



# Solumina AI

## The AI Authority for A&D Manufacturing & Sustainment

Overview

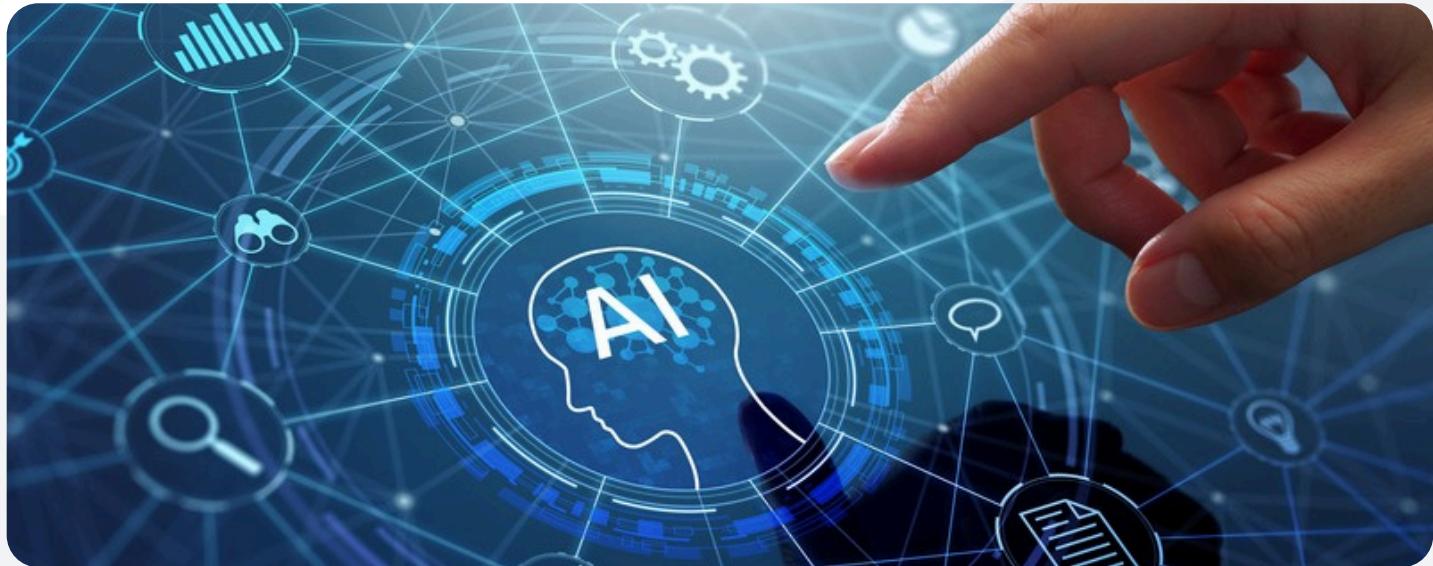


# Solumina AI

## The authority for AI-driven shop-floor execution in Aerospace & Defense — embedded in Solumina for compliant, high-confidence outcomes.

Solumina AI by iBase-t is the only domain-specific AI platform designed exclusively for Aerospace & Defense (A&D) manufacturers. It extends the power of the Solumina Manufacturing Operations Platform with embedded artificial intelligence to help users retrieve knowledge, analyze operational data, and generate actionable insights — all within the context of regulated manufacturing and sustainment.

Unlike generic AI tools, Solumina AI is deeply embedded in the Solumina operational ecosystem, leveraging high-fidelity manufacturing, quality, and maintenance data to deliver accurate, contextual, and trustworthy results across the shop floor and the enterprise. Leveraging Solumina AI, customers can drive improved first-time quality, reduced operational and compliance risk, and higher overall productivity.



## Built Specifically for Aerospace & Defense

Solumina AI is not a general-purpose AI layered onto manufacturing — it is engineered for the realities of A&D operations. The platform supports industry-specific security, compliance, and traceability requirements, including:

- ITAR- and NIST-aligned security frameworks
- Role-based access control tied to Solumina user permissions
- Full auditability of data, actions, and AI outputs
- Support for regulated manufacturing, quality, and MRO workflows

By design, Solumina AI understands A&D manufacturing structures — work orders, operations, discrepancies, effectivities, certifications, and compliance artifacts — making its outputs immediately usable and trustworthy.



