

# ENGINEERING SOLUTIONS



**WAC**  
WAED ARABIA COMPANY  
شركة واعد العربية



**Empowering success through commitment, reliability,  
and foresight.”**

# COMPANY OVERVIEW

- Established in 2024 in the Kingdom of Saudi Arabia, WAC has grown into a trusted engineering solutions provider with our clients.
- We deliver advanced expertise across electrical protection, power system studies, automation, monitoring, and OT cybersecurity, supporting mission Critical operations in:
  - Utilities Oil & Gas
  - Renewables
  - Industrial infrastructure

Protection Solutions



Automation Solutions



Cybersecurity Solutions



Modelling and Studies

Condition Monitoring Systems



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# Our Purpose

## To Solve problems:

- Failures and unplanned outages
- Safety risks to personnel and critical assets
- Limited visibility into electrical asset health.
- Aging infrastructure and legacy systems

**WAC delivers safer, more reliable, and intelligent power systems across the entire asset lifecycle**



# Integrated Electrical Services

## Our Core electrical Services

1. Power System Protection & Equipment Testing.
2. Power System Studies & Arc Flash Mitigation.
3. Automation & Digital Substation Solutions.
4. SCADA & Monitoring Systems.
5. Asset Condition-Based Monitoring Systems.
6. Power System Stability Solutions.
7. OT Cybersecurity Solutions.



# Power System Protection

## Ensuring System Reliability & Compliance

- Protection relay testing & commissioning (MV/LV)
- Circuit breakers, CTs, VTs testing
- Protection schemes: feeder, transformer, generator, busbar
- Greenfield and retrofit projects

## Client Value

- Reduced outages
- Improved system Safety and reliability
- IEC / IEEE / utility compliance



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# Power Systems Studies & Arc Flash Mitigation

## Power System Studies

- Load flow & short circuit analysis
- Protection coordination
- Harmonics & power quality
- Motor starting & stability studies



## Arc Flash Services

- Hazard analysis & incident energy calculation
- Arc flash labeling & mitigation (ERMS)
- MV & LV arc flash solutions



# Automation & Digital Substation Solutions

- End-to-end automation for substations, distribution, and industrial networks
- Centralized visibility and control across all electrical assets
- Seamless integration of renewables and hybrid energy systems
- Digital modernization of legacy protection and control equipment
- Scalable, secure, and standards-compliant automation architectures
- Improved reliability, operational efficiency, and system availability.
- DFR Default Fault Recorder.



SCADA Systems



Substation Automation



Distribution Automation



Process Automation



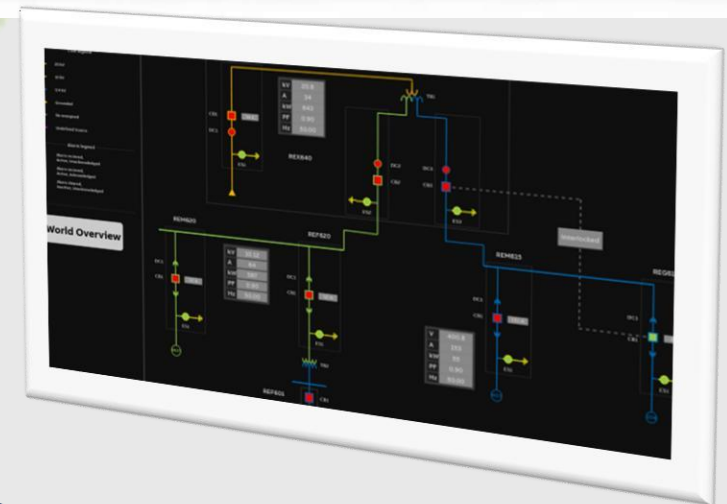
Renewable Energy Integration



Legacy Equipment Integration

# SCADA & Electrical Monitoring Systems

- SCADA system design, engineering & implementation
- Real-time monitoring of substations and networks
- Seamless integration of PLCs, RTUs & IEDs
- Alarm, event & trend analysis
- IEC 61850, Modbus & DNP3 compliant
- Scalable architectures for utility, industrial & renewable applications

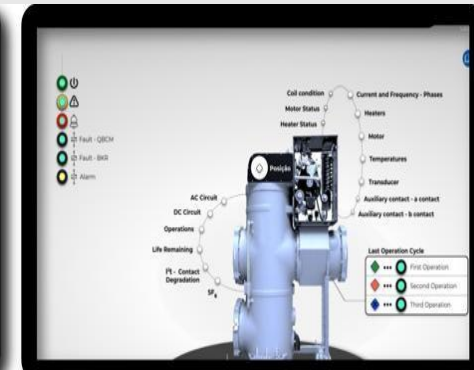
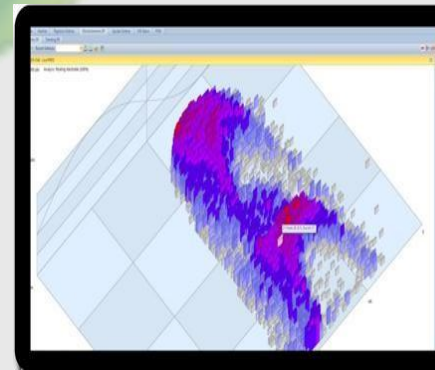


