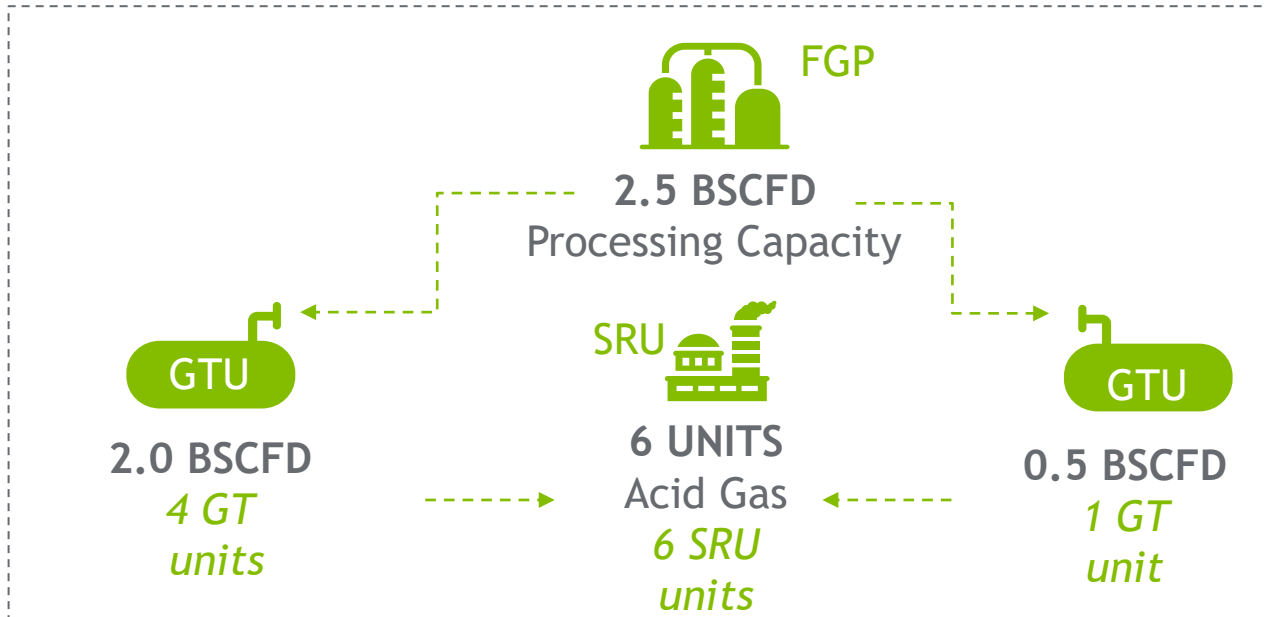


Aramco - Fadhili Gas Plant

Sustainable Success: Deploying ISA100 Wireless Monitoring Systems at Fadhili Gas Plant

