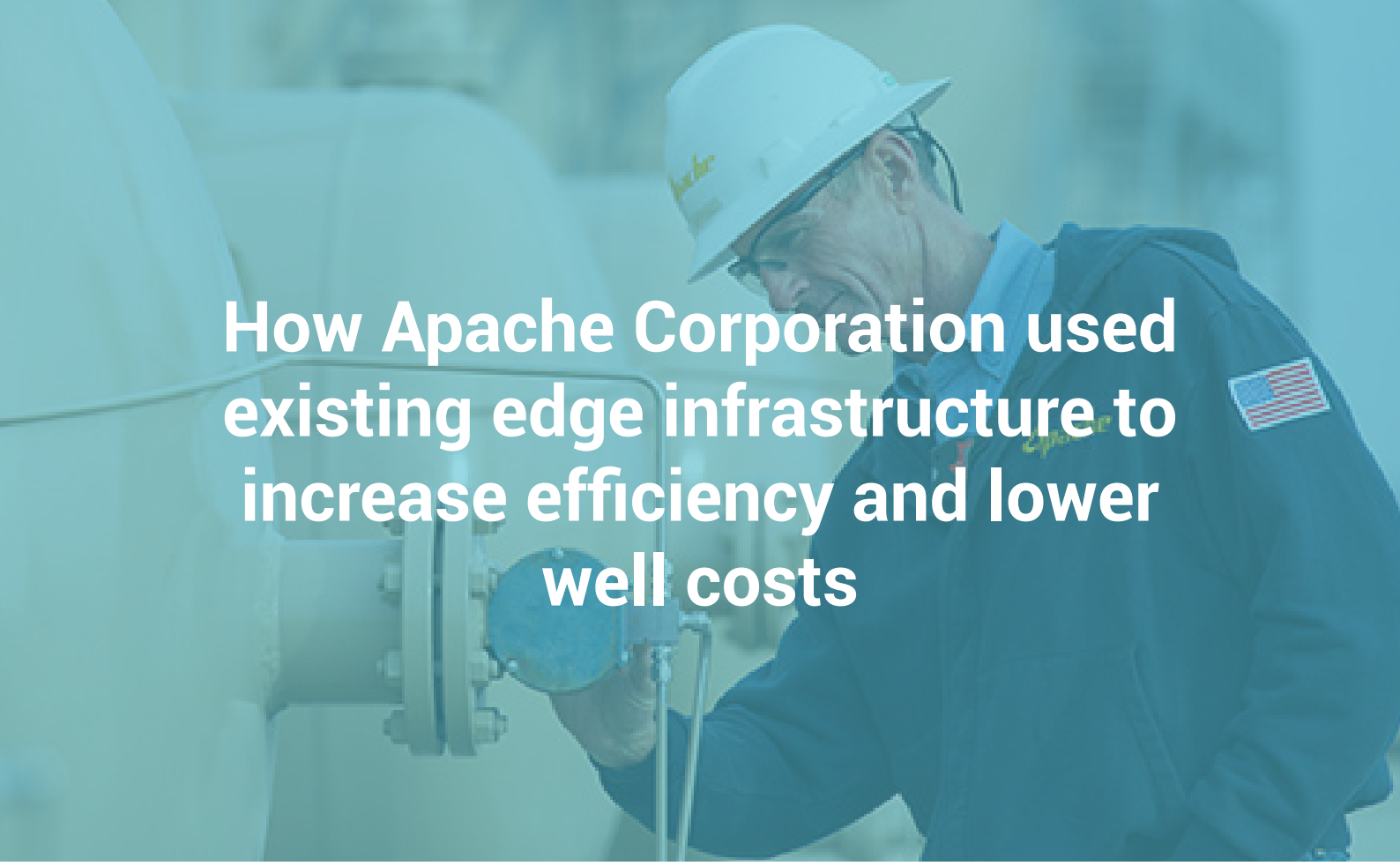
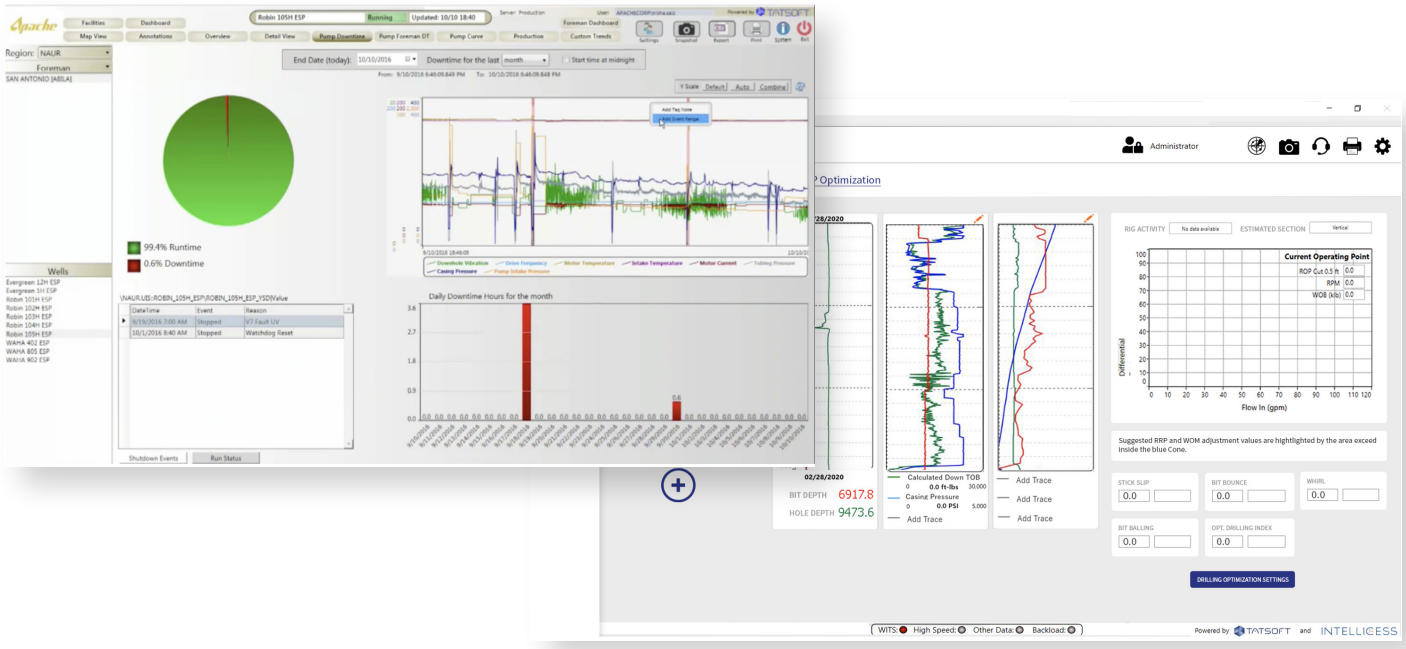