# Asset Condition Based Monitoring System (CMS)

## Monitoring High-Value Assets

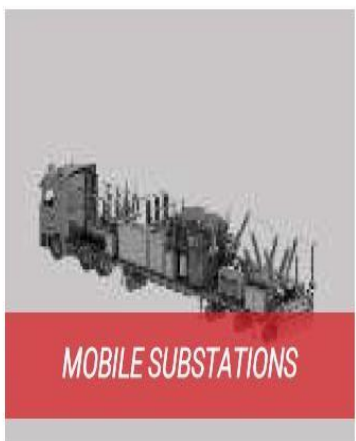
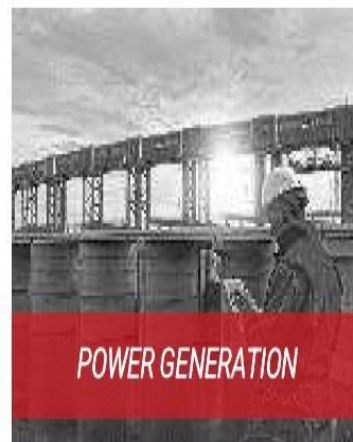
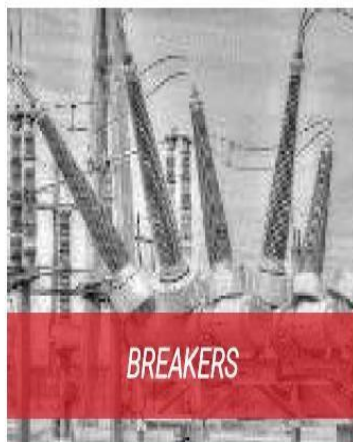
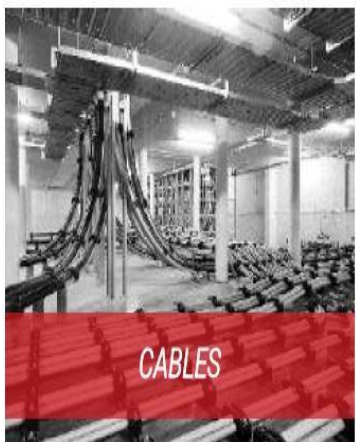
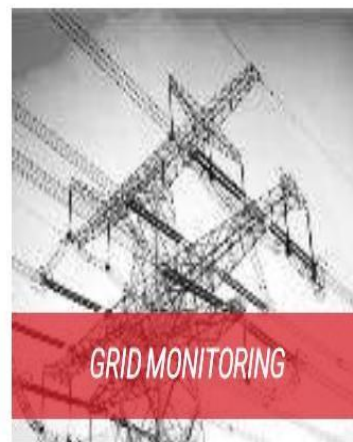
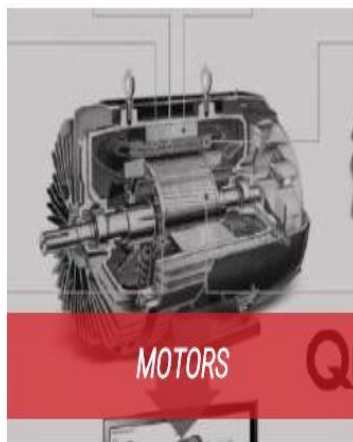
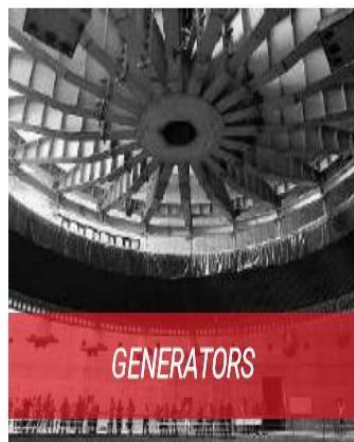
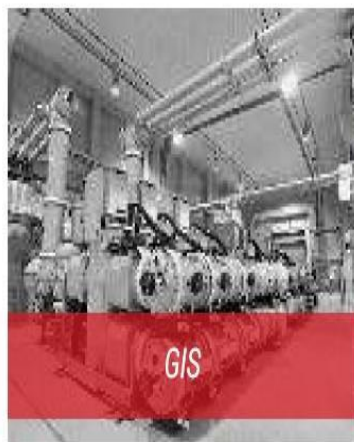
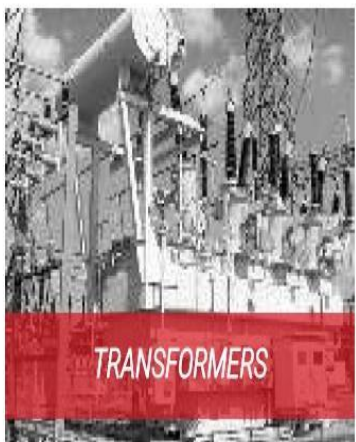
Real-time visibility into electrical asset health across substations which helps from reactive maintenance to predictive Intelligence

- Gas Insulated Switchgear (GIS).
- Power Transformers.
- MV/LV Switchgears.
- Overhead and Submarine Cables.



