the recognized asset
- 3D scene editor
- Navigable Resolution Procedures
- Actions based on 3D models

| Increase in trainee satisfaction | Savings in training costs | Reduction in learning time |

Extended Maintenance

It improves quality assurance and enables field technicians to complete tasks quicker

- Configurable Workflows
- Step-by-step interactive procedures
- 3D and Holographic objects and multimedia content
- Online and offline capabilities
- Vocal hands-free debriefing

| Improve in efficiency | Decrease in mistakes | Reduction in injuries at work |

Augmented, Mixed and Virtual Reality in business

Extended Maintenance – GIS

The union between GIS and "virtual" allows the user to visualize spatial data in the real world, which is enriched with information otherwise invisible

- Realistic 3D visualization of geospatial data
- Visualization of hidden assets
- Impact assessment before creating new plants and networks
- Reduction of time to identify on-field assets

Full integration with the market-leading GIS

High and easy configuration of assets' graphic visualization

Dynamic presentation of content, with tracking and positioning features

Extended Maintenance – GIS
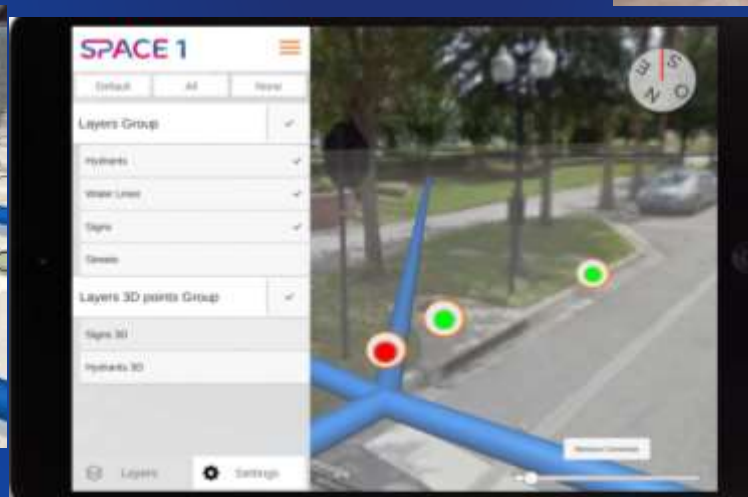
Flooding POC

Support to pipelines inspection

Use of Augmented Reality to support the operational processes performed on the field by the maintenance teams

