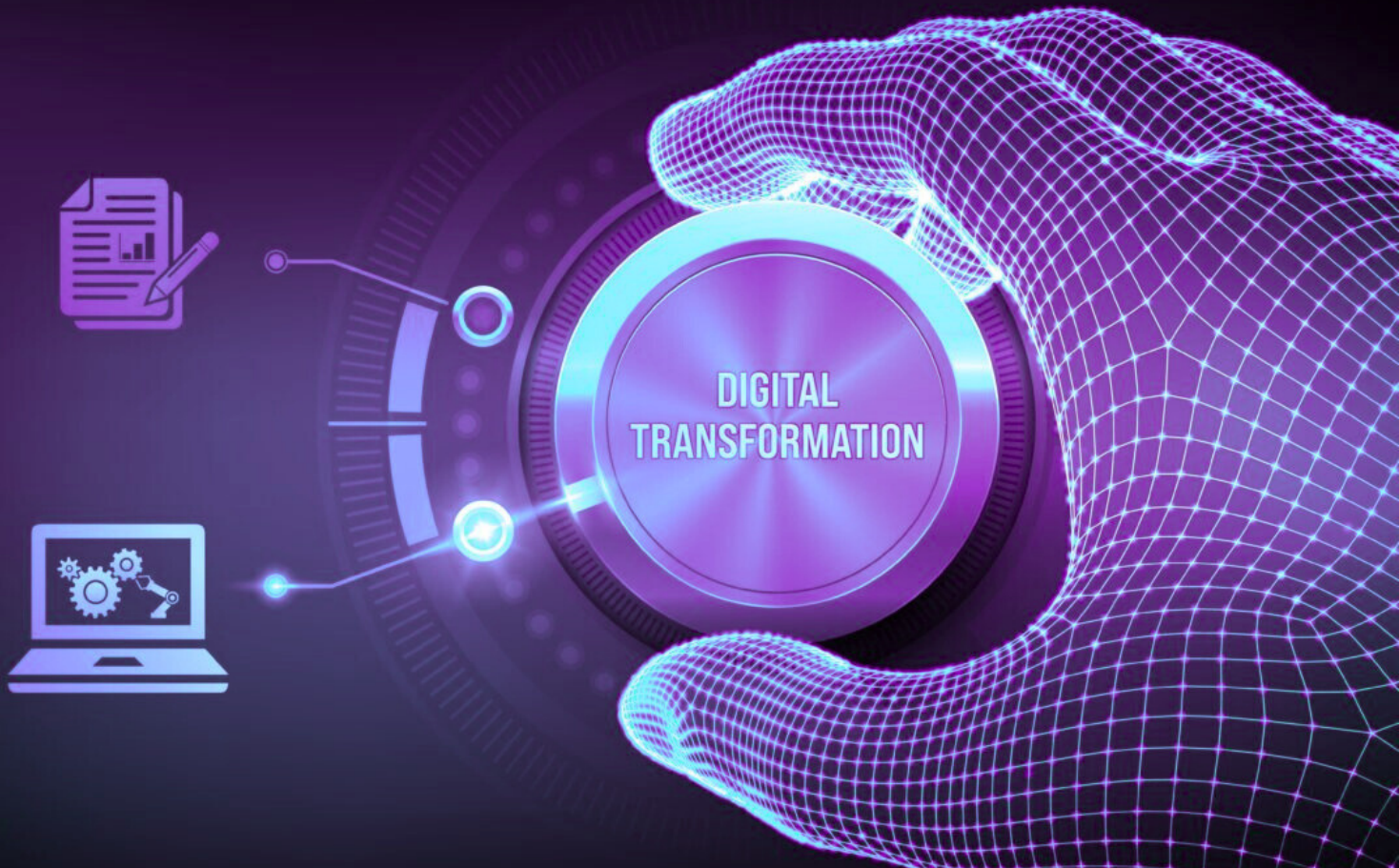




X- Force Digitalization

DATA MANAGEMENT PLATFORM

Data Management Platform

One On-Premise Data Lake for Every Source of Plant Data

X-Force Data Management Platform (XDMP) is a fully on-premise industrial data lake that unifies time-series, transactional, semi-structured and unstructured data into a single governed platform. Built on a Bronze → Silver → Gold medallion architecture, it turns fragmented plant data into trusted, analytics-ready intelligence — powering BI, Machine Learning and a Generative AI assistant, entirely within your own data center.

- Fully On-Premise
- Unified Data Lake
- Medallion Architecture
- BI & ML Ready
- Generative AI Assistant
- DC-DR Resilient

VALUE DELIVERED WITH XDMP

Single Source of Truth

Break data silos across OT & IT. One governed lake for every plant, system and file type.

Data Sovereignty

Lake, analytics and AI run 100% on-prem across DC/DR. No cloud dependency.

Trusted by Design

Medallion quality promotion certifies lineage, accuracy and access before use.

Insight to Action

Curated data feeds dashboards, KPIs, ML models and Gen-AI, on demand.