Comply to Digital Substation SAES-P-130

# TOTAL SOLUTIONS



# GIS Asset Monitoring System

## BCM - BREAKER MONITORING

- Velocity in meters p/second
- Operation time in millisecond
- Coils current
- Motor current (charging mech)
- Auxiliary contacts a & b
- Operation counter
- Mechanism Charging counter/Time
- Heater current monitoring
- Voltage monitoring VDC / VAC
- Phase Current
- Cabinet Temp/Moisture
- SF<sub>6</sub> Pressure monitoring
- SF<sub>6</sub> Density monitoring
- SF<sub>6</sub> DewPoint
- SF<sub>6</sub> Leak Rate and Time to Alarm
- Comtrade Viewer
- Mechanism operation graph
- Contact wear I2t

## PDM - PARTIAL DISCHARGE

- DIELECTRIC HEALTH
- CORONA
- POTRUSION
- VOIDS
- FREE PARTICLES
- FLOATING COMPONENT
- LOOSE OR BAD CONTACT
- DELAMINATION
- ELECTRICAL TREEING

## GDM - SF6 MONITORING

- DEW\_POINT
- DENSITY
- PRESSURE
- COMP. PRESSURE
- GAS TEMP.
- LEAK\_RATE
- TIME TO ALARM
- Kg Loss

## CPD - CABLE XLPE, ETC

- FAULT TERMINATIONS

## ARC

- ARC DETECTION

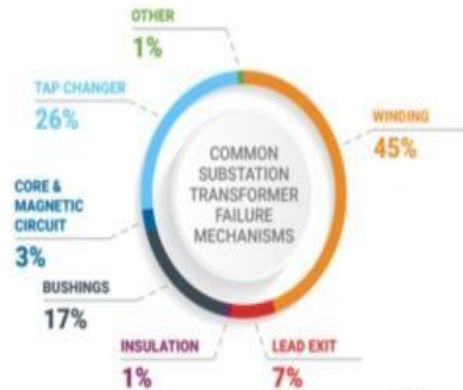
## PDL - FAULT LOCATION

- ToF
- Or by Amplitude

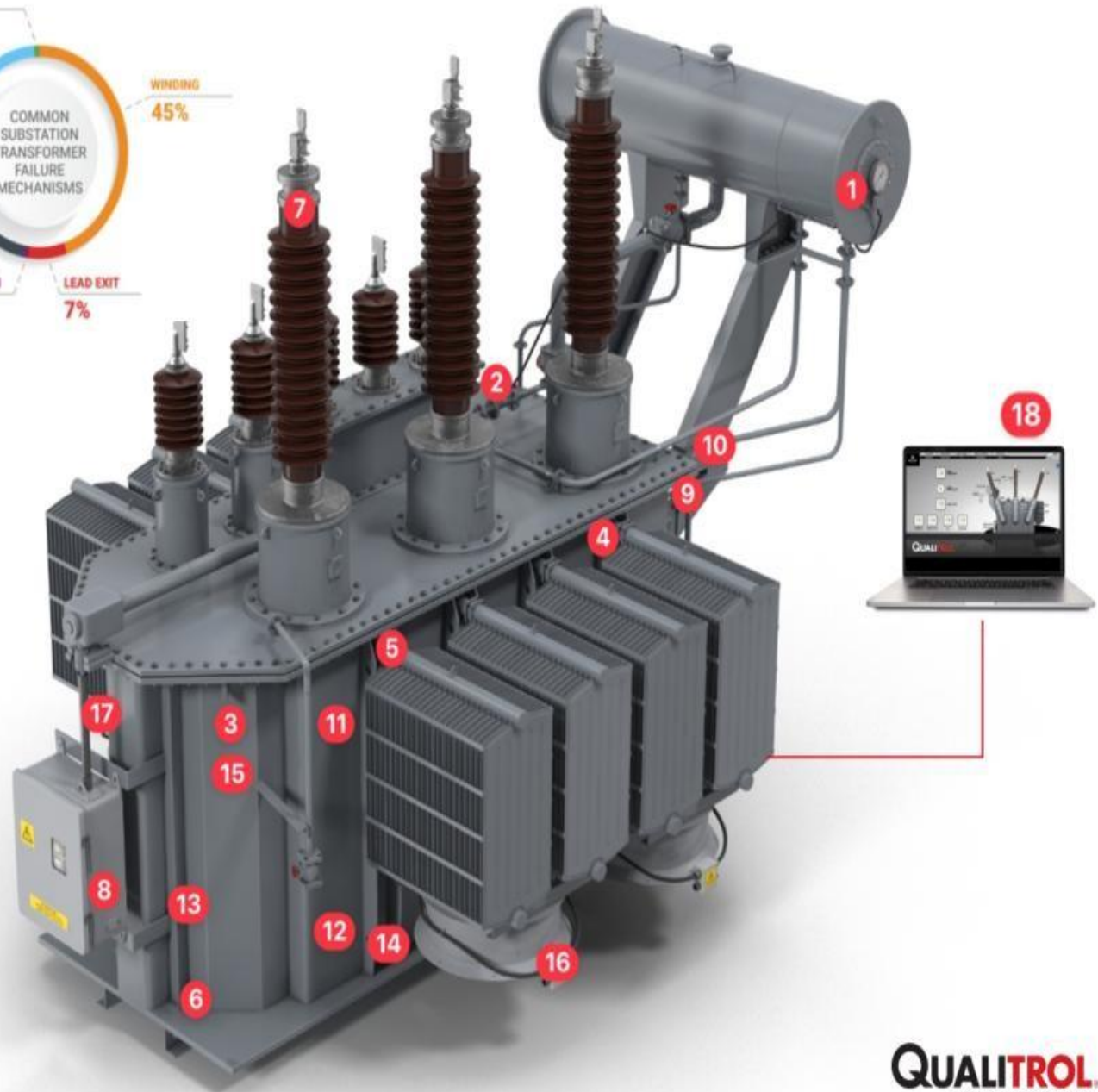


# Power Transformers

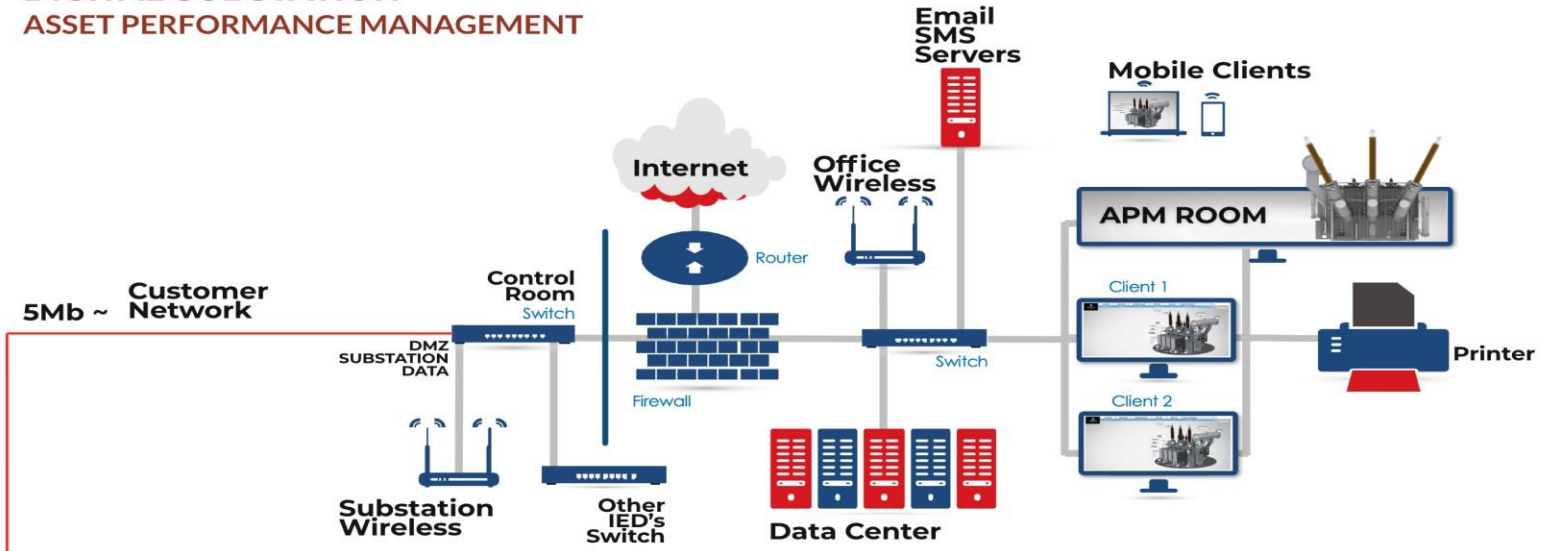
## End To End Monitoring



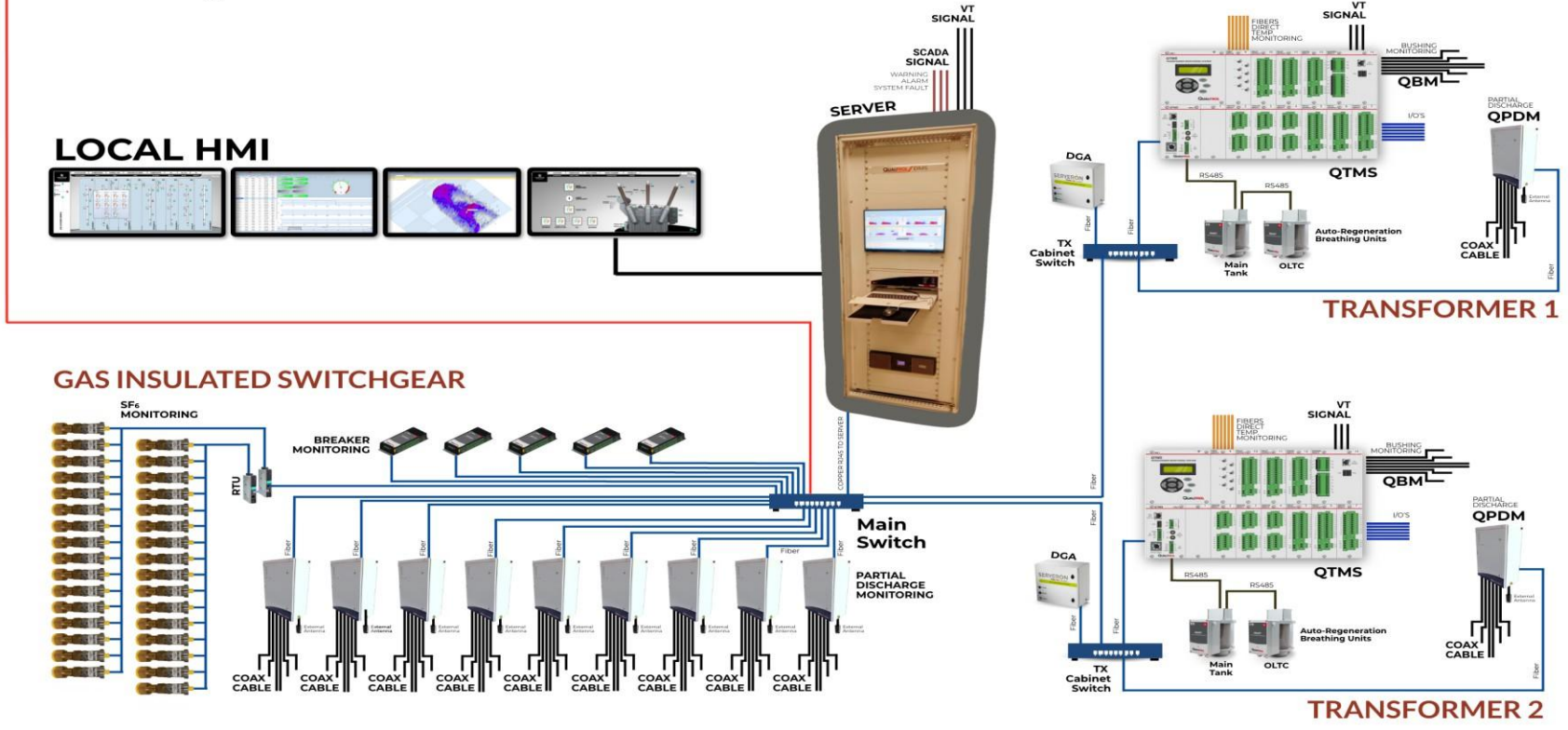
1. Liquid Level Gauges
2. Pressure Relief Devices
3. Winding temp. Thermometers
4. Rapid Pressure Rise Relay
5. Flow Gauges
6. Pressure Vacuum Switches
7. Bushing Monitoring
8. OLTC Monitoring
9. Smart Breather
10. Smart Breather OLTC
11. Fiber Optic Temp. (Neoptix)
