Use Case Scenario

Data Analysis for Operational Intelligence
Aegex10 IS Tablets + OSISoft Data Infrastructure

The Situation:

A Canadian pharmaceutical manufacturer is striving to further automate its manufacturing processes. This automation requires operation-wide standardization and digital workflow documentation, whereby the correct data must be conveyed to the appropriate people at the most suitable time to optimize manufacturing processes. Personnel must also be able to analyze data and use it to correct mistakes, improve processes and prevent future errors.

The manufacturer is seeking a data infrastructure system to analyze time-series data in order to better understand where improvements can be made, thus refining the overall manufacturing process for increased productivity.

The Challenge:

The areas where the company's pharmaceuticals are processed are classified as regulated **hazardous locations** because the materials used are highly combustible. Thus, any computing devices used in these areas must be officially certified "intrinsically safe," or incapable of causing a spark, for **UL Class II Division 1** hazardous areas, where high concentrations of potentially combustible dusts are constantly present. Intrinsically safe equipment in Canada must be certified under **CSA 22.2 part 157** regulatory standards.

Requirements:

The company is seeking a **mobile solution** that will allow personnel working in hazardous areas of its facilities to upload and receive accurate, real-time data pertinent to the quality control and fabrication of each medicine they are manufacturing.

The company would like its personnel to be able to:
- Identify sources of variability in the manufacturing process
- Monitor their CPP (Critical to Process Parameters) to meet quality specifications
- Improve control over the process
- Determine overall equipment efficiency (OEE) and yield
- Understand asset health to ensure quality and productivity
- View dashboards to prioritize and address problems
- Use data analysis to secure quality, address issues and improve productivity onsite

Personnel need a mobile device that is specially certified for CSA 22.2 hazardous areas in order to capture data in the facility and employ data analysis software that can analyze overall productivity in real time.

The Proposed Solution:

The proposed technology solution for this pharmaceutical manufacturer is:

1. *Hardware -* Aegex10 Intrinsically Safe Tablet
2. *Software -* OSIsoft's PI System

Hardware

Using the **Windows-based Aegex10 IS Tablet**, operators can access Windows 10 apps, cloud services and third party apps, even in the most volatile hazardous areas (**UL Class I,II,III Div 1; CSA 22.2; ATEX/IECEx Zone 1**).

Certified for UL Class I, II, III Division 1 and CSA 22.2 hazardous locations in North America, as well as equivalent areas in Europe (ATEX Zone 1) and internationally (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 Aegex 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 software like that of OSIsoft.

Software

Based in San Leandro, California, **OSIsoft** is a leader in operational intelligence and the developer of the PI System.

The PI System is a scalable, open data infrastructure that transforms operational data into actionable knowledge, resulting in business transformation. With the PI System, organizations can collect, analyze, visualize and share large amounts of high-fidelity, time-series data from multiple sources to people and systems across all operations.

PI System data can be visualized with **PI System Tools** that allows users to configure data the way they need to see it on any device. These tools include **PI Coresight**, an application server that can be used on a mobile device such as a tablet to offer:
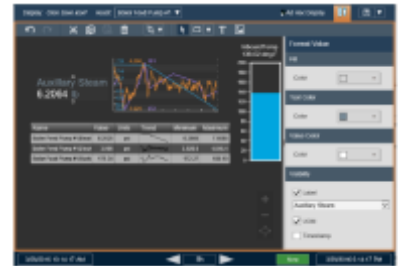- graphical, configurable dashboard displays for asset data
- comparison of similarities/differences in event and batch data
- ability for users to comment, annotate and collaborate about events
- Display notifications for possible Out Of Specification (OOS) Investigation

The Results:

With the Aegex10 IS Tablet and OSIsoft software, operators can enter the most volatile hazardous areas (UL Class I, II, III Division 1 or CSA 22.2) and interact with a real-time decision support system without fear of causing an explosion.

Using the Aegex tablet and OSIsoft's PI System, workers can:

- Identify sources of variability in the manufacturing process
- Meet quality specifications of Critical Quality Attributes (CQA)
- Improve control over the process for Critical to Process Parameters (CPP)
- Determine overall equipment efficiency (OEE) and yield
- Understand asset health to ensure product and process quality
- View dashboards to prioritize and address problems
- Use data analysis onsite to address issues and improve productivity onsite
- Pass the data over **Wi-Fi** or **4G LTE** from PI Manual Logger on the tablet to an Enterprise PI System

With the Aegex10IS Tablet, operators can also use a number of Windows 10 applications to communicate information to teammates, such as:

- Opening a Skype for Business line to speak directly and show visually the item in question
- Using Exchange/Outlook to email photos or other data
- Uploading information to a Microsoft cloud-based platform

The PI System can be used anywhere in hazardous locations via the Aegex10IS Tablet. Certain apps are also viewable offline when wireless networks are not available. The solution is transferrable across different geographies since the Aegex10IS Tablet is **certified worldwide**.

The **Aegex10IS Tablet + OSIsoft** solution helps the organization to adopt a data infrastructure that removes barriers to data access and sharing, thus transforming decision-making through data-driven insights for operational excellence.

The **Aegex + OSIsoft solution** would allow the organization to:

- improve asset health
- improve process efficiency
- improve resource utilization
- improve product quality
- secure data Integrity
- automate reporting

Resulting in:

- **improved product quality**
- **improved productivity**
- **optimized systems**
- **reduced operating costs**
- **reduced downtime**
- **enhanced enterprise performance**

Contact Aegex for more information.