## Powered by Solumina Operational Context

AI is only as valuable as the data behind it. Solumina AI's key differentiator is its ability to leverage Solumina's rich operational context, including:

- A purpose-built A&D data model
- Real-time and historical MES and MRO data
- Engineering, quality, and supplier context
- User roles, permissions, and effectivities

This contextual foundation enables Solumina AI to deliver accurate, relevant, and actionable insights, whether answering a technician's question, summarizing shop floor performance, identifying operational risks, or digitizing unstructured documents.

## Secure, Embedded AI Architecture

Every Solumina AI deployment includes an embedded Large Language Model (LLM) that operates securely within the customer's environment. This self-contained architecture allows Solumina AI to function without reliance on external AI services, supporting air-gapped and restricted networks while meeting stringent A&D security and compliance requirements.

Key architectural characteristics include:

- Embedded LLM per deployment – No dependency on public AI services
- Self-hosted or customer-controlled environments (cloud or on-prem)
- Model optionality to align with privacy, security, and performance needs
- Vector databases and AI orchestration optimized for manufacturing use cases
- REST API-based integration with Solumina iSeries (i120.2+)

This design ensures that sensitive manufacturing data remains protected, governed, and auditable, while still enabling modern AI capabilities at scale.



## One Platform. Multiple AI Solutions.

Solumina AI is a unified platform that powers a growing family of AI modules.



### Solumina ScanAI

AI-driven digitization of paper-based documents



### Solumina Digital SME

Knowledge retrieval and guided execution



### Solumina Intelligence

On-demand operational insights and analytics



### Solumina PulseAI

Drillable dashboards and summary reporting

Together, these solutions improve productivity, preserve institutional knowledge, reduce risk, and accelerate decision-making across the enterprise – transforming how work gets done in Aerospace & Defense manufacturing.



# Solumina ScanAI

## Intelligent Document Digitization for Aerospace & Defense Manufacturing

Aerospace and defense manufacturers are under growing pressure to eliminate inefficiencies, maintain compliance, and unlock real-time visibility. Yet many organizations still rely on paper-based documentation, slowing their operations and exposing them to risk.

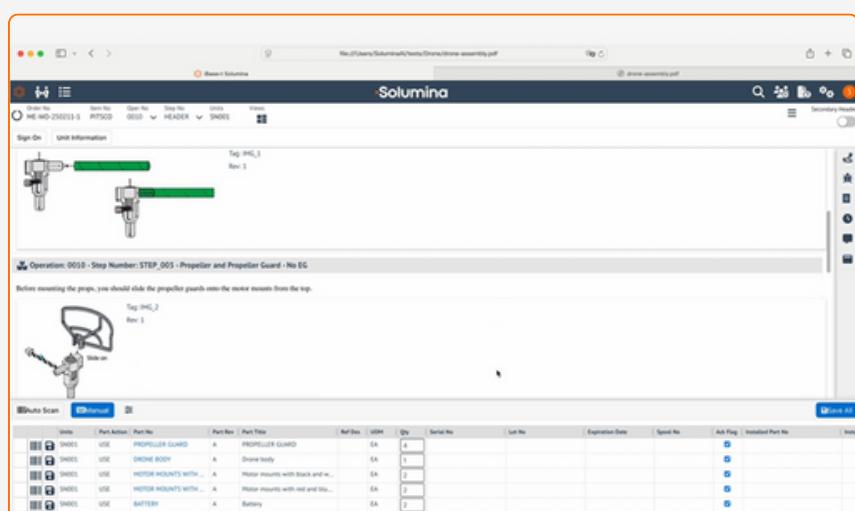
Solumina ScanAI, powered by Solumina AI, is an intelligent digitization solution that converts static, paper-based records including work instructions, process plans, and more into structured digital data – seamlessly integrating into Solumina manufacturing and sustainment workflows. By bridging the gap between legacy documentation and modern digital operations, ScanAI helps teams move faster, smarter, and more compliantly.

## Why Solumina ScanAI?

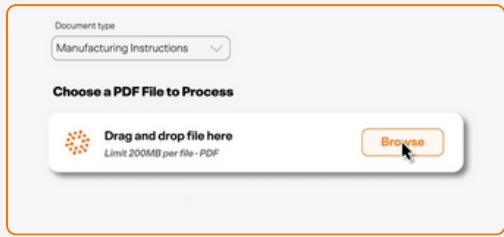
- Replace costly, cumbersome paper records with compliant digital data
- Minimize human error and ensure data integrity and consistency across records
- Save time & labor by automating data entry with AI-powered document scanning
- Make previously static documents searchable, structured, and actionable



1 Start with a static document like this PDF of work instructions.



3 ScanAI scans the document for key data, pushes it into Solumina, and integrates the work instructions into Solumina's manufacturing workflows.