12. UHF Partial Discharge
13. Multi-Gas DGA Monitor (Serveron)
14. Single Gas DGA Monitor (Serveron)
15. AKM345 Thermometer
16. Cooling System Monitoring
17. Transformer Monitoring 509 or QTMS
18. APM Platform (SmartSUB)



# END-TO-END DIGITAL SUBSTATION ASSET PERFORMANCE MANAGEMENT



## ASSET LEVEL



# DIGITAL SUBSTATION ASSET PERFORMANCE MANAGEMENT

## SMARTSUB SERVER

## ENGINEERING MANAGEMENT

SOAP  
TRANSPORT  
PROTOCOL



DMZ

VPN TUNNEL FROM HISTORIAN

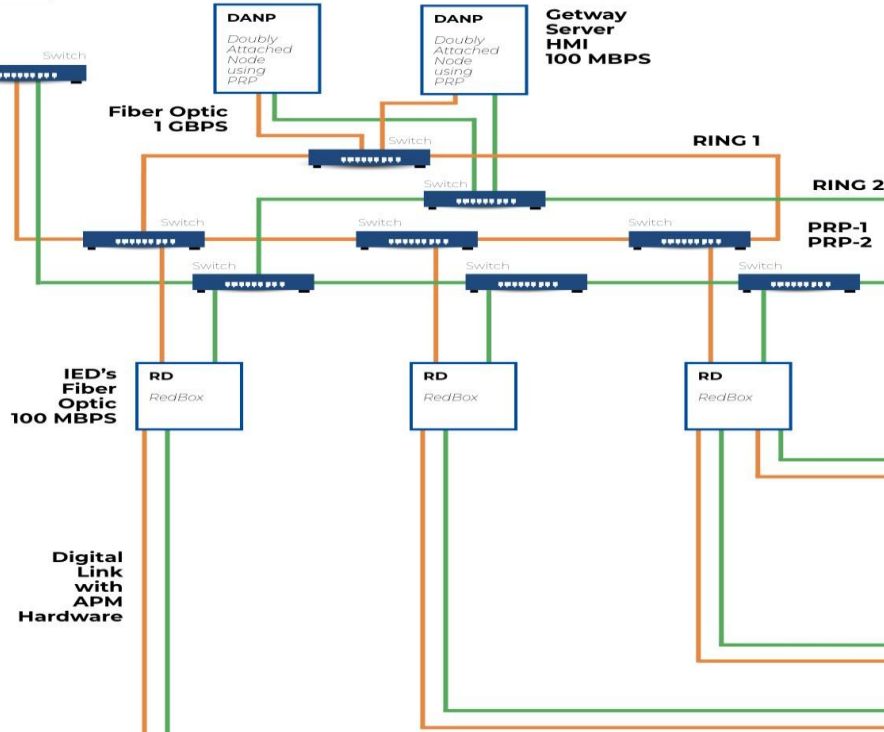
REMOTE NETWORK

SUBSTATION LEVEL

SERVER



**SUBSTATION HMI  
ENGINEERING MANAGEMENT**  
SUBSTATION LEVEL



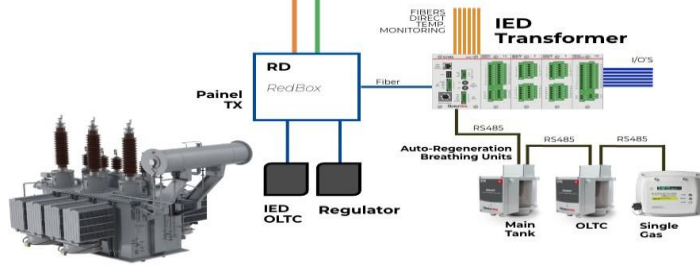
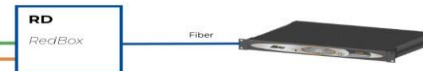
**DFR | TWS | PMU | PQ**  
ASSET PERFORMANCE MANAGEMENT



