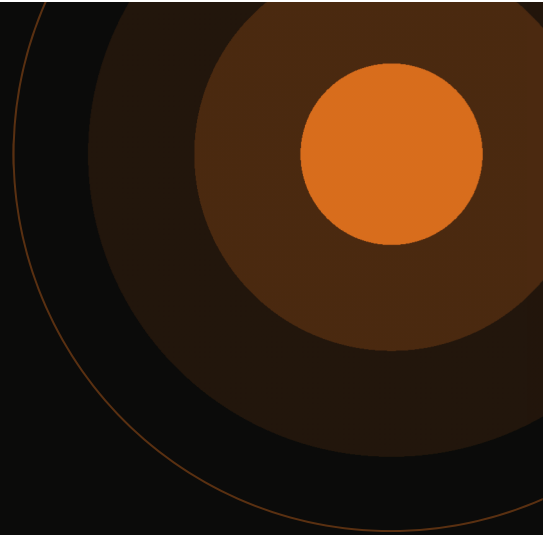




PLATFORM OVERVIEW

Seven layers. One unified **intelligence** **platform.**

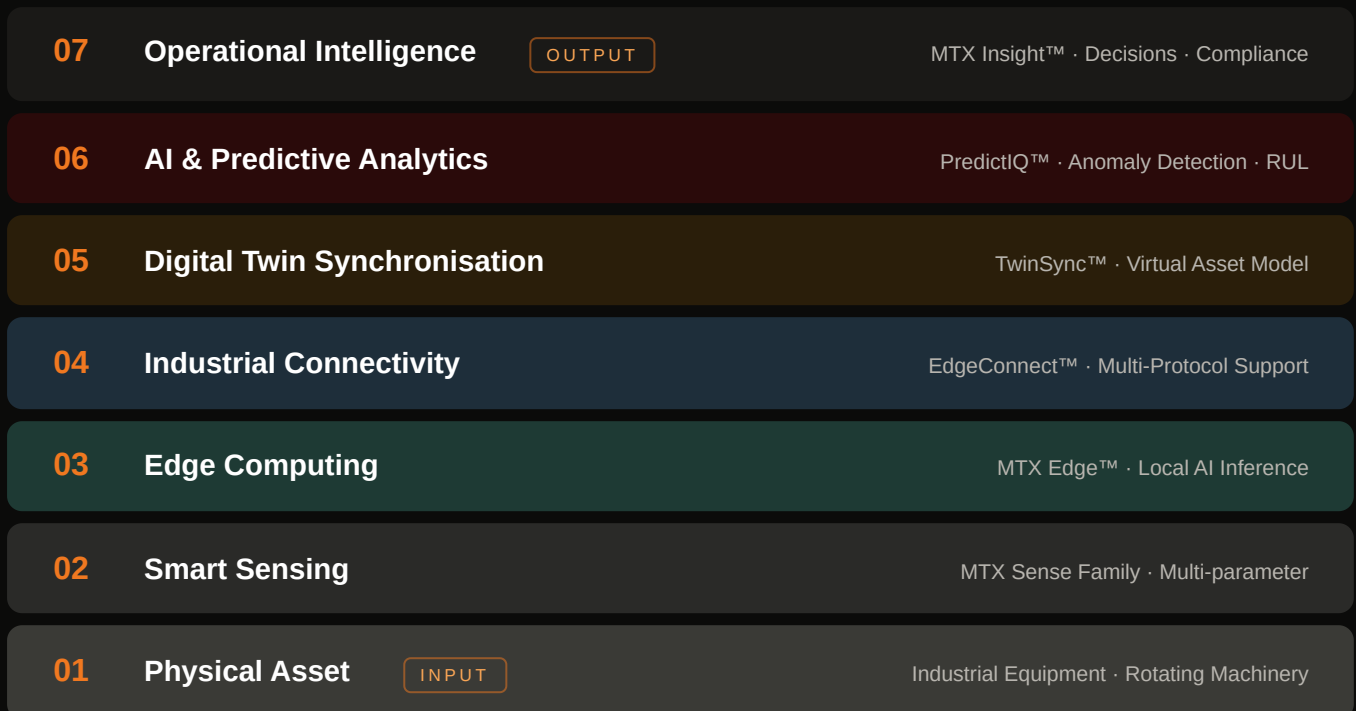
The Motiontrons platform integrates smart sensing, intelligent motion control, industrial connectivity, digital twins, and AI-driven analytics into a cohesive architecture — connecting physical industrial assets to actionable operational intelligence.

ARCHITECTURE

A complete stack — from sensor to decision.

Most industrial monitoring deployments address single layers in isolation — sensors without analytics, connectivity without intelligence, or software without reliable data foundations.

The Motiontrons platform addresses all seven layers as an integrated system. Each layer is independently deployable, but designed to operate as a unified architecture where data flows bidirectionally from asset to decision.



PLATFORM CAPABILITIES · 01-03

From the asset to the network.

01 Smart Sensing

Precision measurement at the asset.