2 Use ScanAI to select the PDF from your files – or simply drag and drop into ScanAI.



## Key Features

### 01 AI-Driven Document Digitization

Leverages intelligent, AI-driven scanning and parsing to extract data from paper-based work instructions, manuals, SOPs, process plans, and more with high accuracy.

### 02 Structured Data Extraction

Pushes captured data directly into Solumina via native integration endpoints, ensuring it becomes part of the Solumina manufacturing record.

### 03 Seamless Workflow Integration

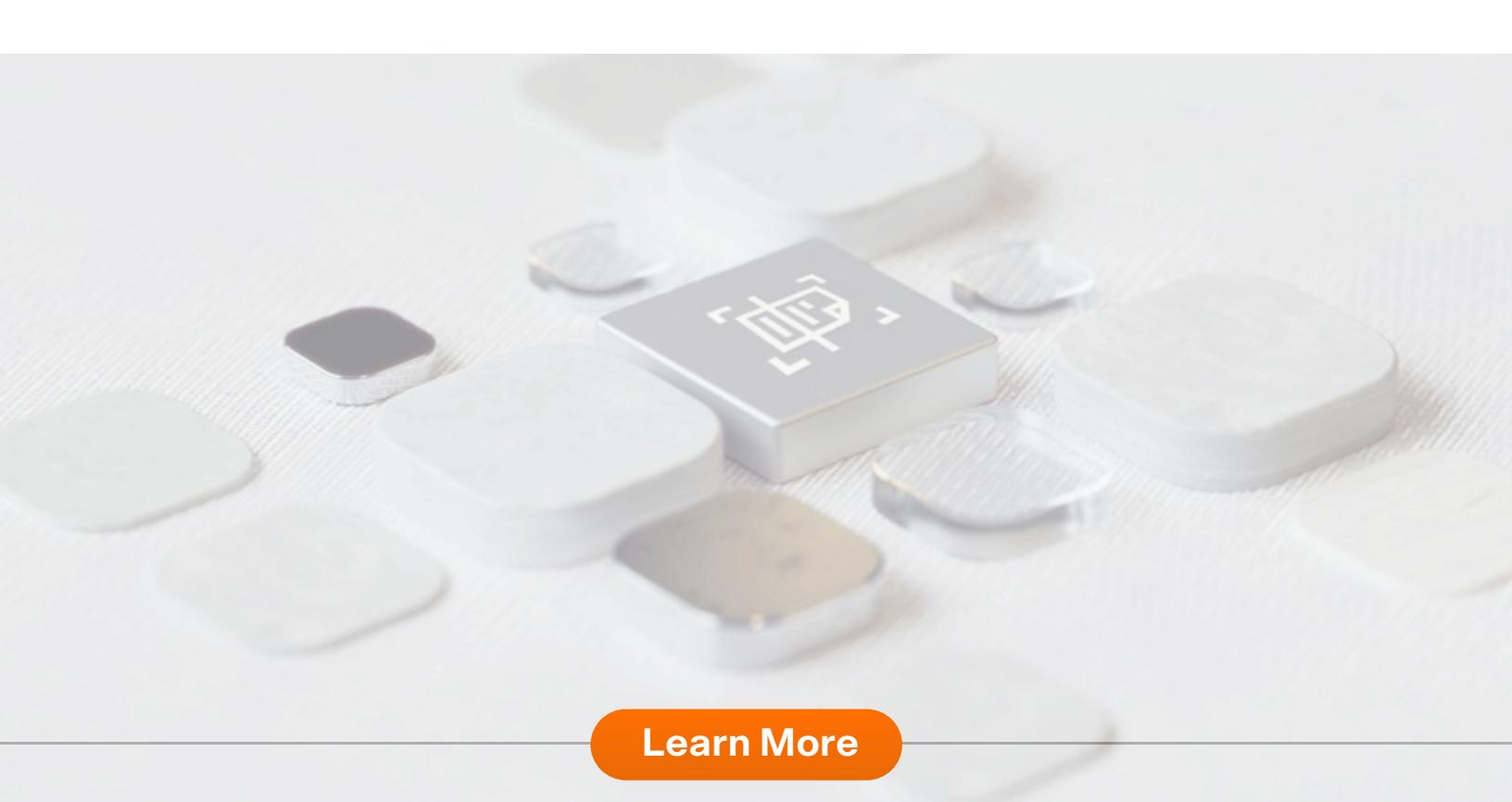
Data captured from the documents is embedded into Solumina's MES or MRO workflows, enabling users to instantly start leveraging the data while maintaining digital continuity.