IDM +  
End-To-End  
DFR Solution

**Battery Monitoring**  
ASSET PERFORMANCE MANAGEMENT

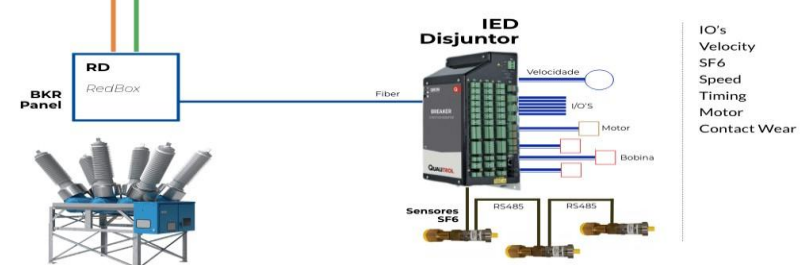
Battery Monitoring



Breathers  
Bushing Monitoring  
I/O's  
Direct Temp. Monitoring  
Partial Discharge  
DGA - Single or Multi-Gas  
Etc ( Customer Needs)

Digitalis:  
Buchholz  
Nivel Óleo  
VAP

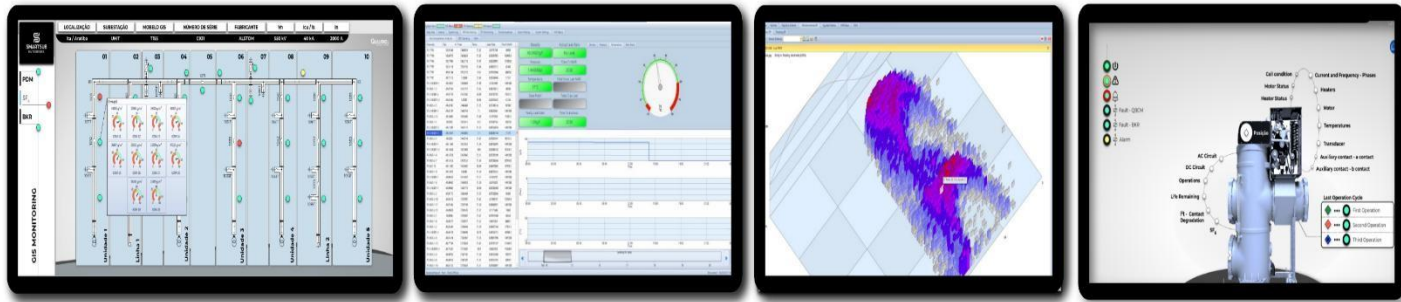
**Transformer Monitoring**  
ASSET PERFORMANCE MANAGEMENT



IO's  
Velocity  
SF6  
Speed  
Timing  
Motor  
Contact Wear

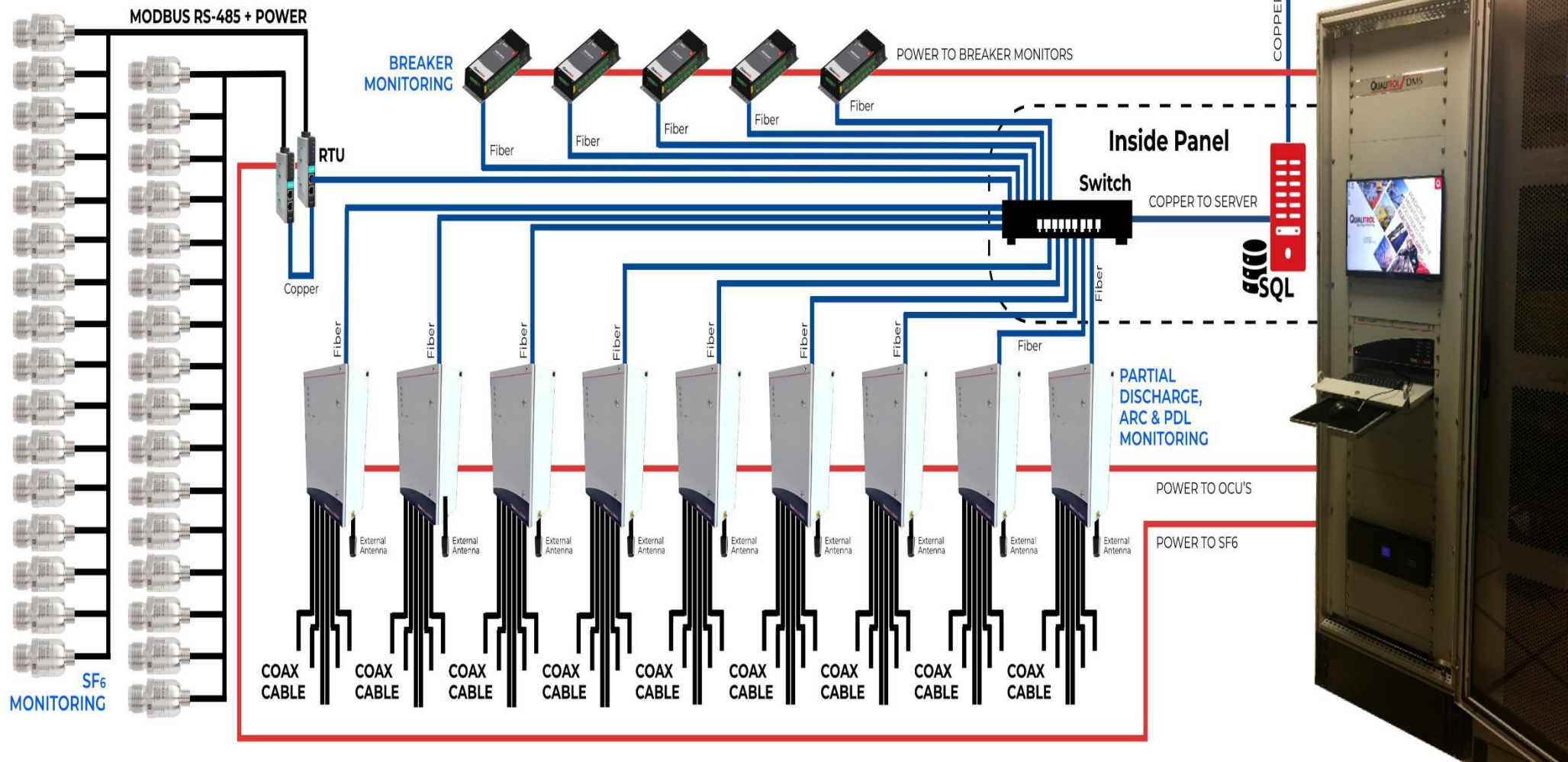
**Breaker Monitoring**  
ASSET PERFORMANCE MANAGEMENT

