
aspentech
Brochure
Unify OT Data Into Trusted, Contextualized, AI-Ready Intelligence
AspenTech Inmation™
OT DATA FABRIC

Introduction

Industrial organizations generate vast amounts of operational data, but too often that data remains fragmented across systems, sites and applications. Point-to-point integrations and basic routing layers may move data, but they do not preserve the operational context, persistent history and live state needed to scale analytics, governance and AI across the enterprise.

AspenTech Inmation OT Data Fabric solves this by unifying OT data into a stateful, persistent enterprise namespace and continuously contextualizing it into trusted, query-ready intelligence. It connects plants, assets and applications across edge, cloud and on-premises environments, giving teams a consistent real-time and historical operational picture they can use with confidence.

With centralized governance, role-based access and auditability built in, AspenTech Inmation OT Data Fabric helps organizations replace isolated data silos with a secure, scalable foundation for operational decision-making, analytics and industrial AI.

What Is an Industrial Data Fabric?

An industrial data fabric unifies OT data from across the operation into a governed, persistent and reusable foundation for enterprise use. Instead of relying on limited point integrations or disconnected systems, it creates a shared operational model that preserves both live-state and historical context—so data is not only accessible, but meaningful, trusted and ready for use.

For industrial organizations, that means operational data can be used more consistently across sites, systems and teams, while supporting the governance, traceability and scalability required for enterprise operations.

AspenTech Inmation OT Data Fabric provides this as a modern OT data foundation that helps organizations move faster with more secure, consistent and actionable industrial intelligence.

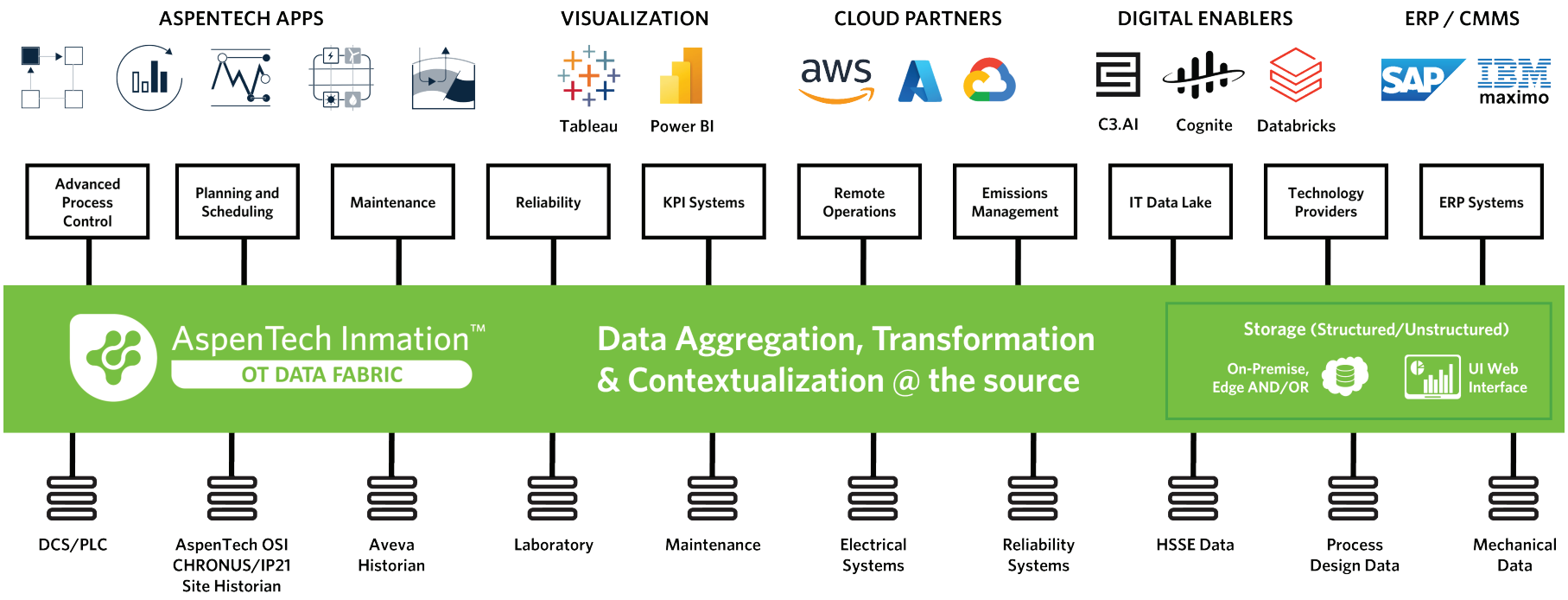


Figure 1. AspenTech Inmation OT Data Fabric changes the data paradigm from hard-to-get data to a unifying data fabric.