How Apache Corporation used existing edge infrastructure to increase efficiency and lower well costs

Apache Corporation (NASDAQ: APA) is a Fortune 500 American energy company engaged in hydrocarbon exploration. It is headquartered in Houston, Texas. The Company explores for, develops, and produces natural gas, crude oil and natural gas liquids. The Company's production segments include: The United States, Egypt and the United Kingdom North Sea. It also pursues exploration interests in Suriname.



Challenge

Apache Corporation wanted an innovative yet affordable solution to improve their well performance, by leveraging a variety of different information sources and real-time data at its Permian Basin operations.
They also ambitioned to incorporate remote access control for better and faster data-driven Decision-Making to allow more informed operational adjustments.

Solution

Apache Corporation chose FactoryStudio powered by FrameworX from Tatsoft as the integration IoT engine to aggregate, process, analyze, and visualize real-time information. The platform's open standards and native interfaces to existing SCADA / Historian systems, allowed Apache Corporation to stream real-time data from multiple wells to feed high-end analytics tools and dashboards with critical operational information, which is easier to interpret and accessible from the office or field.

Results

The project is in full production, including loading historical data from approximately 800 wells, to enable “lessons learned” analysis. The rig-centric approach has proven to work successfully, and simultaneously the solution also supports virtual, as-needed, real-time control centers.

1. **75-80% SAVINGS** in direct cost per average well using the FactoryStudio solution than current land based EDR systems.
2. **93-95% SAVINGS** compared to the current vendor costs of other "high-end" solutions and systems that also included real-time models and logging visualization at the rig.
3. Up to **100 Hz** received data rates for this project.

