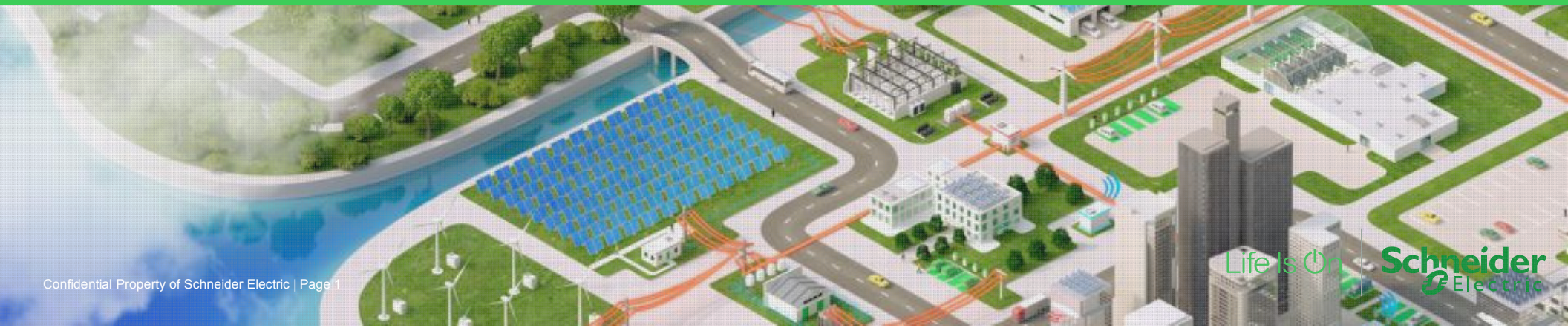


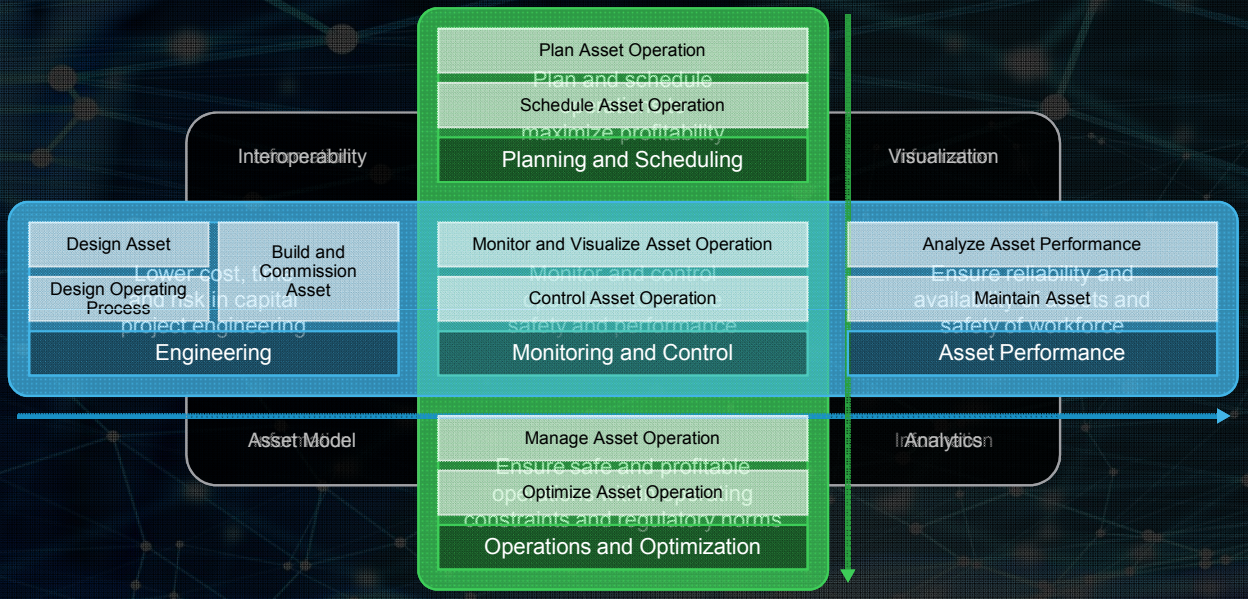
Key Message: Industrial Software Platform

Solutions for Power industry



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Industrial Software Platform