# PARTIAL DISCHARGE, ARC, PDL, SF6 & BREAKER MONITORING | 5in1

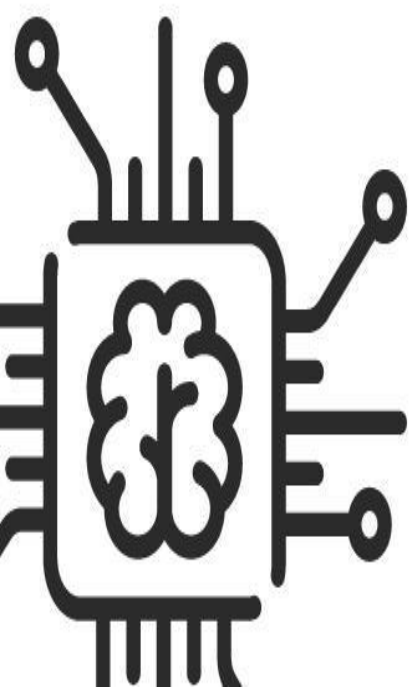
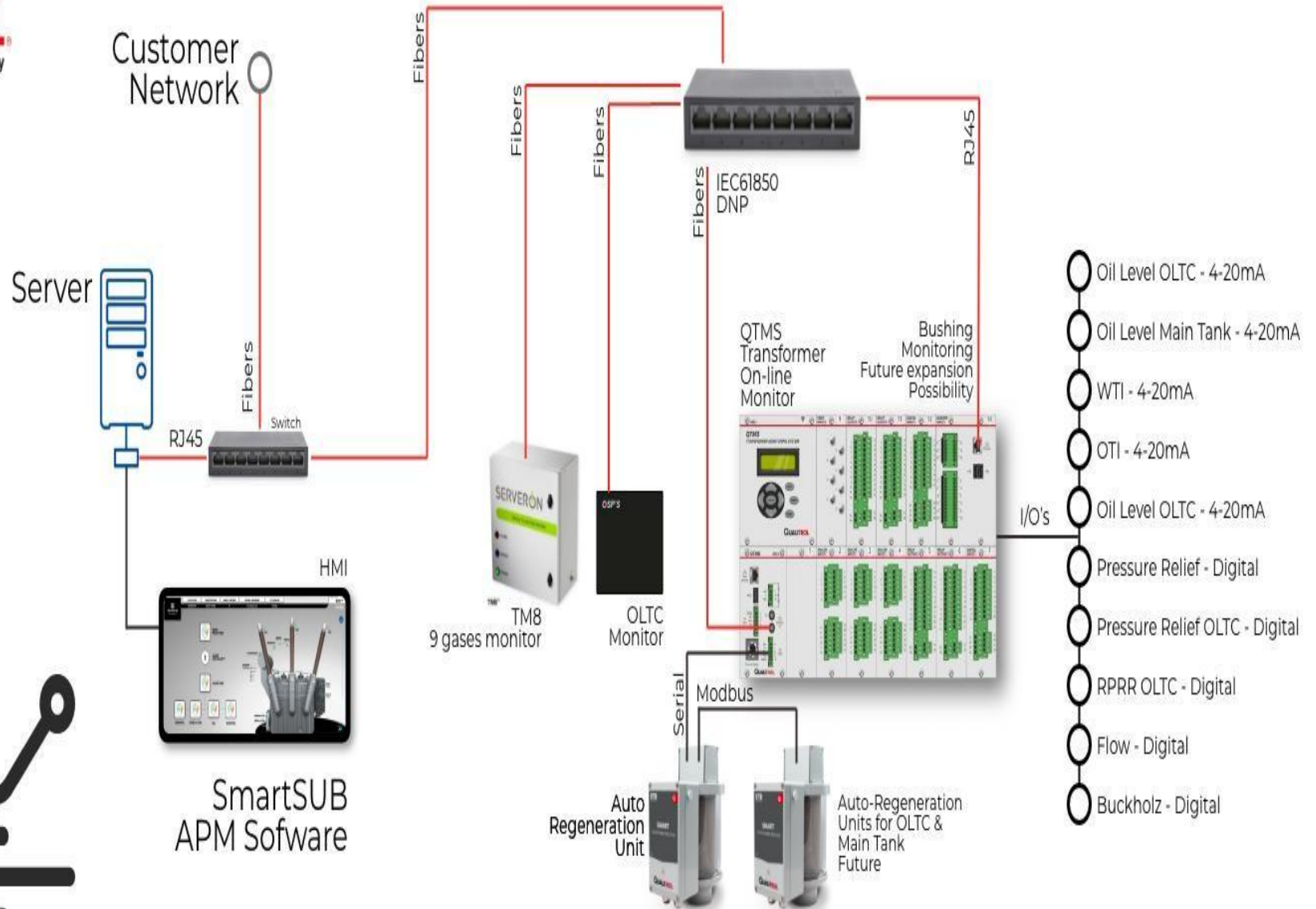


