Establishing End-to-End Asset Visibility in Electric Transmission & Distribution Networks Using IBM Maximo Application Suite 9.x

White Paper for Energy & Utility Industry

Executive Summary

Electric utilities managing transmission and distribution (T&D) networks contend with escalating operational complexity from aging infrastructure, grid modernization, renewable energy integration, and extreme weather events. IBM Maximo Application Suite (MAS) 9.x delivers a unified, cloud-native enterprise asset management (EAM) and asset performance management (APM) platform that provides comprehensive, end-to-end visibility across substations, transmission lines, distribution feeders, and field equipment. This white paper outlines how MAS 9.x enables enhanced situational awareness, optimized maintenance, and risk-based decision-making.

Industry Context: The Visibility Gap

T&D networks cover expansive geographies and comprise highly interconnected assets. Traditionally, utilities have relied on disparate systems (EAM, GIS, SCADA, OMS), leading to fragmented visibility. This fragmentation hinders holistic asset condition assessment and correlation of failures with maintenance history.

Operational Challenges in T&D Visibility

- Asset data scattered across multiple, poorly integrated systems
- Limited correlation between asset condition and real-time performance
- Inconsistent asset hierarchies and naming conventions
- Delayed or unsynchronized field inspection data
- Reactive decision-making due to delayed information

A Unified Asset Intelligence Approach with MAS 9.x

MAS 9.x establishes a single system of record by integrating condition, performance, and work execution data. Core capabilities include:

Enterprise-Wide Asset Modeling

Supports standardized, hierarchical modeling from high-voltage substations to low-voltage feeder equipment.

Integrated Condition & Health Intelligence

Consolidates inspection results and maintenance history to calculate real-time asset health scores.

Spatial Context & Grid Visualization

Deep integration with GIS (Esri ArcGIS) for map-based views of transmission corridors and risk zones.

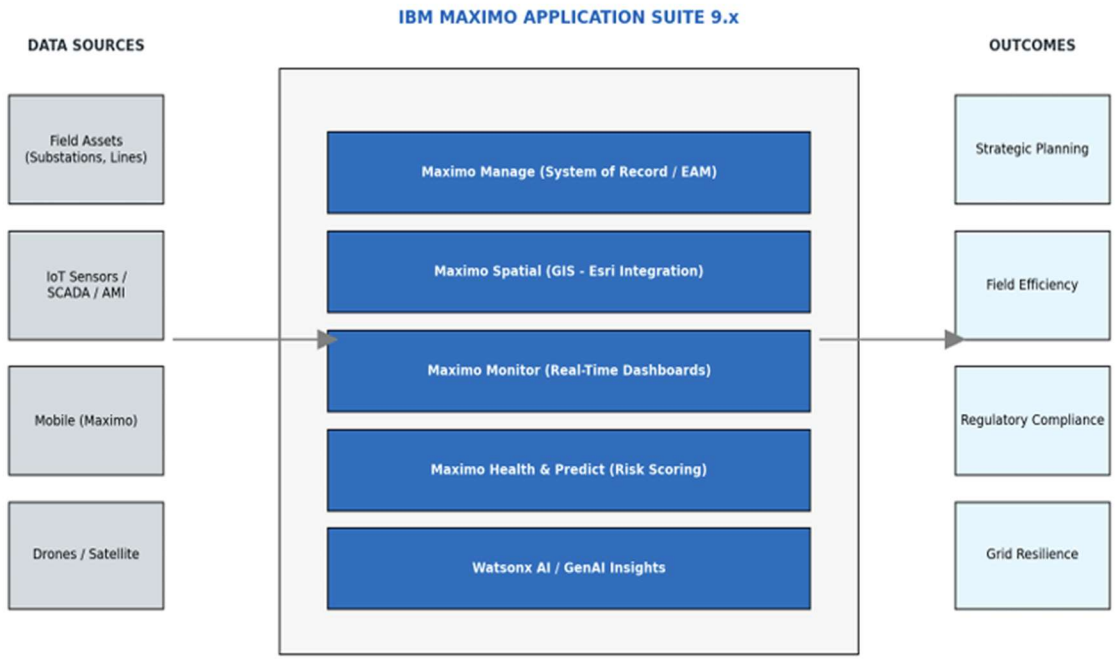

Figure 1: End-to-End Asset Visibility Architecture for Electric T&D Using MAS 9.x

MAS 9.x Platform Enhancements Supporting Visibility

Key updates in version 9.x include:

- watsonx Integration: AI-powered natural-language searches for asset history and work order intelligence.
- Maximo Monitor: Real-time anomaly detection and predictive failure warnings.
- Emissions Management: Tracking fugitive and continuous emissions for ESG compliance.
- Mobile Field Operations: AI-assisted inspections with computer vision for field crews.

Business Outcomes

- Reduced unplanned outages through predictive maintenance.
- Capital investment prioritization based on risk and condition.
- Increased workforce productivity via mobile AI tools.
- Enhanced regulatory compliance and ESG reporting accuracy.

About the Author

Takreem Ahmed Syed

Takreem Ahmed Syed is a distinguished expert in Enterprise Asset Management (EAM) with a specific focus on the IBM Maximo Application Suite. With extensive experience in the Energy & Utilities sector, Takreem specializes in designing end-to-end asset visibility solutions that integrate Information Technology (IT) with Operational Technology (OT). His expertise spans the full Maximo lifecycle, including implementation, integration with GIS and SCADA systems, and leveraging Maximo Health and Predict to drive grid resilience and operational excellence.