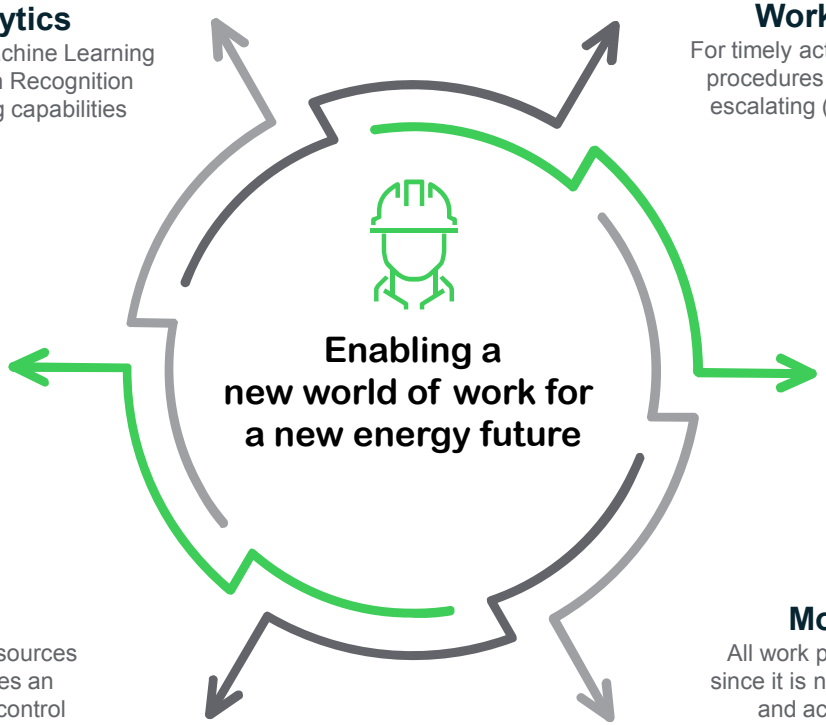
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Digital enablers of the new energy future

Predictive Analytics
Leveraging the power of AI/Machine Learning to perform Advanced Pattern Recognition (APR) for advanced warning capabilities

Enterprise Historian
Consolidation of operational data is being driven by both cost efficiency (cloud) and value via an integrated view of operations

Centralized Control
The growth of Distributed Energy Resources (DERs) like microgrids, etc., requires an updated architecture for distributed control



Workflow Management
For timely action on critical decisions, electronic procedures enable speed and consistency in escalating (up) as well as delegating (down)

Augmented/Virtual Reality
Whether onsite or remote, stakeholders can collaborate and view the operations context in all of its rich detail to execute the work

Mobility & Cloud
All work processes are mobile-ready since it is now the default user interface and accessible from anywhere

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Industrial Software Platform: Capabilities for Power Industry

Design (the “digital twin”) of the Asset / Operation

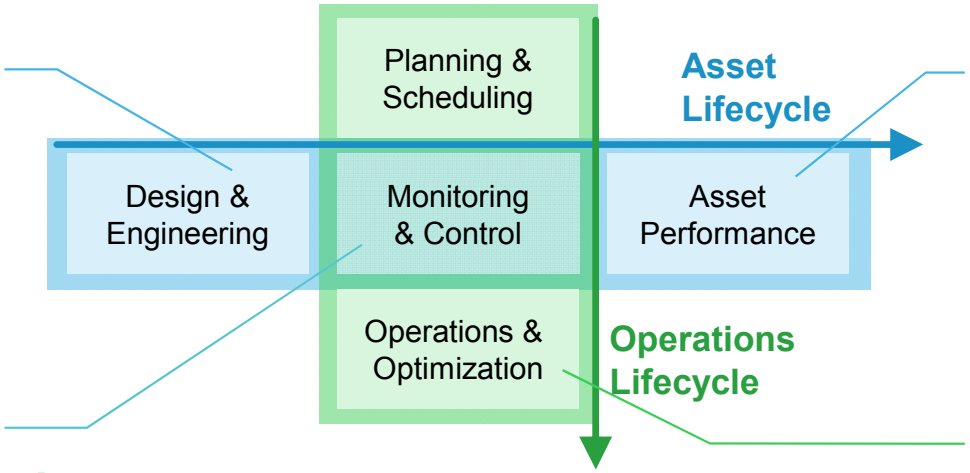
Key Capabilities:

- Process Engineering
- Dynamic Simulation
- Operator Training Simulators

Monitor, Visualize & Control the Asset / Operation

Key Capabilities:

- Supervisory control & device connectivity (SCADA)
- Centralized Control & Management (System Platform)
- Cloud-based Historization (Enterprise & Cloud Historian)
- Analytics



Predictive Analytics

Mobility & Cloud

Centralized Control

Enterprise Historian

Workflow Management

Augmented/Virtual Reality

Analyze, Improve & Maintain the Asset Performance

Key Capabilities:

