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?

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

**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.
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.”
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
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
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
ECOfinder 3.0
Data acquisition

• Artificial Intelligence at the service of waste collection
25 years in environmental services

GIS
Design, construction and maintenance of advanced 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
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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