Business Benefits and Application Highlights

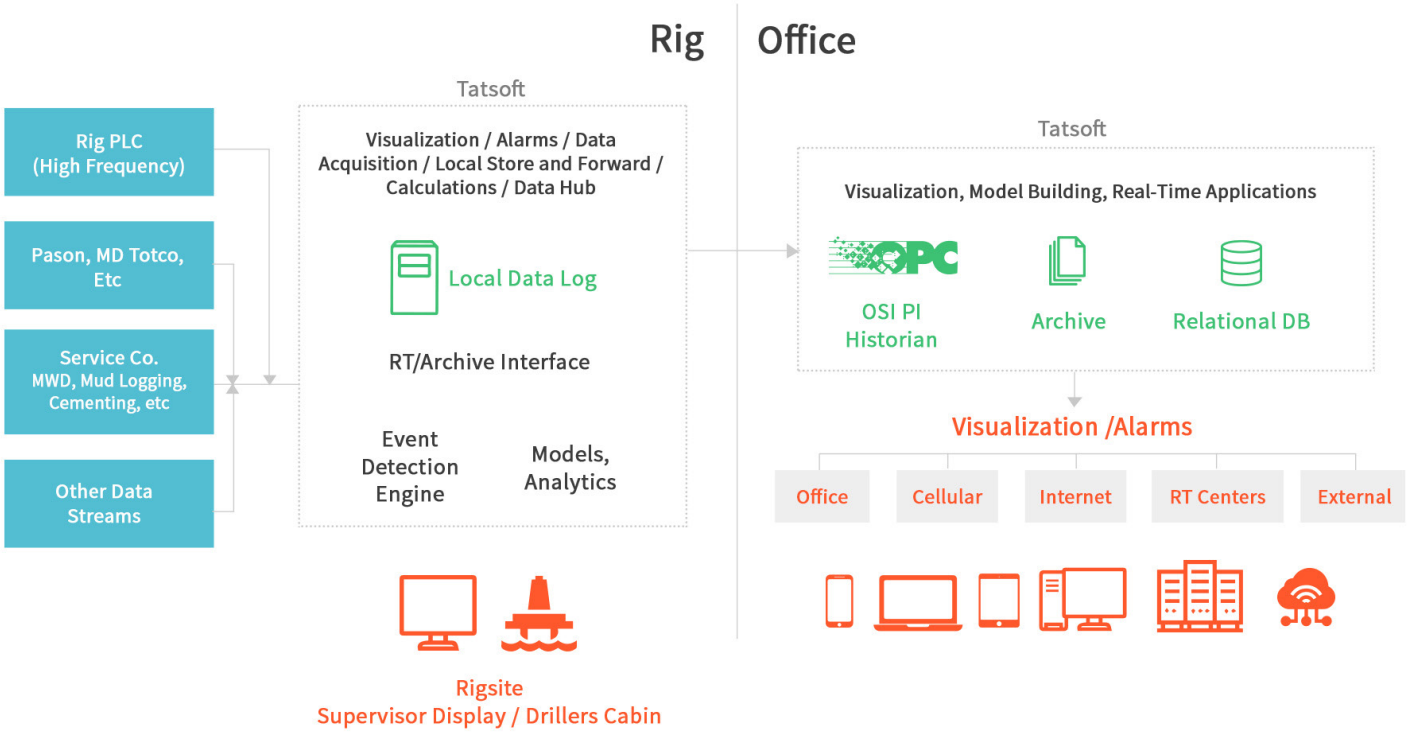
FrameworX agnostic and non-intrusive platform enabled Apache to a greater level of interoperability by building additional intelligence layers and new functionality, using fully integrated plug & play connectivity tools that are also scalable from the edge to the cloud.

Drilling optimization using real-time streaming data and Artificial Intelligence.
- Connect real-time devices with multiple protocol drivers
- Store and Model the real-time data locally
- Transform the data at the rig with analytics using Python
- Visualize and make decisions based on AI driven events
- Push key parameters and calculated data to central OSIsoft

The rig application runs algorithms in real-time to determine rig state, data quality and trustworthiness, hydraulic models, MSE calculations and vibration analysis, as well as performing time-to-depth transformations.

Achieving augmented usability of legacy systems and seamless integration to optimize operations and profitability within a budget.

Framework assists Apache operators to capture unstructured data and produce structured insights for better decision-making, improved productivity, and efficiency.



About Tatsoft

Tatsoft provides an innovative, open, and affordable SCADA and Industrial IoT software platform that allows enterprises to monitor, integrate, process, and visualize critical operational information. Real-time data combined with remote access and control of your facilities and assets from anywhere allows for more informed operational adjustments and faster Decision-Making. FrameworX is a technology built on industry standards such as OPC UA, MQTT, WITSML.

This guarantees the highest level of interoperability while securing a reliable data flow, exchange, and connectivity to any SCADA, PLC, RTU, or Historian. FactoryStudio is designed to take in all forms of data, file types, and communication protocols for seamless integration. With the real-time data model you can transform and aggregate your data with built-in tools. You can configure visual applications and build sophisticated analytics. Any data can be centrally stored, viewed on customizable charts, analytic dashboards and more, configured to your requirements.

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