Background


Fadhili Gas Plant





Sales Gas

FGP


Liquid Sulfur

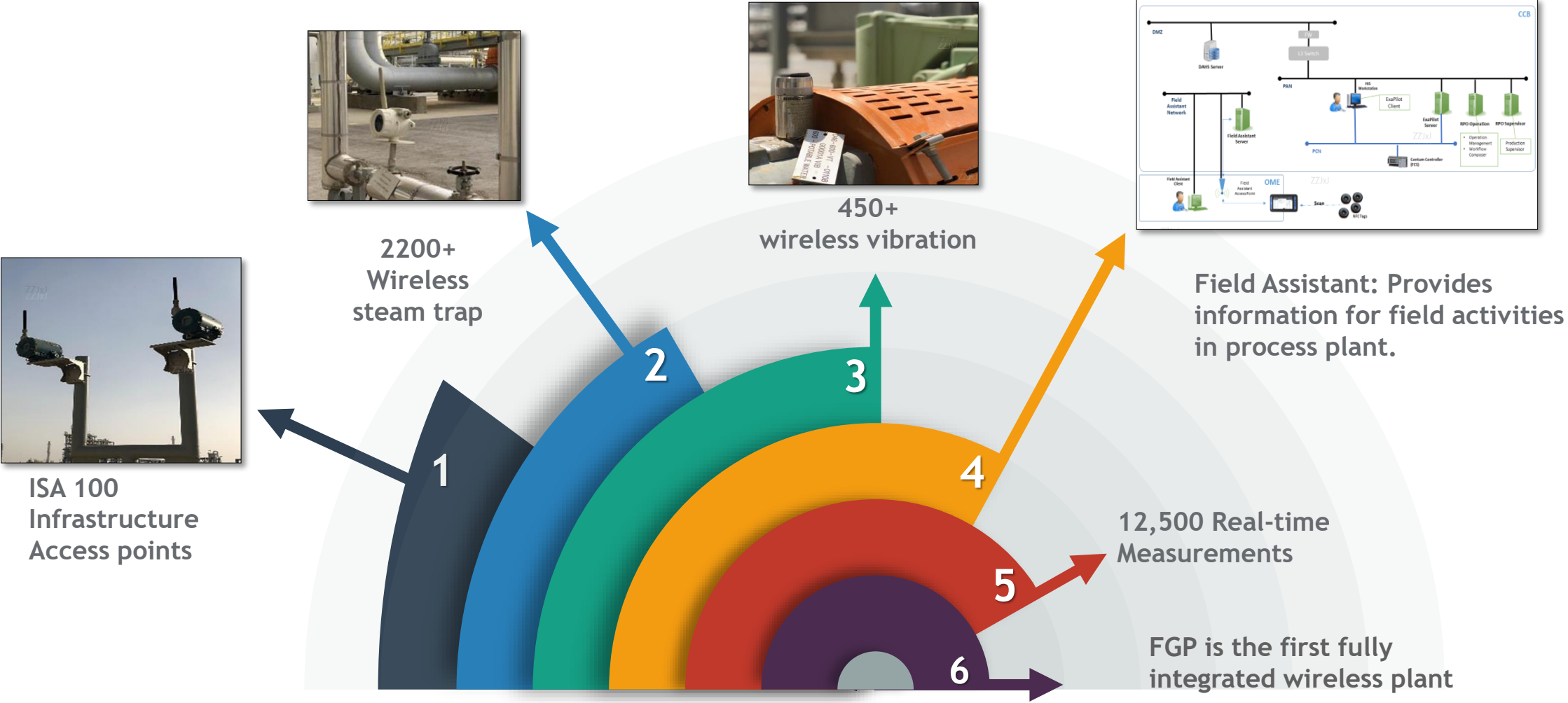

1.5 GW
Power Generation

FPCC


3.2 MMPPH
Steam Generation

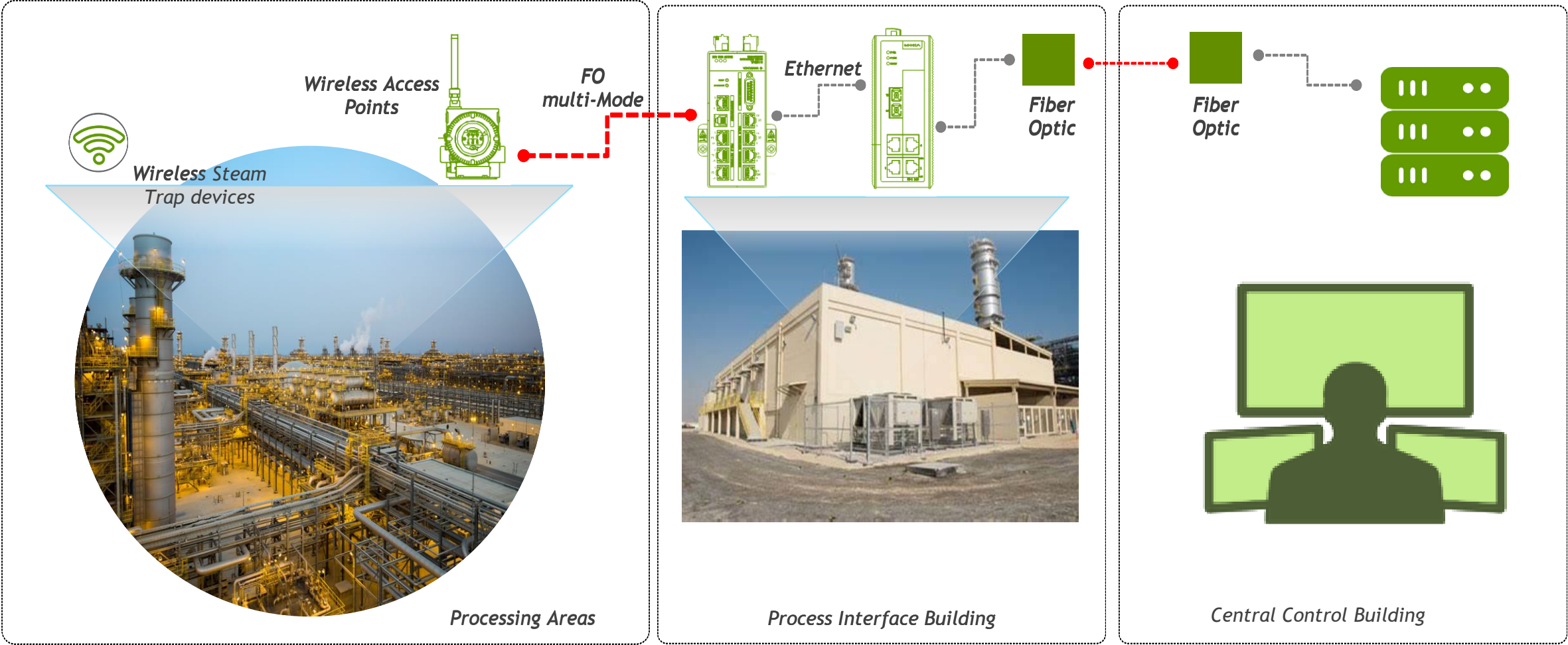