### 04 Compliance-Ready Conversion

Eliminates manual data gaps and audit blind spots by converting critical records into traceable, validated digital inputs.

### 05 Scalable Across Document Types

Supports diverse documentation formats, including scanned PDFs, forms, and printed records—enhancing flexibility and reach.



[Learn More](#)

Solumina ScanAI is part of the Solumina AI platform and is included in Enterprise Solumina AI packages. Contact your iBase-t representative to learn more or request a demo.



# Solumina Digital SME

## Empowering Teams with Instant Contextual Guidance

In today's fast-paced A&D manufacturing environments, minimizing human error, speeding up training, and preserving institutional knowledge are critical – especially as seasoned workers retire. Solumina Digital SME, an AI-enabled assistant, tackles these challenges by helping users quickly access Solumina knowledge, navigate processes accurately, and work more efficiently.

Whether onboarding, troubleshooting, or executing complex tasks in Solumina, users and admins can simply ask questions via Digital SME's intuitive chat interface. It instantly taps into the iBase-t Knowledge Center to provide context-aware guidance and step-by-step instructions.

## Why Solumina Digital SME?

- Retrieve and apply institutional knowledge in real time
- Accelerate decision-making with contextual process guidance
- Reduce onboarding and upskilling time for new users
- Minimize reliance on siloed knowledge and mitigate workforce turnover risks
- Improve task efficiency and execution accuracy with guided workflows

**Welcome to Solumina Digital SME**

Ask a question ➤

Here are some example questions to get you started.

What is a BOM?

How do you create a discrepancy?

How can I create a manufacturing process plan?

How can I add a crew to an operation?

How do I add a procedure?

How do you create a discrepancy?

To create a discrepancy in Solumina, follow these steps:

1. Open the relevant dispatch, such as Quality Assurance > Discrepancy Records - In Process.
2. Click on the "Create New Discrepancy" button at the top of the page. This will launch the "Create New Discrepancy" window.
3. In the "Create New Discrepancy" window, select the appropriate Discrepancy Type and Workflow for your discrepancy, and then click Ok.
4. The "Update Discrepancy Item Description" window will appear. Fill in the required fields such as the discrepancy description, actual condition, affected quantity, etc.
5. After entering the required information, click Ok. This will create the discrepancy record and discrepancy item.
6. If needed, you can add additional details to the discrepancy item, such as serial numbers, lot numbers, comments, etc.
7. Once the discrepancy is created, it will go through various stages such as dispositioning, implementing corrective actions, and closing the discrepancy.

Note: The exact steps and fields may vary slightly depending on your specific Solumina configuration and the type of discrepancy you are creating.

[Citations \(3\)](#) [Feedback](#)

**In Action:** A shopfloor technician asks, "*How do you create a discrepancy?*" and Digital SME instantly responds with context-specific steps pulled directly from Solumina best practices.

## Key Features

### 01 Instant Knowledge Retrieval

No more combing through static documents. Query Solumina using natural language and retrieve precise answers immediately.

### 02 Step-by-Step Workflow Guidance

Help operators navigate complex manufacturing workflows with contextual assistance that reinforces correct procedures and reduces execution errors.

### 03 Streamline Onboarding

Help new Solumina users onboard faster and learn best practices from day one. Digital SME offers tips, shortcuts, and recommendations to support rapid skill acquisition.

### 04 Cross-Functional, Scalable Learning Platform

Unlike traditional training programs, Digital SME scales instantly – training multiple users simultaneously and preserving high-value institutional knowledge.



Learn More

Solumina Digital SME is part of the Solumina AI platform and is included in Essential, Pro and Enterprise Solumina AI packages. Contact your iBase-t representative to learn more or request a demo.



# Solumina Intelligence

## Empowering Leaders with Real-Time Operational Insight

Aerospace & Defense manufacturers operate in some of the most complex, compliance-driven, and high-stakes production environments on the planet. Supervisors, plant managers, and executives need timely, trustworthy insight to solve problems quickly and keep production moving – yet operational data is often locked behind complex tools and reporting cycles.

Solumina Intelligence, powered by Solumina AI, is a smart analyst designed to watch shop floor data and trends, delivering actionable insights on demand so leaders can act with confidence and precision. Leveraging the real-time and historical manufacturing data in your Solumina database, it offers instant, reliable analysis at the click of a button.