The MTX Sense family covers the full spectrum of industrial measurement — vibration, pressure, temperature, flow, and level. Each instrument is designed for the operating demands of industrial environments, with appropriate protection ratings, extended calibration intervals, and industrial communication interfaces. Data is conditioned at source before transmission to the edge layer, ensuring signal quality and reducing unnecessary data volume.

MTX SenseV™ · MTX SenseP™ · MTX SenseT™ · MTX SenseF™ · MTX SenseL™

Multi-parameter sensing with on-board signal conditioning and digital output. Compatible with 4–20mA, HART, IO-Link, and industrial digital protocols.

02 Intelligent Motion

Precision control where it matters.

MTX DriveEH™ and MTX MotionCore™ address two distinct domains of industrial actuation — electro-hydraulic control for heavy-duty applications, and precision servo motion for high-accuracy manufacturing processes. SmartHydraulics™ adaptive control algorithms continuously optimize hydraulic actuator performance, compensating for seal wear, fluid viscosity variation, and temperature effects to maintain positioning accuracy throughout the asset lifecycle.

MTX DriveEH™ · MTX MotionCore™

SmartHydraulics™ adaptive algorithms. High-cycle-life electro-hydraulic valves. Precision servo positioning. Motion profile programming.

03 Industrial Connectivity

OT/IT convergence without infrastructure replacement.

MTX Edge™, MTX Connect™, and MTX Link™ form the connectivity layer of the Motiontrons platform. EdgeConnect™ technology supports a wide range of industrial protocols including OPC-UA, Modbus, PROFINET, DNP3, IEC 61850, MQTT, and proprietary vendor protocols, enabling integration with existing DCS, SCADA, PLC, and historian systems without requiring their replacement. MTX Edge™ executes AI inference and anomaly detection locally, maintaining operational intelligence independent of network connectivity.

MTX Edge™ · MTX Connect™ · MTX Link™

EdgeConnect™ protocol stack. OPC-UA, Modbus, PROFINET, DNP3, IEC 61850, MQTT. Local AI execution and edge inference. Secure TLS connectivity.

PLATFORM CAPABILITIES · 04 – 06

From data to decisions.

04 Digital Twin Synchronisation

Physical and virtual, in real time.

TwinSync™ is Motiontrons' proprietary digital twin synchronisation platform. It maintains a continuously updated virtual representation of each physical asset, synchronised using streaming sensor data from the edge layer. MTX Twin™ provides the operational interface for twin management — enabling operators to monitor assets remotely, replay historical operating states, simulate load scenarios, plan maintenance interventions, and access a complete asset record without physical presence.

MTX Twin™

TwinSync™ synchronisation engine. Continuous streaming updates. Historical state playback. Maintenance scenario simulation. 3D model integration.

05 AI & Predictive Analytics

Weeks of warning before failure.

PredictIQ™ is Motiontrons' proprietary industrial AI platform for predictive maintenance and anomaly detection. Unlike consumer AI engines adapted for industrial data, PredictIQ™ is built specifically for multi-variate industrial time-series data — training models on equipment-specific operating signatures, identifying deterioration trends across multiple parameters simultaneously, and providing remaining useful life estimates with confidence bounds. MTX Predict™ is the operational application built on PredictIQ™.

MTX Predict™

PredictIQ™ AI engine. Multi-variate anomaly detection. Remaining useful life estimation. Site-adaptive model training.

06 Operational Intelligence

From data to decisions.

MTX Insight™ is the unified operational intelligence interface for the Motiontrons platform. It aggregates data from all connected assets into a configurable dashboard environment that supports shift handovers, maintenance planning, KPI reporting, and regulatory compliance. Alert management, configurable thresholds, and workflow integration ensure that the right information reaches the right people at the right time — across both desktop and mobile interfaces.

MTX Insight™ · MTX Asset™

Real-time KPI dashboards. Configurable alert workflows. Maintenance scheduling integration. Audit trail and compliance reporting. Mobile-responsive interface.

DESIGN PRINCIPLES

Built for industrial reality.

Layered Deployment

The platform supports phased deployment — starting with sensing and connectivity, adding analytics, and progressively enabling digital twin and AI capabilities as operational data matures. Each phase delivers standalone value while contributing to the integrated system.

Existing Infrastructure Integration

Motiontrons is designed to add intelligence on top of existing control systems, not replace them. DCS, SCADA, PLC, and historian systems remain in place; the Motiontrons platform integrates with and enhances them rather than requiring infrastructure replacement.

Edge-First Reliability

AI inference, anomaly detection, and local control execute at the edge — maintaining operational intelligence even when cloud or WAN connectivity is unavailable. The platform is designed for industrial reliability, not cloud dependence.

Bidirectional Architecture

The platform is not purely a monitoring system. Integrated motion control and connectivity enable closed-loop automation — detecting anomalies and responding through intelligent actuation, not just alerting operators.

DEPLOY THE PLATFORM

Ready to connect your assets to intelligence?

Speak with the Motiontrons engineering team about your infrastructure, integration requirements, and the right starting point for your deployment.

support@motiontrons.com · www.motiontrons.com