One of Europe's main natural gas infrastructure companies, leading in gas transport and storage
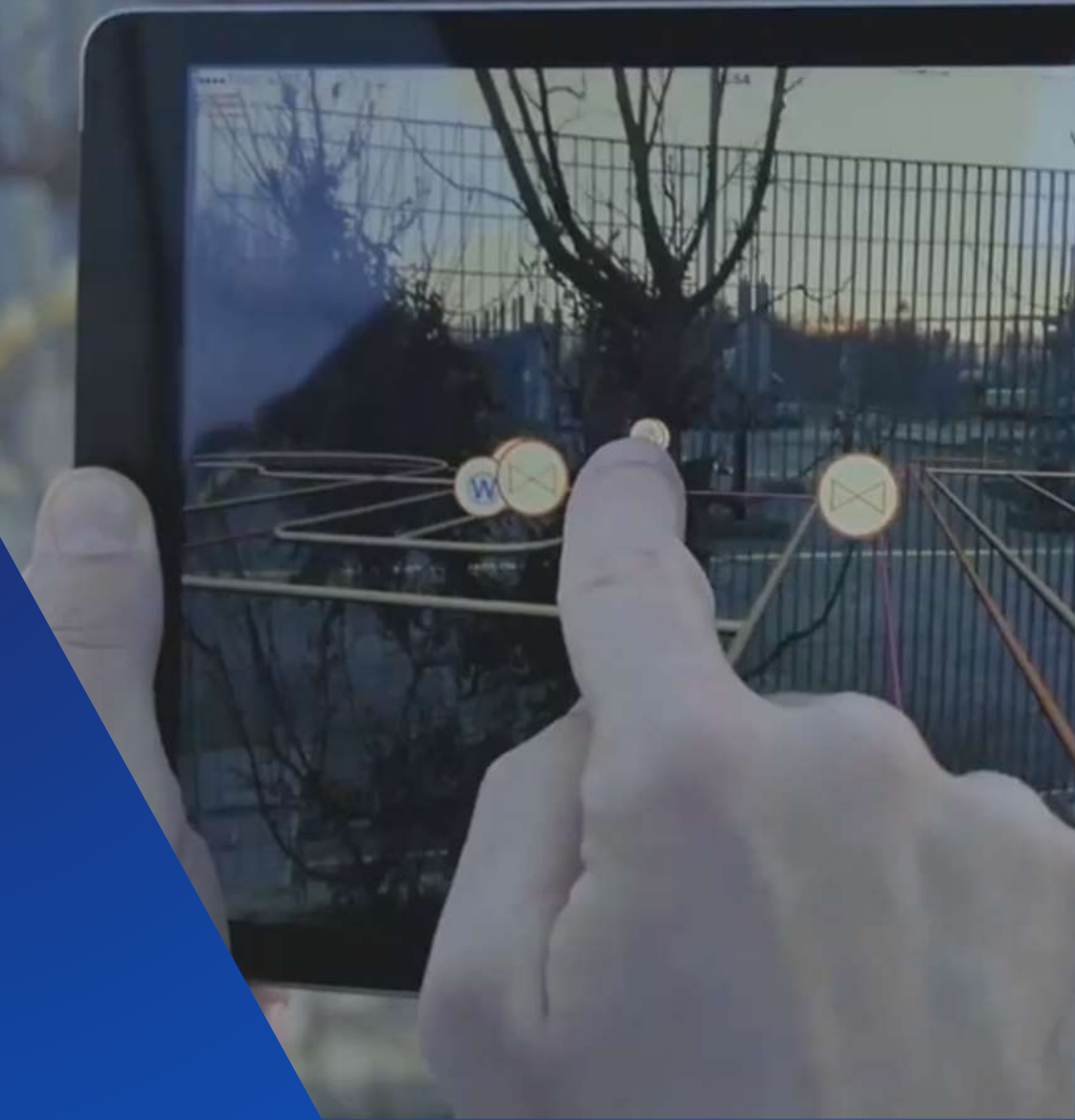
Visualization of networks and assets

Technical information on assets

Tracking and positioning

Dynamic and parametric adjustment of contents

Integration with the company's Field Service and GIS solutions

Support to pipelines inspection

Real time monitoring for strategic mining

Reshaping the mine planning process by centralizing data into an interactive and stunningly visual MR experience

Remote sharing of an interactive and up-to-date geological mine hologram

Complex geological analysis to better highlight and identify areas at risk of collapse