- Predictive Asset Analytics
- Condition Management
- Mobile Operator Rounds
- Enterprise Asset Management
- Risk-based Maintenance
- Predictive Performance

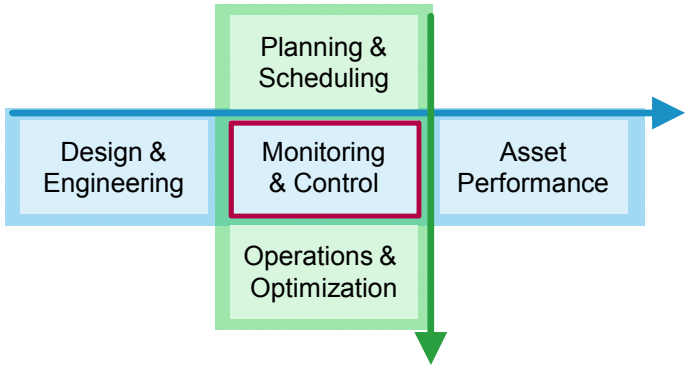
Manage & Optimize the Asset / Operation

Key Capabilities:

- Advanced Process Control
- District Energy Management
- Workflow Management
- Enterprise Integration
- AR/VR Immersive Training
- AR/VR Enhanced Operations

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Central Control Room Management



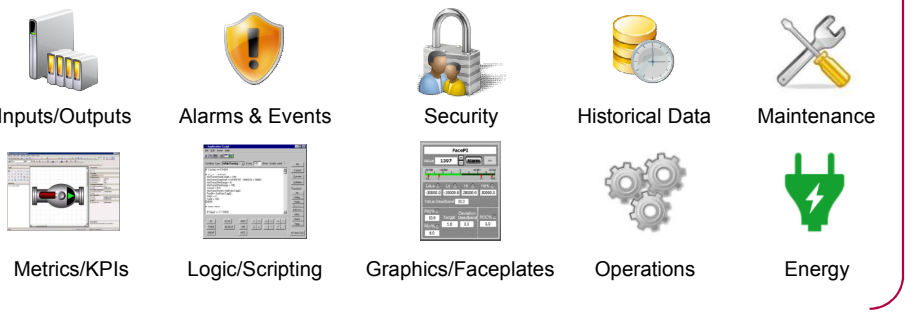
- Multi-site SCADA for multivendor Fleet / Farm management
- Powerful modeling environment yet simple to use
- Library approach – “build once / reuse as often / update as needed”
- Enables governance & administration across multivendor landscape
- Scalability (# of assets, management hierarchy, policies & rules, etc.)

Customer Examples

ENGIE

Eskom

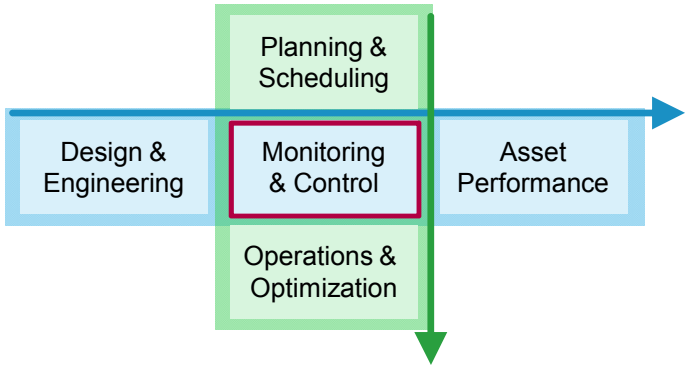
Attributes of the Asset/Operation





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Real-Time Information Management



- Bridge the gap between IT-OT data
- Lossless compression enables high-fidelity models of “digital twins”
- Fast and scalable access to real-time information
- Secure, with high-availability and fault-tolerant data collection
- Rich cloud-based analytics (KPI dashboard)

Customer Examples

nationalgrid · TVA · Eskom · CALPINE

COLLECT
Connect with control, monitoring, smart devices and other business systems.

STORE
Compress, store and organize collected information securely in an enterprise database.

DISPLAY
Present real-time and historical data through advanced client tools.

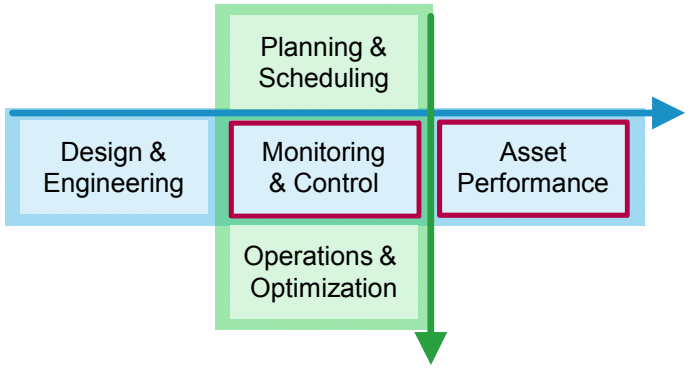
ANALYZE
Create user defined calculations and expressions with a predefined library of functions.