Background

Overview of ISA100 wireless technologies adoption



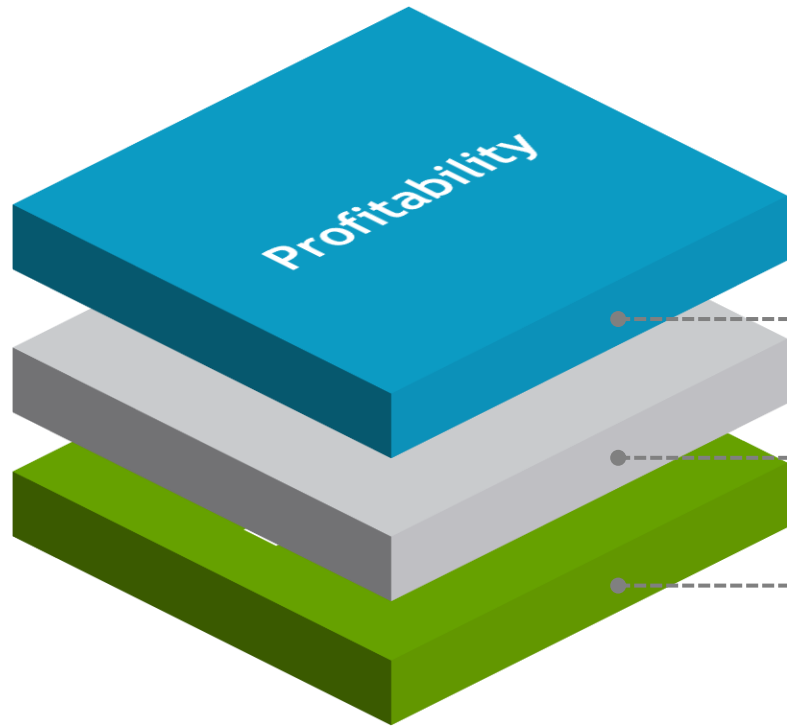
Background

Overview of ISA100 wireless Topology



Background

Why wireless ISA100 ?



