

Use Case Scenario

3D Visualization in Hazardous Environments

aegex10™ Intrinsically Safe Tablets + AVEVA Applications





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Aegex10 IS Tablets + AVEVA Applications

An offshore liquid natural gas operation is seeking to improve the productivity and safety of its operations, while decreasing downtime and inefficiencies. With 24-hour production generating myriad data feeds about all aspects of operations, workflow and functionality, the facility operators would like to utilize that data better to understand and improve performance. However, they are not currently able to view the real-time status of the entire facility nor the performance of individual components as part of the overall operation because of the asset's sheer size, complexity and regulatory restrictions that prevent the use of certain electronic equipment, including computing devices.

The Challenge

The offshore operation is classified as a regulated hazardous location because highly flammable materials are constantly present in liquid or gaseous forms. Thus, any electronic equipment used in the facility must be certified intrinsically safe for ATEX Zone 1, meaning it cannot produce a spark sufficient to cause an explosion. Personnel performing inspections, maintenance, or other tasks in the facility must move through various hazardous zones as they go about their work. Because the team cannot bring typical computing devices into the hazardous zones, individuals currently write down information with paper and pen onsite – including data on pump volume and performance, gauge pressure, and other metrics. They then use various software on computers in an off-site location to plan solutions for future implementation. The process is, thus, time-consuming and causes delays to optimizing productivity.

Requirements

The company is seeking a mobile, Cloud-based solution that will allow operators to:

- Visualize all parts of the asset in 3D and in real time
- Identify anomalies or specific problem areas of the asset
- Bring appropriate software into hazardous areas of the asset to address problems
- Communicate in real time with teams on site
- Access documentation from inside the most hazardous areas
- Report live status of asset components and share this information with teams onsite

To perform these functions efficiently, facility operators need a mobile device that is specially certified for Zone 1 areas. This must be equipped with appropriate software that allows the team to visualize the entire asset in order to complete inspections, maintenance and turnaround projects quickly and efficiently.

The Proposed Solution

The proposed technology solution for this LNG facility is the Aegex10 Intrinsically Safe Tablet in conjunction with LFM NetView™ and AVEVA NET™ software.

The Aegex + AVEVA solution enables the facility to:

- ✓ operate efficiently without risk on hazardous sites
- ✓ increase transparency
- ✓ increase plant uptime
- ✓ improve execution of upgrade projects

Resulting in:

- ✓ safer operations
- ✓ improved productivity
- ✓ enhanced regulatory compliance and audit
- ✓ reduced risk through early identification of potential issues



Hardware

Using the Windows-based Aegex10 IS Tablet, operators can enter the most volatile hazardous areas (ATEX/IECEX Zone 1; Class I, II, III Div 1) and use all relevant Windows 10 applications.

Certified for ATEX Zone 1 hazardous locations, as well as equivalent areas in North America (Class I, II, III Division 1) and international locations (IECEX Zone 1), the Aegex10 operates on Wi-Fi or 4G LTE from any hazardous location around the globe on a unified platform.

The 10.1-inch Windows-based tablet is rated IP65 rugged for industrial use, yet is lightweight and priced as low as non-certified devices. Its Windows 10 operating system gives users uniform access to the Microsoft cloud, plus apps and services, including custom-designed software like AVEVA applications.



The Aegex10 IS Tablet

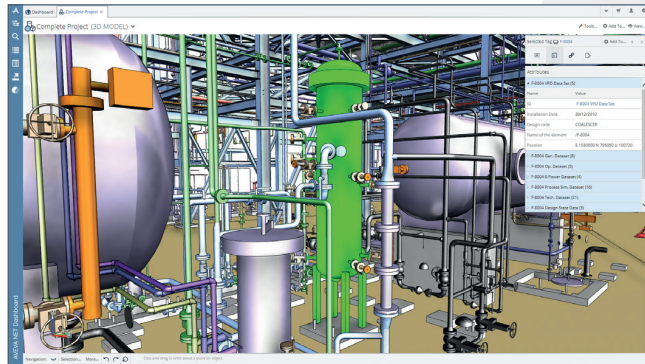
Software

LFM NetView provides a web-based 3D laser scan view of an entire industrial asset, whether it be an LNG operation, oil refinery, chemical plant or other large-scale facility. Optimized for Google Chrome, LFM NetView can be accessed online from any location. Microsoft Azure can deliver the laser scan data via the Cloud. LFM NetView also has an offline mode for viewing and manipulating data when outside a Wi-Fi area.



LFM NetView

AVEVA NET is a web-based solution for visualizing and collating data and documents of all types. The AVEVA NET Dashboard provides an interactive, navigable view of 3D models, laser scan data, digital photographs, 2D CAD drawings and ERP data. AVEVA NET integrates with LFM NetView for high-quality visualization of laser scan data.



AVEVA NET

Using the Aegex10 IS Tablet, personnel can now enter the most volatile hazardous areas (ATEX/IECEX Zone 1; Class I, II, III Div 1) of the facility and assess any situation without fear of causing an explosion.

With the Aegex10 IS Tablet running AVEVA software, operators can:

- Bring LFM NetView and other apps into Zone 1 hazardous locations of plant, power and marine facilities
- Quickly locate assets and access all relevant information via AVEVA NET to assess and resolve issues
- View both real-life imagery and LFM NetView's 3D visualizations on the tablet anywhere inside the asset and share with teams in real time
- Deliver scalable models and immediately share data directly from the worksite via Microsoft Azure Cloud services
- Open a Skype for Business line to speak directly with teams and show the item in question in a live view
- Use Exchange/Outlook to email data

Having access to critical asset information via LFM NetView and AVEVA NET on the Aegex tablet means that personnel can address issues in real time. They can share information with the rest of their organization via Azure Cloud-based delivery, including from inside hazardous industrial locations. This new way of working dramatically reduces downtime and improves productivity.

AVEVA apps sync easily with the company's existing IT systems, and can be used anywhere in hazardous locations via the Aegex10 IS Tablet. They are also viewable offline when wireless networks are not available. The solution is transferrable across different geographies since the Aegex10 IS Tablet is certified worldwide.

The AVEVA + Aegex10 IS Tablet solution brings complete, accessible visualization to industrial assets, even in hazardous areas, to optimize operations.

About AVEVA

AVEVA software and services enable our customers to solve the world's most complex engineering and design challenges. Discover how we can help you redefine engineering possibilities to successfully create and manage world-class capital-intensive assets. Headquartered in Cambridge, England, AVEVA employs more than 1,700 staff in 50 offices around the world.

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