REPORT
Access raw and aggregated information in a specified format or through ad-hoc queries.

ALERT & NOTIFY
Send an email or text message to a computer or mobile device with alarm information.

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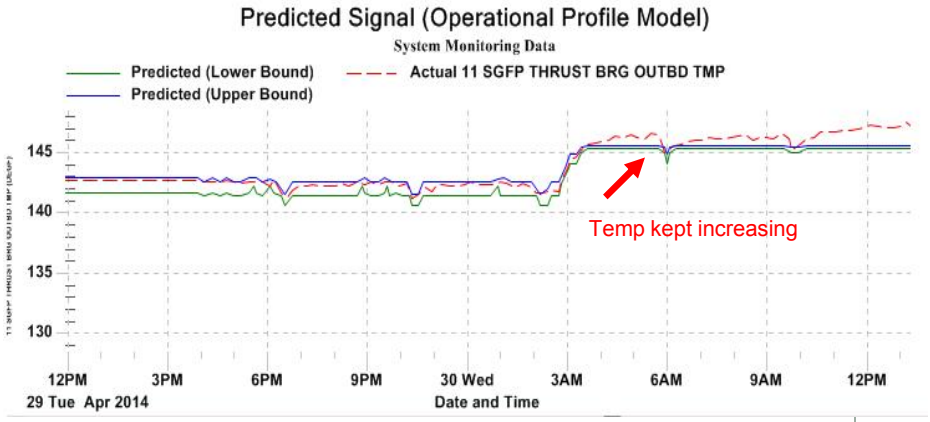
Predictive Analytics (Advanced Pattern Recognition)



- 15,000+ assets monitored globally in Power industry
- Easiest to configure (graphical), “self service”
- “Grey Box” approach – users have full access to all data
- Actionable – detailed actions for fault diagnostics
- Prediction and forecasting
- Flexible deployment – on-premise, hybrid, customer or other Cloud

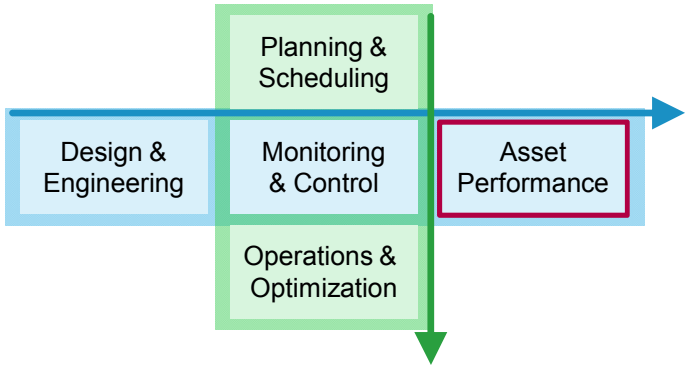
Customer Examples

DUKE ENERGY.
EDF
SOUTHERN COMPANY
Energy to Serve Your World℠
Eskom
TATA POWER
ONTARIO POWER GENERATION



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Enterprise Asset Management

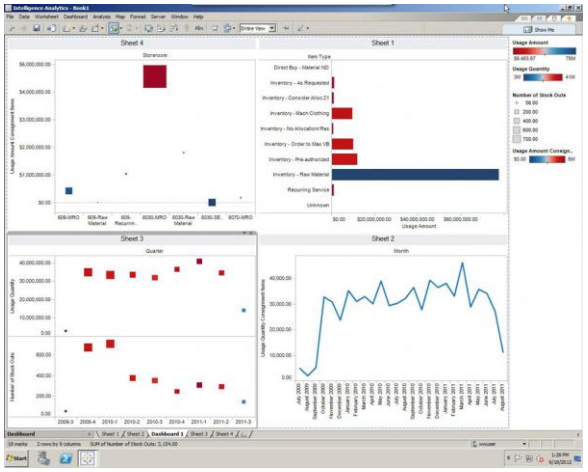


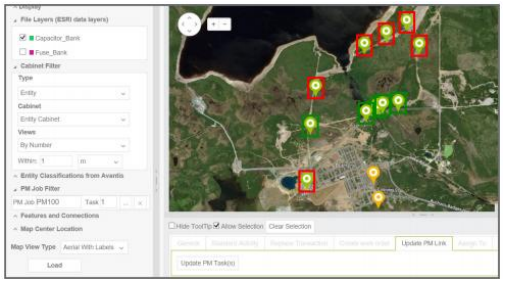
- Enterprise solution scalable across multiple sites & business units
- Work orders integrated to labor, materials, tools, drawings, etc.
- Plan, analyze and schedule preventive maintenance for reliability
- Optimize inventory levels to balance spares availability vs. cost
- Automate requisitions, PO's & quotes; match contracts & invoices