ECONOMIC ADVANTAGES & OPERATIONAL SAVINGS



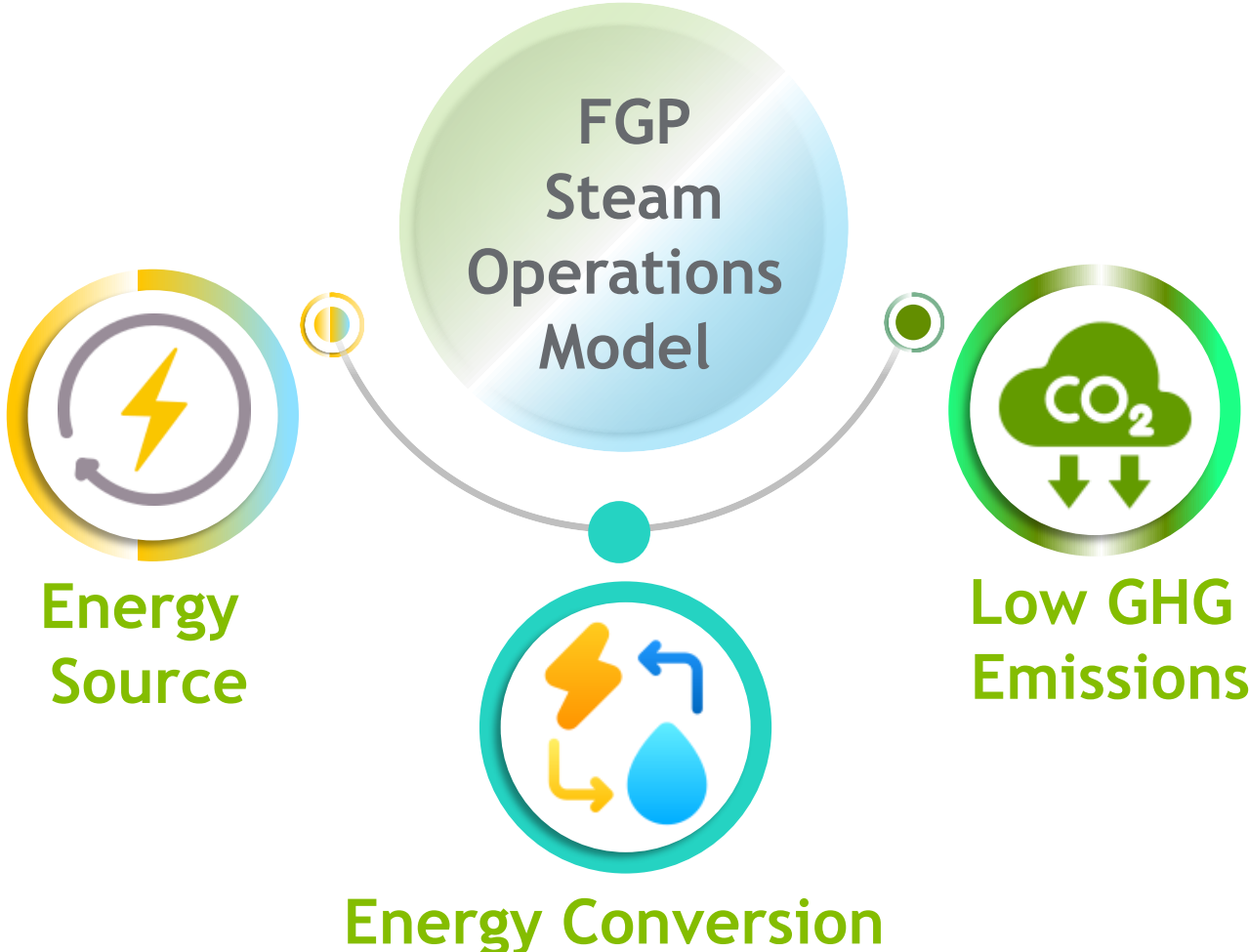
FLEXIBILITY IN PROJECT EXECUTION



EXPANDABILITY TO AVAIL NEW PROCESS INSIGHTS

Our Steam as a Resource

Role of Steam and its Economic Impact



FGP Vision Toward Sustainability



Part of Fadhili team commitment to energy conservation and to reduce FGP energy intensity, FGP implemented a new technology to monitor all steam traps. This monitoring system will use very cost effective method by using wireless technology. Also, from safety point view this system will avoid steam hammering in main headers.

Deployment of ISA100 Wireless Steam Trap Monitoring

Initial Challenges in Steam and Resource Management

Steam and condensate losses
exceeding the design target

Inefficient steam traps



Inaccuracy of main steam flowmeters

Unavailability of the Steam Trap Monitoring Systems (STMS) to proactively monitor the steam system.

