Merging Operational Technology, Information Technology and Cybersecurity at Hess

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About HESS

Hess Corporation is a leading global independent energy company primarily engaged in the exploration and production of crude oil and natural gas.

CSE ICON

We are a US-based consulting, engineering and technology integration services firm focused on the Utilities, Oil & Gas (O&G), and Pharmaceutical industry sectors. Our expertise and experience includes the Real-Time Data Infrastructure, SCADA, Energy Applications & Analytics, Controls & Measurement, and Server-Storage-Network areas.

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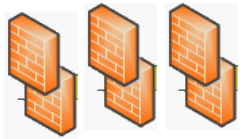
Business Challenge

With increasing number of both offshore and onshore Oil & Gas assets, the major challenges faced are:

- Improving operational efficiencies
- Optimum use of resources
- Prevent downtime
- Lead Operations to be proactive, as opposed to reactive
- Safeguard Operations technology space from cyber threats

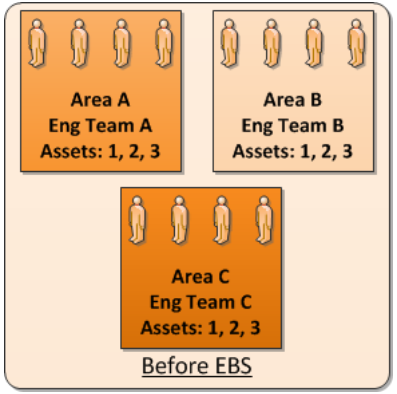
Operational Intelligence & Cyber Security

- Operational intelligence
  - Unique combination of IT and operations
  - Harnesses operational technology
  - Drive operational excellence.
  - Platform: Exception based surveillance
  - Engine: “Exception” based operations
- Implement security standards to segregate Control Systems & Enterprise networks

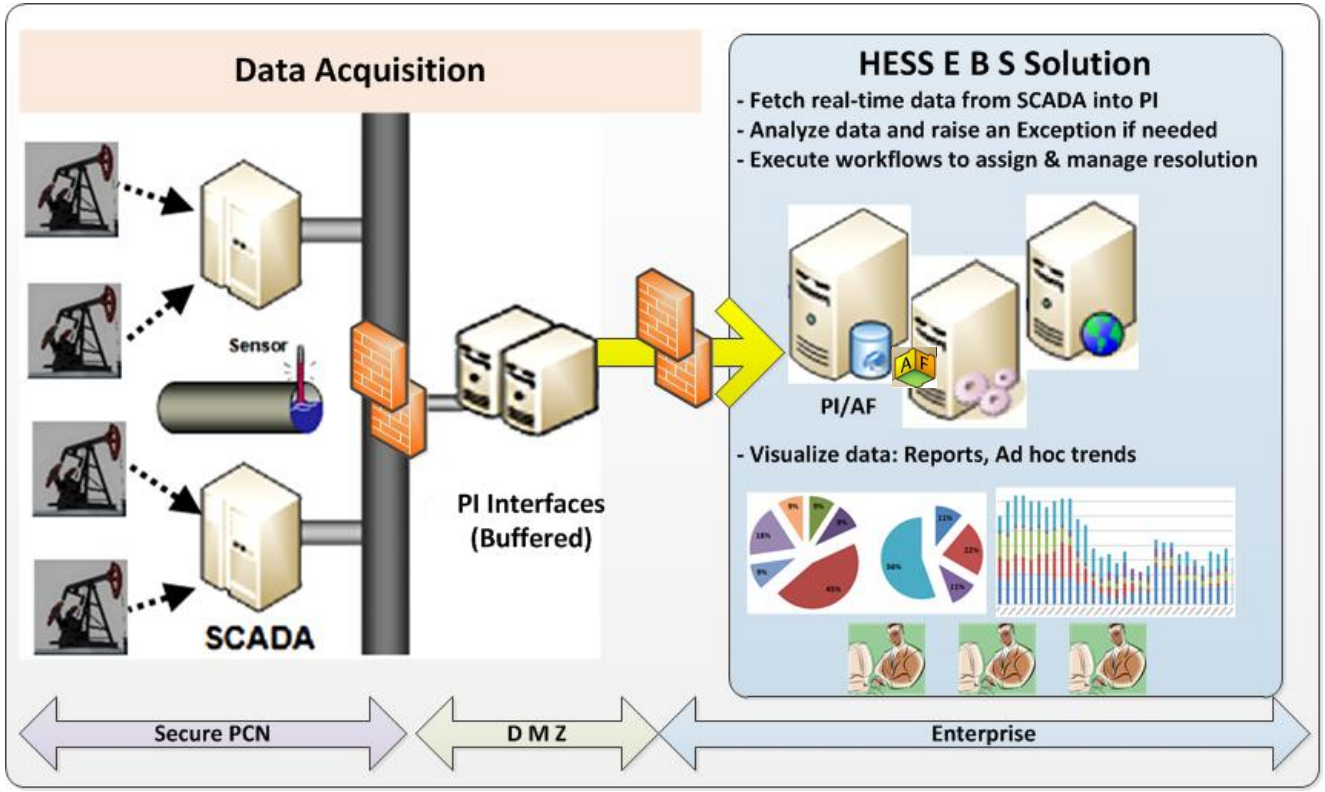


Key Principles

- Change in practice and workflow
  - from static scheduling of asset-based team
  - to dynamic scheduling of a common pool of expertise.
- Workflow
  - Alerts sent to a dynamic scheduling tool
  - Which assigns the right resource to investigate the problem.
- End Result
  - Efficient and effective use of expertise to keep the production assets running smoothly.