PLATFORM CAPABILITIES



Unified Ingestion

Streaming, scheduled batch and event-driven jobs. OT tags, SQL, SAP/MES payloads and files ingested as-is.



All Data Types

Time-series, transactional, semi-structured (JSON/XML/logs) and unstructured (PDF, image, video) in one place.



Connect Anything

OPC-DA/UA, Modbus, MQTT, REST, ODBC/SQL, plus connectors to SAP, LIMS, MES, HRMS and documents.



Quality & Cleansing

Anomaly, drift, spike, stuck-value and duplicate detection; schema-drift checks; ISA-95 mapping.



Data Catalog

Business tags & classification (Public/Internal/Confidential/Sensitive) with ownership and lineage.



Search & RAG

Elasticsearch indexing and Retrieval-Augmented Generation make every document instantly discoverable.



BI & Visualization

Qlik-powered dashboards, geo-analytics and pixel-perfect paginated reports with multi-channel dispatch.



AI / ML Platform

ML feature store with rolling stats & event windows for predictive and prescriptive analytics.



Generative AI Assistant

Ask questions in natural language; get instant answers grounded in your own plant data, on-prem.

HOW IT WORKS — MEDALLION DATA LAKE

Bronze · Raw

Data captured exactly as received — historian values, SQL extracts, SAP/MES payloads and files — with ingestion timestamp and source system preserved.

Silver · Cleansed

Standardized to naming conventions, mapped to ISA-95, validated for anomalies, de-duplicated, parsed, enriched with metadata and contextually linked.

Gold · Certified

Aggregated rollups, KPI computation, ML features and BI-optimized schemas — certified with quality scoring, versioning and access governance.

TECHNOLOGY & CAPACITY

Deployment Model	Fully On-Premise — Data Center (DC) + Disaster Recovery (DR)
Data Types Supported	Time-series, transactional, semi-structured, unstructured
Ingestion Rate	50–90 Mbps • sustainable 20,000 tags/second
Active Tags	50,000 → scalable to 100,000+
Storage Capacity	60 TB (data platform), scalable
Data Retention	Up to 10 years
Resilience	DC–DR redundancy • RPO 4 hrs • RTO 24 hrs
Analytics & BI	Qlik Sense — dashboards, geo-analytics, paginated reports; ML platform
Search	Elasticsearch + Retrieval-Augmented Generation (RAG)
Ingestion Channels	OPC-DA/UA, Modbus, MQTT, REST API, ODBC/SQL, file & document connectors

DATA GOVERNANCE · SECURITY · QUALITY

Governance

Data ownership & stewardship across IT/OT. Immutable audit trail on every value, setpoint & alarm. Structured asset templatinization and retention policy under ISO-certified processes.

Security

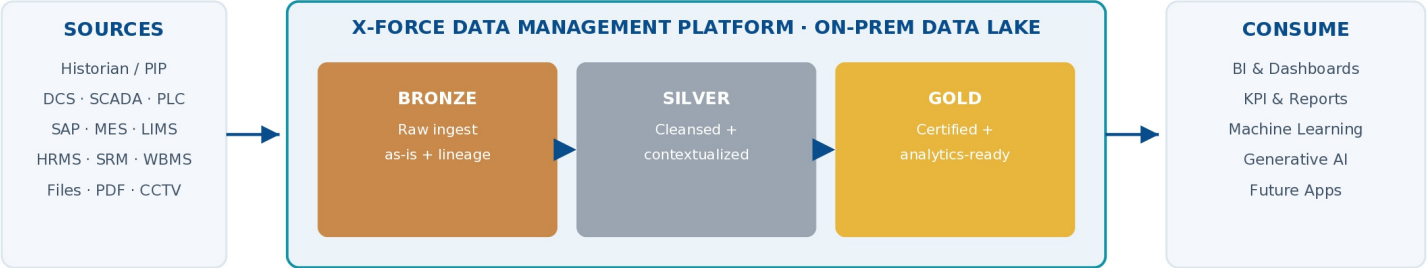
RBAC with AD/LDAP and M365 Entra SSO & MFA. Encryption in transit & at rest. Segregated OT/IT architecture (firewall/DMZ). IEC 62443-aligned. Full audit logging.

Quality

Rule-based validation at ingestion (range/limit). Outlier & null handling. Duplicate & inconsistency detection. Configurable quality thresholds per tag or parameter.

ISO 9001:2015 • ISO 27001 • CMMI Level 3 • IEC 62443-Aligned Industrial Cybersecurity

ENTERPRISE DATA ARCHITECTURE



SUMMARY

X-Force Data Management Platform (XDMP) is a fully on-premise industrial data lake that unifies every type of plant and enterprise data into a single, governed source of truth. Through a Bronze → Silver → Gold medallion architecture, XDMP ingests raw data, promotes it through automated cleansing and contextualization, and certifies analytics-ready datasets. Integrated Qlik BI, an ML platform and a Generative AI assistant turn that trusted data into predictive insight and faster decisions — connecting siloed plant networks into one enterprise advantage, securely within your own data center.