Purpose-Built for Industry

Industrial organizations do not need another generic data platform. They need an OT-native industrial data fabric that can unify fragmented operational data, preserve live and historical context, and support secure reuse across sites, systems and applications. AspenTech Inmation OT Data Fabric is purpose-built for that role.

Unlike brittle point-to-point integrations or broker-style approaches that only move messages, AspenTech Inmation OT Data Fabric maintains a living operational picture. That means teams work from the same governed model across assets, plants and the enterprise—without rebuilding context for every new use case, application or AI initiative.

The result is a more durable OT data foundation that helps organizations simplify complexity, improve consistency and create a stronger base for enterprise analytics and industrial AI.

Figure 2. AspenTech Inmation WebStudio is designed to be a secure and singular interface to access your entire data source network.

Native OT Connectivity and Vendor-Agnostic Integration

AspenTech Inmation OT Data Fabric is designed to operate in the heterogeneous reality of industrial environments—where multiple vendors, generations of technology and protocols coexist. It provides native connectivity across a wide range of OT and IT systems without forcing standardization or replacement.

Out-of-the-box support includes industrial protocols and platforms such as OPC UA, MQTT, Modbus, OSIsoft PI, Honeywell PHD, PLCs, DCS, SCADA systems, historians and enterprise applications. This vendor-agnostic approach allows organizations to unify any data source, from high-frequency sensor data to events, alarms and reference data, into a single governed operational foundation.

By eliminating dependence on proprietary stacks or brittle middleware layers, AspenTech Inmation OT Data Fabric reduces integration risk, accelerates onboarding of new data sources and preserves flexibility as technologies evolve.

Enterprise-Scale Architecture

Industrial data strategies often work at pilot scale, then break down as sites, data streams and consumers multiply. AspenTech Inmation OT Data Fabric is built to scale from a single site to the global enterprise with horizontal workload distribution and unlimited layering, so organizations can expand without re-architecting as adoption grows.

Its next-generation node architecture replaces rigid, predefined components with a modular, runtime-configurable design. With functional roles enabled through configuration rather than code, teams can simplify deployment, accelerate upgrades and maintain more consistent operations across environments.

The architecture is also optimized for efficient growth. An improved memory footprint, on-demand loading and distributed compute help reduce hardware requirements, lower per-component CPU load and support continued horizontal scaling across sites. The result is predictable performance, operational consistency and an industrial data fabric that grows with the business.

Contextualization at Scale

Industrial data becomes valuable only when it is connected to the assets, processes and relationships that give it meaning. AspenTech Inmation OT Data Fabric transforms fragmented OT data into a trusted, persistent, query-ready context layer that works across sites, assets and applications—so teams can stop rebuilding context for every new project.

By connecting time-series, events and reference data into one governed model, it creates a shared operational foundation with consistent definitions, hierarchies and traceability. That makes data more reusable for operations, analytics and industrial AI, while reducing the engineering effort and duplication that come with one-off mappings and point solutions.

The result is faster onboarding for new applications and AI initiatives, better decision-making through consistent operational context and a scalable approach to contextualization that stays aligned as the enterprise grows.

To support evolving use cases, AspenTech Inmation OT Data Fabric provides open APIs—including REST, JSON and OPC UA—that allow secure access to real-time and historical data from analytics platforms, BI tools, MES applications and custom solutions.

An embedded LUA scripting engine further extends flexibility, allowing teams to implement event logic, transformations and custom workflows close to the data. This makes it possible to adapt the industrial data fabric to new requirements without disrupting core operations.