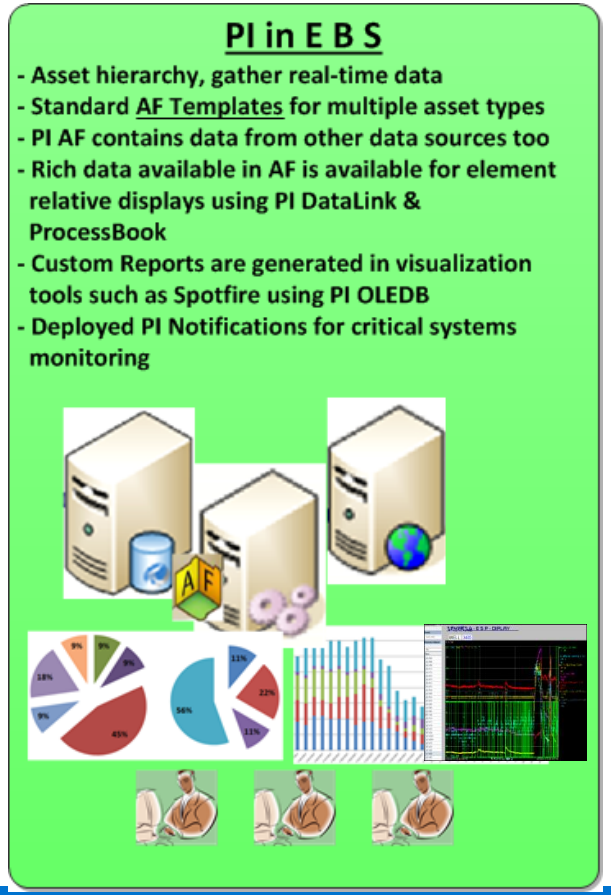
Exception Based Surveillance



- Proactive approach
- Alerted to abnormal situations
- Take actions before there is a loss

PI System & EBS

- In 2014, Hess rolled out the EBS solution with PI System based real-time data infrastructure.
- EBS major components:
  - PI Server / Asset Framework (AF)
  - Custom workflow engine
  - PI Client tools for ad hoc trending
  - PI OLEDB Enterprise & Provider
  - Spotfire
- Notifications were deployed for critical systems infrastructure performance monitoring.



PI System & EBS

- With this platform, early and efficient support for real-time data handling enables understanding of early performance of a well which is crucial to the future well plan.
- Furthermore, AF based templates aid in swift PI Server asset & tag creation with zero human introduced error.

Automation made easy with PI System

Cyber Security

- To better safeguard Operations Technology space from cyber threats, currently working on prioritizing cyber-vulnerable, critical infrastructure assets and mitigation strategies for their loss or compromise as per “Sandia” Report.
- Implemented SCADA security standards to segregate Control Systems & Enterprise networks.
- PI Systems play a significant role in aggregating data from control systems network, form an integral part of the over all security solution to deliver data to business users/apps.

SECURITY

- PI Authentication based on AD.
- Firewall rules which allow only PI net traffic.
- PI Security features like 'PI Firewall' which allows to secure PI objects individually.

Business Impact & Conclusion

- Positive impact on production up to 10% increase in boepd
- Templates (AF) based approach provided quick turnaround time in defining and creating data points and assets for EBS
- Improved efficiency in managing resources with dynamic scheduling and preventing downtime of production assets
- Embarked on Cybersecurity initiative, compliance and change management

Hess: Merging Operational Technology, Information Technology and Cybersecurity

Unique combination of IT and operations

Exception based Surveillance

Identify, prioritize critical control & real-time data infrastructure, implement cyber security standards.

Business Challenges

- Improving operational efficiencies
- Optimum use of resources
- Prevent downtime
- Cyber Security

Solution(s)

- Utilize Operational intelligence
- Exception based Operations
- Deploy EBS with the PI System as real-time data infrastructure
- Secure control & business networks by implementing Sandia methodology, security standards & PI Server Security

Results and Benefits

- Improved efficiency in Operations
- Reduction in downtime of assets
- Up to 10% increase in production
- Secure, strengthened networks

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Questions

Please wait for the microphone before asking your questions

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THANK YOU