Real time visualization of truck loadings, thanks to IoT integration

Multi-level holograms allowing to deeply visualize a subset of mines and their associated data
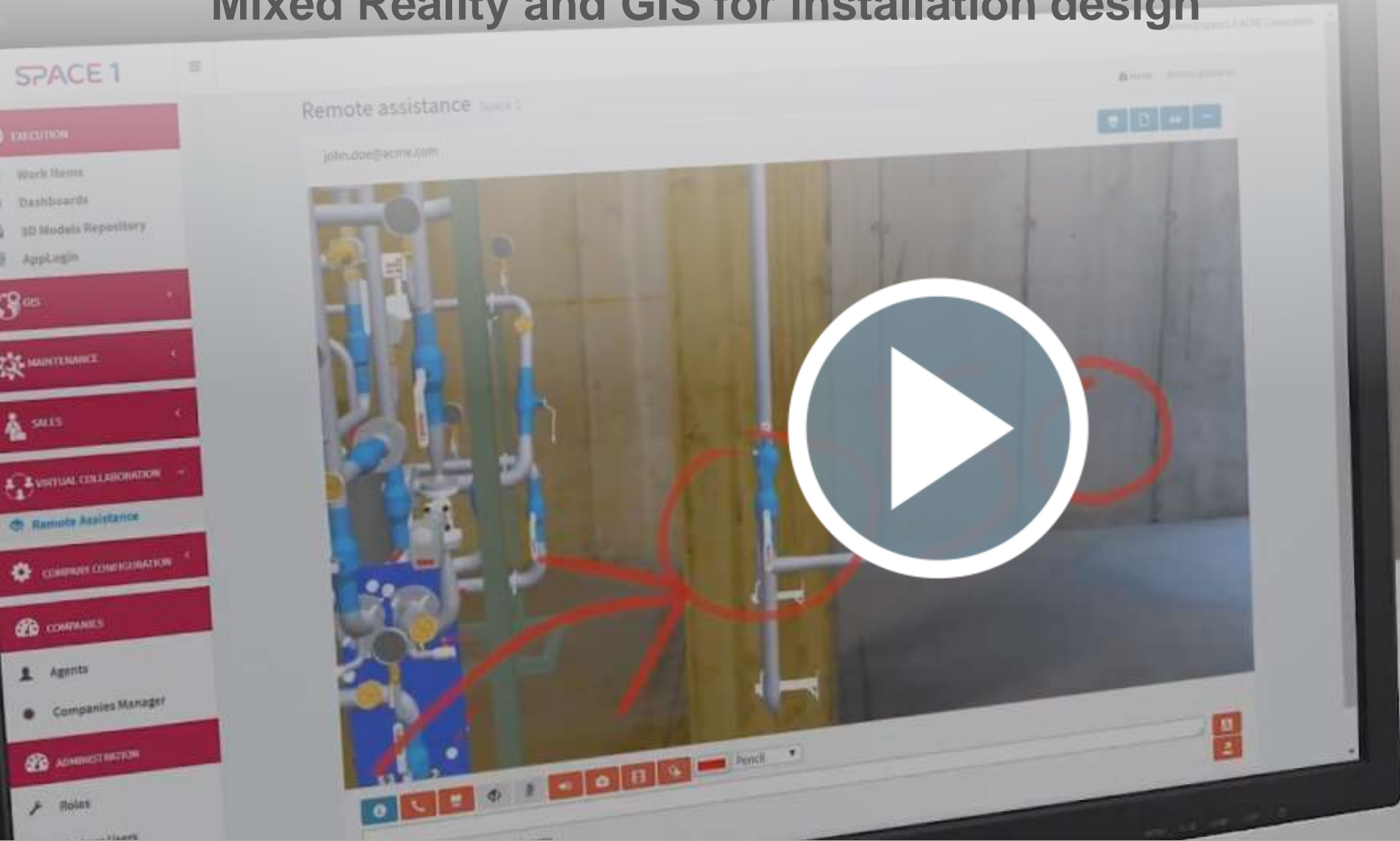
Vehicles tracing, to identify the best routing strategy

Real time monitoring for strategic mining

Mixed Reality and GIS for installation design

ECOfinder 3.0
Data acquisition

- **Artificial Intelligence at the service of waste collection**

TELLUS
Geographic Information Systems

25 years in environmetal services

GIS

Design, constructionand maintenance ofadvanced cartographic solutions

Environment

Solutions for monitoring, control and planning services of transport and waste collection
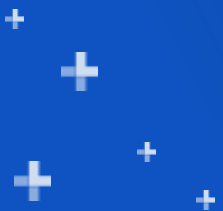
Mobile solutions

Mobile solutions supporting field workers to increase efficiency of operations

Customer need

Identify a system that can automatically recognize and report road damage using a mobile device with a camera installed on vehicles.

The aim is to obtain a monitoring system by exploiting the paths of waste collection vehicles.

Thanks for your attention

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