Deployment of ISA100 Wireless Steam Trap Monitoring

Implementation Challenges

Enhance the management
of steam resources

Build cost-effective system
with real time monitoring



Provide a proactive measures to
identify leakages and malfunctioned
steam traps

To prevent undetectable blocked steam traps that
could lead to asset failure

Deployment of ISA100 Wireless Steam Trap Monitoring

Implementation Requirements

Overall plant
monitoring



Centralized
System



Communication
protocol

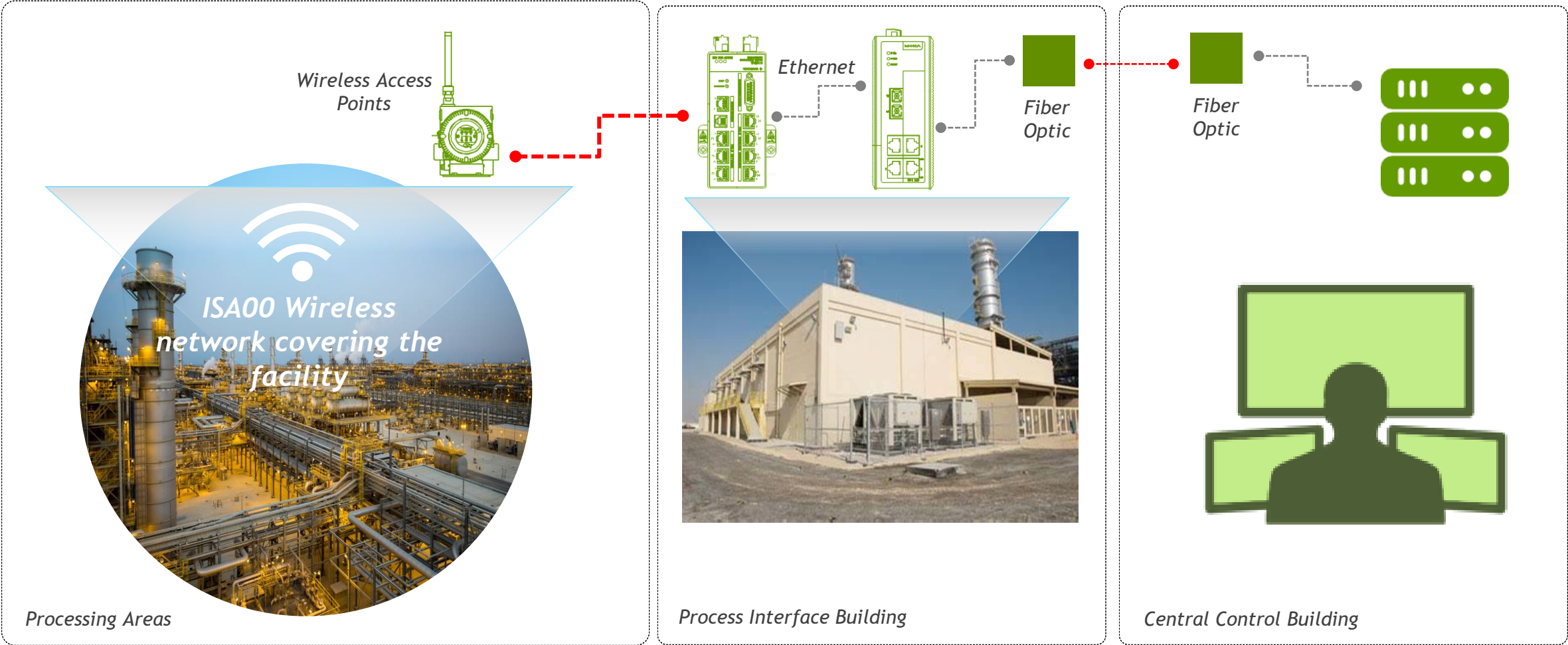


Identification
Features



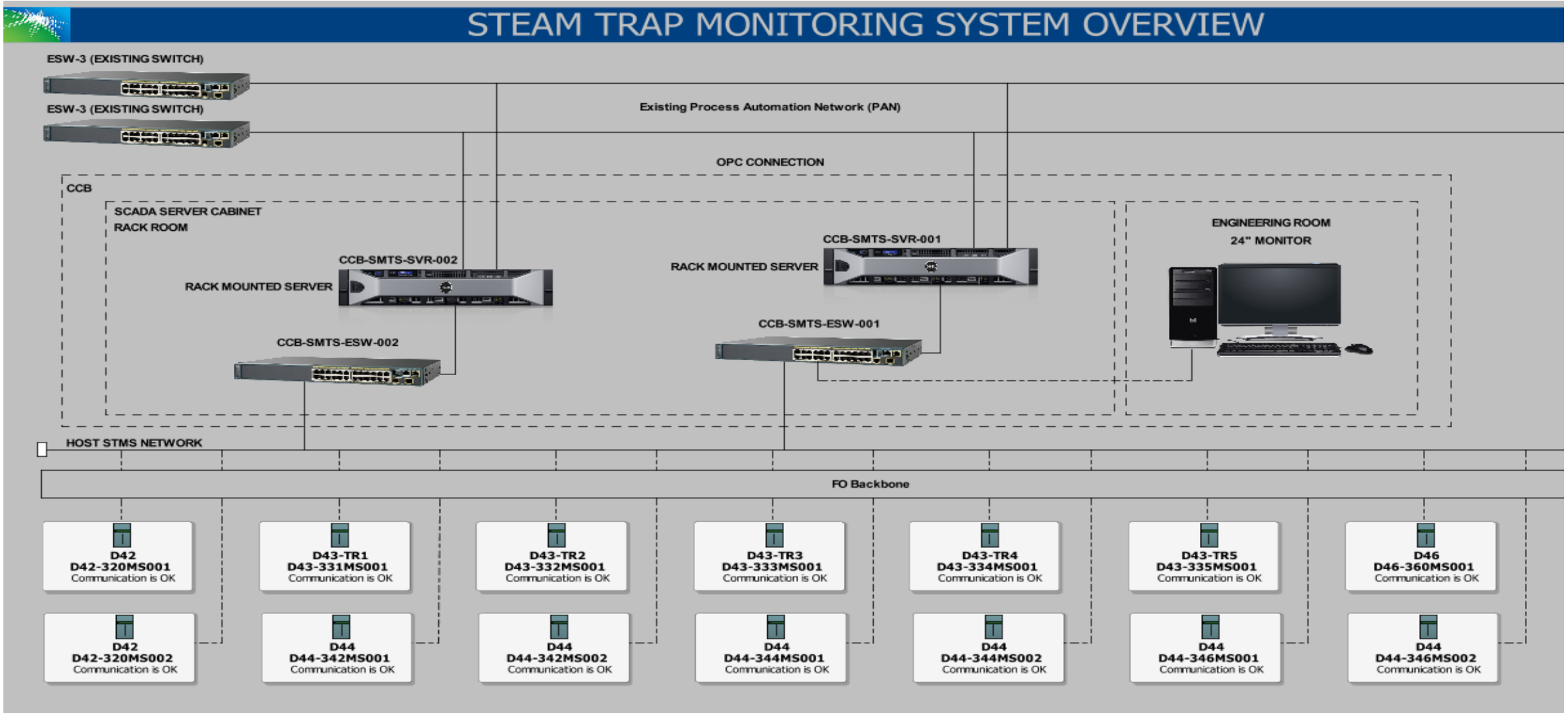
Deployment of ISA100 Wireless Steam Trap Monitoring