Semantic Modeling and Metadata Enrichment

AspenTech Inmation OT Data Fabric applies semantic modeling to organize data into hierarchies that mirror physical and logical assets—plants, units, equipment and sensors—while enriching them with metadata such as units of measure, limits, calibration status and asset attributes.

This semantic layer enables data lineage, traceability and consistent interpretation across users and applications. It also ensures that analytics, AI models and digital twins operate on trusted, contextualized data, reducing rework and improving result reliability.

Built for Analytics and Industrial AI

Industrial AI requires more than access to raw data. It depends on trusted operational context, persistent history and governed access across the enterprise. AspenTech Inmation OT Data Fabric provides that foundation so organizations can apply analytics and industrial AI with greater consistency, confidence and scale.

The result is faster decisions, more effective analytics and a stronger path to scalable industrial AI—built on data that is contextualized, governed and ready for enterprise use.

Security and Compliance by Design

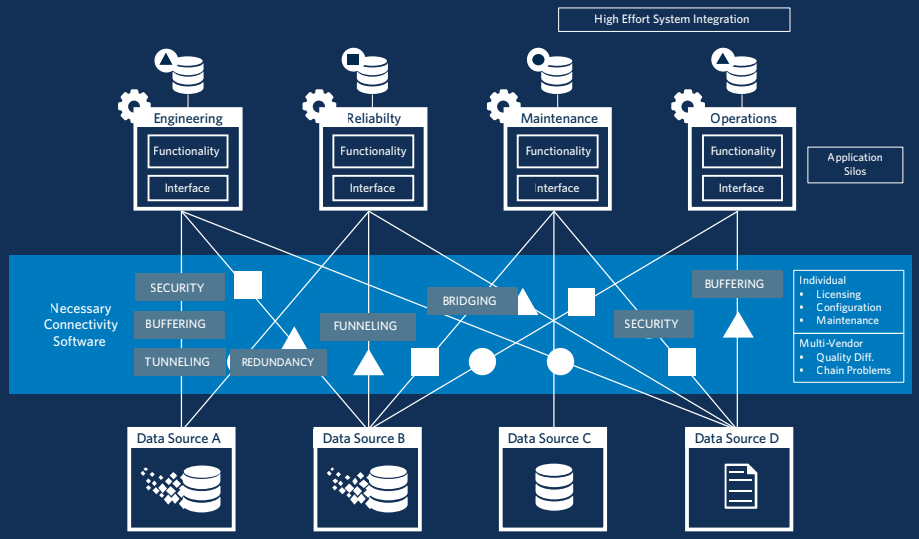
As industrial data access expands across teams, applications and AI-driven workflows, governance cannot be an afterthought. AspenTech Inmation OT Data Fabric is designed to centralize access policies, enforce role-based access and provide full auditability so data remains secure, compliant and trusted across environments.

Instead of multiplying unmanaged integration paths and inconsistent controls, it provides a governed foundation for operational data access. That gives organizations a more consistent way to support analytics and industrial AI while keeping usage aligned to security and compliance requirements.

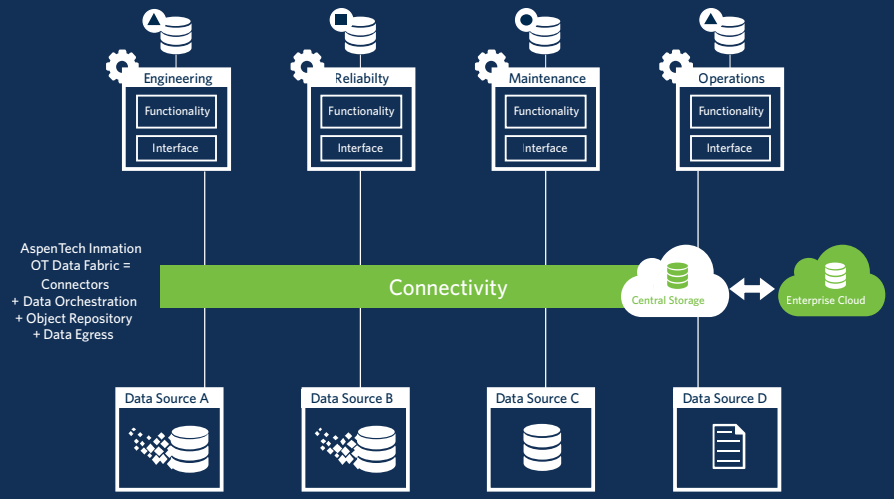
The result is faster, more confident data access for the business, fewer policy workarounds and a stronger foundation for scaling secure self-service across the enterprise.