## GAS INSULATED SWITCHGEAR - ASSET MONITORING SYSTEM

Complete Asset Performance Management Solution

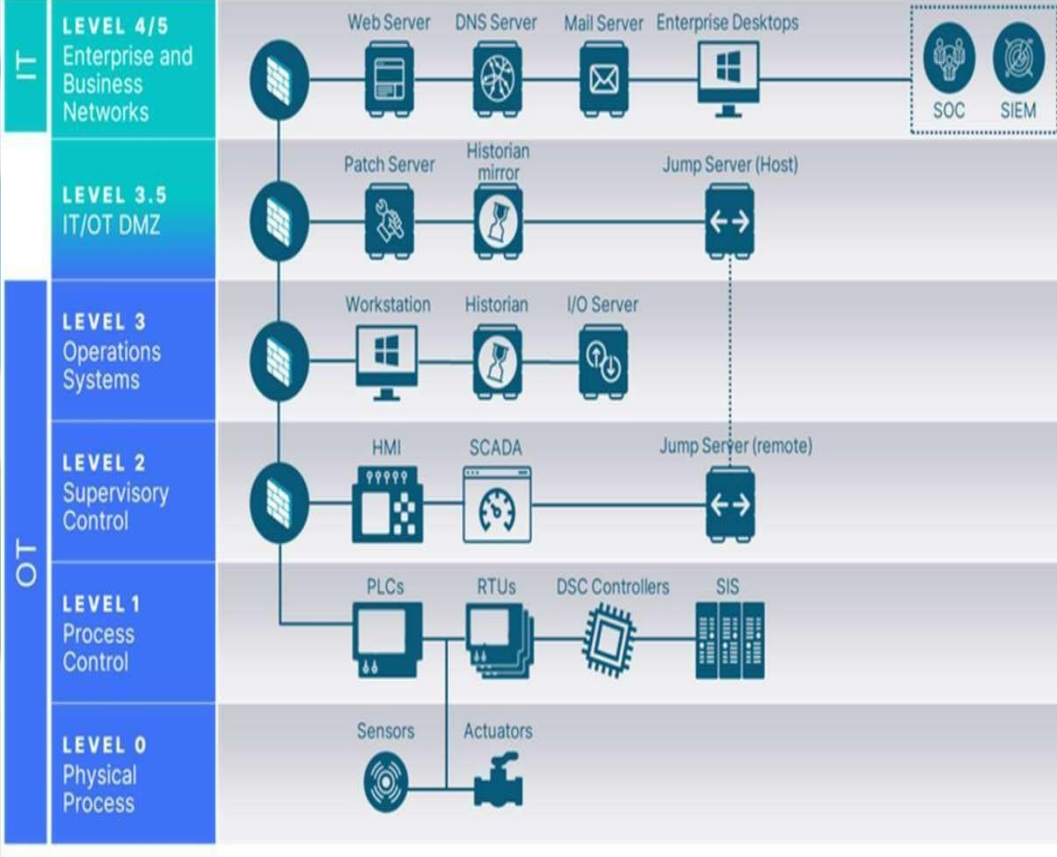


# TRANSFORMER CBM ARCHITECTURE



# OT Cybersecurity

- End-to-end OT cybersecurity for critical infrastructure.
- Purdue Model-based multi-layer protection.
- IEC 62443 & NIST aligned security architecture.
- Secure access, monitoring & threat detection.
- Resilient design with backup and recovery.



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## WHY CHOOSE WAC?



- **Team experience across OEM, EPC & end-user backgrounds.**
- **Integrated power system and automation solutions.**
- **Vendor-neutral, practical engineering approach.**
- **Full asset lifecycle understanding.**
- **Reliability-driven and intelligence-focused mindset.**





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## CONTACT US

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**THANK YOU**  
**FOR YOUR ATTENTION**

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