Implementation Solutions



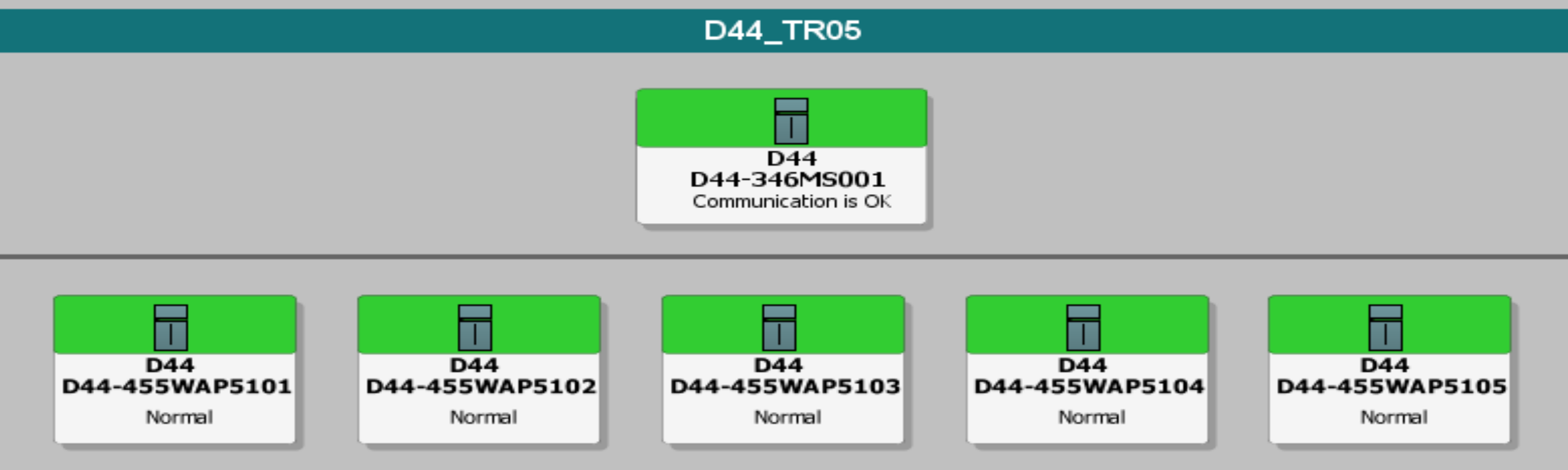
Deployment of ISA100 Wireless Steam Trap Monitoring

Implementation Solutions: System Overview



Deployment of ISA100 Wireless Steam Trap Monitoring

Implementation Solutions: System Overview



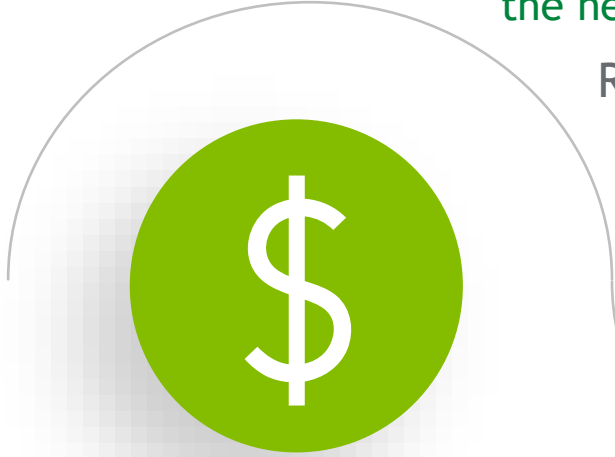
Deployment of ISA100 Wireless Steam Trap Monitoring

Implementation Solutions: System Overview

STAP	CONDITION	LEAKAGE	PIPE TEMP
213-A T-1002	COLD	0.0	125.6
213-A T-1004	COLD	0.0	114.8
213-A T-1007	NOT LEAKING	0.0	159.8
213-A T-1008	NOT LEAKING	0.0	183.2
213-A T-1010	COLD	0.0	141.8
213-A T-1012	NOT LEAKING	0.0	181.4

Economic Impact on Our Organization

- Availability of monitoring devices substituted the need of manual regular checks.



Reduction in Maintenance Cost



ISA100 Implementation
Cost Effectiveness

Operational Efficiency

- 90% cost reduction in implementation
- Scalable system which can adopt new technologies
- Fully integrated with the plant control system

- Continuous monitoring of critical systems
- Maintaining steam losses within the limits
- Adding new technologies for better monitoring

Wireless Vibration
Monitoring

Wireless Gas
Detection

Energy Savings and Conservation

Quantifying Energy Savings: Our Case Study



What is Next?

Ongoing Initiatives and Continuous Improvement

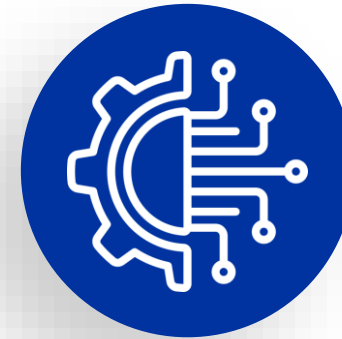
Current phase

- Maintaining existing wireless technologies
- Adopting new gas detection technologies



Design phase

- Wireless Steam Trap Monitoring System
- Wireless Vibration Monitoring System



Future phase

- Wireless monitoring system is a standards for all future projects



Ocean