AspenTech Inmation OT Data Fabric is designed with a defense-in-depth security model suited for critical infrastructure. All data transfer is handled through secure, single-port tunneling, reducing attack surfaces and simplifying firewall configurations.

Data is encrypted both in motion and at rest using industry-standard protocols, while centralized access policies and audit logging ensure compliance and traceability. Store-and-forward buffering provides resilience during network interruptions, preserving data continuity when connectivity is lost between edge and central environments.



Example Legacy OT Data Architecture



OT Data Connectivity Concept using AspenTech Inmation OT Data Fabric

Figure 3. Legacy OT data architecture vs data connectivity using AspenTech Inmation OT Data Fabric.

Cross-Platform Deployment Freedom

Industrial data strategies need to run where the business operates—not where infrastructure limitations force them to run. AspenTech Inmation OT Data Fabric supports deployment across cloud, hybrid and on-premises environments on Windows, Linux and ARM, giving organizations the flexibility to standardize on one industrial data fabric while placing workloads where they deliver the most value.

This deployment freedom helps simplify operations across edge, plant, regional and enterprise environments. With a consistent runtime model across platforms, teams can reduce deployment complexity, expand hardware choice and support more modern rollout patterns without changing the core operating model.

The result is a more adaptable and future-ready foundation for industrial data—one that supports evolving infrastructure strategies while maintaining the governance, consistency and scale required for enterprise operations.

Proven Across Industrial Sectors

AspenTech Inmation OT Data Fabric is used across industries such as oil and gas, chemicals, pharmaceuticals, manufacturing, metals and mining, food and beverage and utilities. Typical outcomes include improved asset reliability, enhanced regulatory compliance and accelerated deployment of advanced analytics and AI initiatives.

AspenTech Inmation Success Stories

TotalEnergies is deploying AspenTech Inmation across its industrial operations worldwide to aggregate and centralize millions of real-time data points into a single, secure platform. By unlocking unified access to operational data, TotalEnergies is accelerating the integration of AI into industrial processes, enhancing operational safety and performance, optimizing energy efficiency, and reducing CO2 emissions.

AspenTech Inmation provides the technological backbone to support the smart manufacturing initiative for all of Boehringer Ingelheim's worldwide operations. AspenTech Inmation is guaranteed to enhance its product according to the challenging requirements of GxP in the regulated environment of pharmaceutical production.

AspenTech Inmation forms the "digital glue" required to integrate any equipment, automation system, MES and other operational data sources. It acts as a single, real-time data platform for the entire business unit. Bayer has seen a reduction of downtime, waste and other inefficiencies.

AspenTech Inmation supplies full data integration for SIG's next generation food packaging lines. Full standardization by using OPC UA across all equipment components, partially composed of third-party supplies. Creating a holistic packaging line address space in real-time, including full data historization for hundreds of thousands of items produced per day, different analytics and reporting.

AspenTech Inmation facilitates full integration of all of Philips' manufacturing equipment for shaver head production. The historian provides the highest performance and throughput capabilities to enable in-and-out of process analytics of high-volume discrete manufacturing data (involving sub-second and even sub-millisecond sensor data).

AspenTech Inmation securely streams real-time data from hundreds of connected interfaces into a centrally managed cluster. Endpoints provide pre-cleaned and contextualized data to various analytics and visualization tools empowering many value-added use cases, such as predictive maintenance, asset effectiveness, reliability center and augmented reality.

About AspenTech

Aspen Technology, now part of Emerson, is a global software leader helping industries at the forefront of the world's dual challenge meet the increasing demand for resources from a rapidly growing population in a profitable and sustainable manner. AspenTech solutions address complex environments where it is critical to optimize the asset design, operation and maintenance lifecycle. Through our unique combination of deep domain expertise and innovation, customers in asset-intensive industries can run their assets safer, greener, longer and faster to improve their operational excellence.

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