Customer Examples

FPL

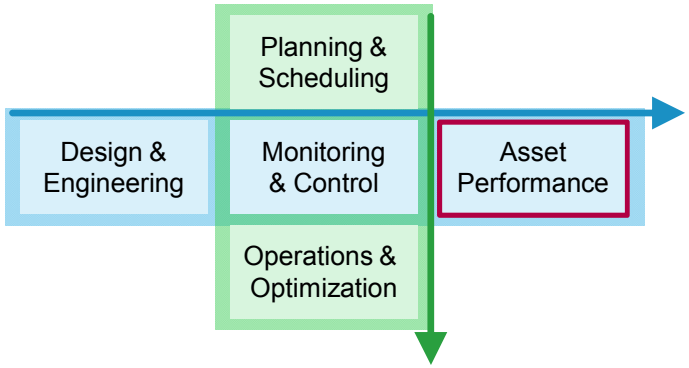
VECTREN





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Mobile Workforce Enablement



- Enable Operator Rounds
- Design advanced work processes, rules and schedules
- Enforce dynamic procedures triggered on asset condition(s)
- Easily extended for custom applications or integrations
- Comprehensive analysis & reporting for improving work processes

Customer Examples

aeci Associated Electric Cooperative Inc.

BELCO

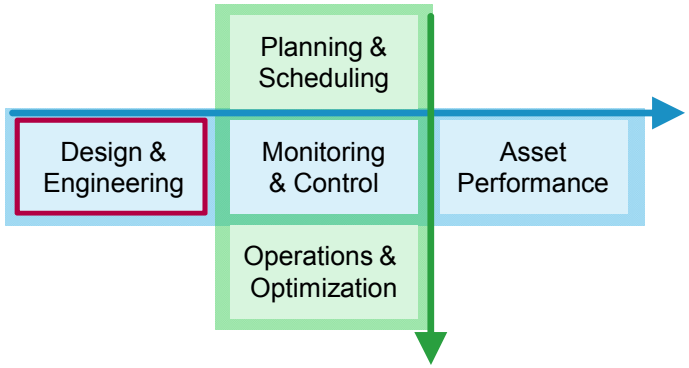
CFE Comisión Federal de Electricidad





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Operator Training & Simulation (OTS)



- Scalable computing environment (test vs. training vs. real-time)
- Secure & flexible access control (add/edit/delete user privileges)
- Simplified IT overhead via on-demand cloud infrastructure
- Flexible usage and pricing models
- Augmented Reality/Virtual Reality for immersive experiences

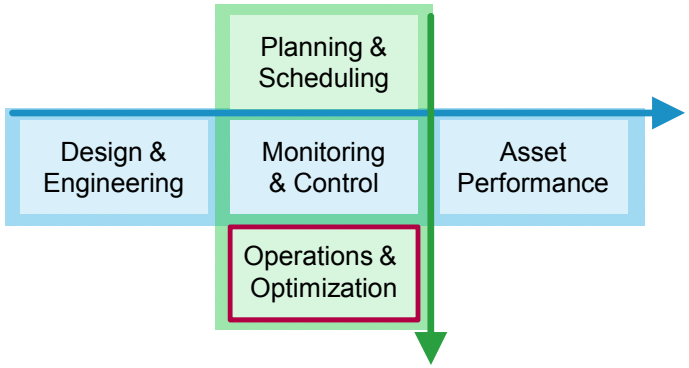
Customer Examples

aps

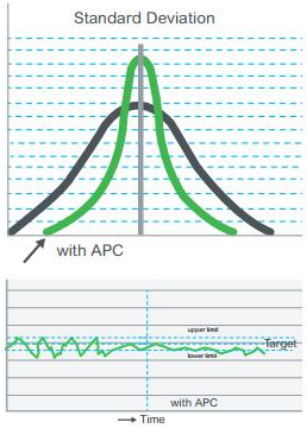


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Advanced Process Control



- Model & analyze complex cause-and-effect relationships
- Control for multiple process parameters including economics
- Proven results in combustion optimization (heat rate, emissions)
- Flexible modeling platform for many types of thermal applications
- Intuitive and efficient user interface





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