

Intelligent Wellhead Systems inVision System™



Data must provide insights, safety, efficiencies and intelligent workflows to the operation



Challenges

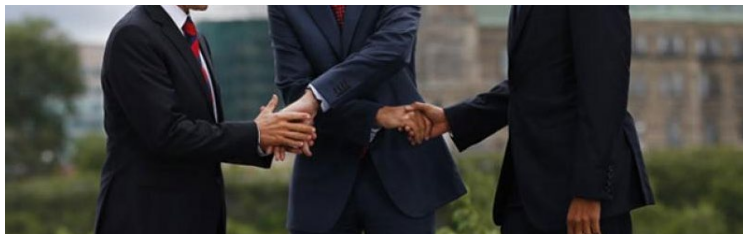
In completions, disorderly data leads to missed opportunities to:

- Eliminate human error on-site
- Identify efficiencies in operations
- Streamline administrative tasks

Human-error continues to plague operations

Data must introduce efficiencies, not distractions

Inconsistent data quality and data governance have created interoperability challenges



Ideal Solution

Provide logic to engineered equipment controls

Merge data from all sources on and off site to develop a 360° view of the operation

Improve administrative processes & Eliminate data cleaning exercises

Consequences of human error on site can be catastrophic

Data must be acquired for use as a tool, not simply for the sake of acquiring data

Wipe out the 80/20 data science dilemma

“80% of employee time in the industry is spent looking through unstructured data in order to inform decisions to get work done”

- Ashild Hanne Larsen, CIO, Equinor

Desired Outcomes

Display consistent real-time dashboards around sites, head offices & homes. Equip remote operation control centers (OCC's, RTO's)

Re-purpose valuable time so that the industries most valued people can focus on their most important work

Eliminate human-error catastrophic events

Methodize operations through data-driven scrutiny

Outfit teams with the information they need to guide data-informed improvements



Intelligent Wellhead Systems - inVision System™

Creating the Connected Worker



A Convergence of Operational & Informational Technology, Enabling Operational Intelligence and Controls

Agnostically integrates IIoT and digital services

- Assembled truthful, normalized sensor-driven data, brings order and relevancy to operations
- Uniform, complex, repetitive and/or routine operations and tasks can now be automated
- Process control checks and logic are built around these standards

Eliminate human errors in valve actuation

- The IWS Digital Handshake™ prevents events through physical interlocks
- Since implemented 2 years ago, not one catastrophic event has occurred
- Remove HSE, and efficiency risks that cost millions

Introduce efficiency in well swap operations

- Valve sequencing through control checks
- Generates well swap efficiencies while generating process safety checks
- Swaps times reduce to <5mins saving up to \$6,300 per stage

Valuable insights into your operational data

- Incorporate Microsoft solutions (Azure, Dynamics 365, Teams, Time Series Insights)
- A collective view of the operation benefits all services
- Live historical data analytics promote efficiency in operations and deliver coordinated results

IWS deploys hardware and software systems for the well completions industry. The inVision System™ introduces intelligent workflows and automation that leads the completions space into Industry 4.0

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Microsoft Partnership – Creating the Connected Worker



The IWS, Microsoft partnership assembles the disjointed data of a completions site, standardizing the operations, thereby enabling automation in engineered controls and administrative tasks while powering-up onsite and remote communications

Solution Alignment

Microsoft Azure Web Services

Azure IoT Hub, IoT Edge, & Cosmos DB

The IWS high response noSQL database

Microsoft Dynamics 365

Event and Data Hubs:

Resource planning, data management and customer alarms and informational alert control

Microsoft ADX

ADX:

Open and scalable end-to-end IoT analytics service used to collect, process, store, query and visualize data

Azure Communications Services (Beta Test)

SiteComms™

Facilitates direct voice and text between all site and off-site users directly through the inVision System™

3-year Customer Testimonial

- Multi-pad award, October 2018, Completions & Data Teams
- Customer was reluctant to implement remotely actuated hydraulic valves on their completions pad site without a solution like inVision.
- Customer implemented the IWS inVision System™ which is structured on Microsoft platforms (Azure, MS 365, Teams).



"[Customer] has been utilizing the Invision Frac System for over 3 years now. I have been constantly astonished of the adaptation the IWS team brings to our operation needs. This system has brought an ever-growing efficiency and flow to our whole process."

– Customer, Completion Foreman

Win Results

The inVision System™ introduced engineered controls to the customer pad sites when they moved from manual to hydraulically actuated valves. Since the technology was introduced not one single event of shutting in on wireline, mistaken valve closure or any overpressure events has occurred.

The inVision Hub changed the way the customer works – by installing engineered controls on their hydraulic valves and increasing situational awareness by digitally twinning critical services on site.

By incorporating Microsoft solutions, this PaaS has authorized controls while the standardized data model enables automation.

inVision has introduced Intelligent Workflows that automate repetitive error-prone tasks, saving both time and money, while delivering high-quality data. The result is the customer can run more complex operations safely and efficiently with less people and costs.