## Why Solumina Intelligence?

- Access Insights Immediately:** Simply select one of the provided prompts to receive pre-validated analytics – no custom query building or technical skills needed.
- Improve Decision-Making:** Gain on-demand visibility into work order progress, delays, quality signals, and operational risk patterns.
- Ensure Accuracy and Reliability:** All prompts are designed to ensure consistent, trustworthy results based on Solumina's contextualized operational data.
- Democratize Shop-Floor Analytics:** Enable leaders to quickly access insights previously limited to analysts or power users.
- A&D-Grade Intelligence by Design:** Governed, role-based access-controlled operational insights aligned with ITAR/NIST expectations—providing trusted manufacturing intelligence without exposing sensitive data to uncontrolled analytics or consumer-grade AI tools.

The screenshot shows a mobile-style interface for Solumina Intelligence. At the top, there's a 'Chat' section with a 'Start New Conversation' button. Below it, a message from the AI says: 'Identify work orders scheduled for completion this week that are still outstanding'. The AI then responds with: 'Here are the results:' followed by a table of data. The table has columns for 'orderNo', 'orderStatus', and 'schedEndDate'. The data shows three rows of work orders, all marked as 'ACTIVE' and scheduled for completion on the same date (1767772800000). At the bottom of the table is a 'Export CSV' button.

orderNo	orderStatus	schedEndDate
RD-TOOLTEST-03	ACTIVE	1767772800000
RD-TOOLTEST-04	ACTIVE	1767772800000
RD-TOOLTEST-02	ACTIVE	1767772800000

**In Action: A supervisor asks for data on outstanding work orders; Solumina Intelligence responds immediately with a table containing the requested information.**

## Key Features

### 01 Curated, Pre-Tested Operational Prompts

Solumina Intelligence provides a streamlined interface where users can select from a set of high-impact queries covering throughput, schedule adherence, quality, and operational risk. Initial supported prompts include:

- List all work orders completed this week
- Identify work orders scheduled for completion this week that are still outstanding
- List all operations that are past their scheduled completion date
- Show me all discrepancies reported today
- Show me all operation and order holds created today

### 02 Consistent, Reliable Analytics

Because each prompt is pre-validated, users can trust that the insights are accurate, complete, and aligned with Solumina schema and business logic.

### 03 At-a-glance Data Views

Responses are delivered in clear data tables for easy scannability.

### 03 Built for Security and Compliance

Insights are generated using your Solumina database, respecting user roles, permissions, and A&D-grade security requirements.

\*Available Immediately. Further features are scheduled for development.

## Phase 2:

## Free-Form Natural Language Prompting

Solumina Intelligence is designed to evolve. Targeted enhancements include ability to:

- Ask any operational question in plain language
- Explore data iteratively with conversational follow-ups
- Generate drill-down analyses without predefined prompts

These enhancements leverage the same secure, contextual AI foundation already present in the Solumina AI Platform.

[Learn More](#)

Solumina Intelligence is part of the Solumina AI platform and is included in Pro and Enterprise Solumina AI packages. Contact your iBase-t representative to learn more or request a demo.



# Solumina PulseAI

## AI-Assisted Shopfloor Visibility for Faster, More Informed Decisions

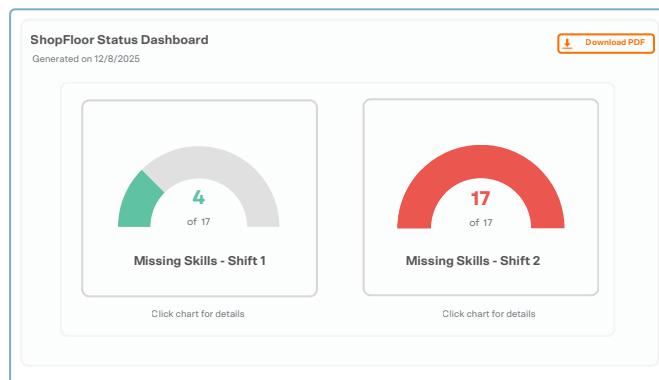
Modern aerospace and defense manufacturing moves fast — and understanding shopfloor readiness shouldn't require manual analysis or navigating multiple screens. Solumina PulseAI provides a centralized, AI-assisted dashboard that gives supervisors and operations leaders immediate visibility into the status of work, skills, and certifications required to keep production moving.

Embedded within the Solumina ecosystem, PulseAI delivers a Shopfloor Status Dashboard that highlights active and queued work orders, identifies gaps in skills and certifications by shift, and enables users to drill into actionable details — all within a secure, governed environment.



## Why Solumina PulseAI?

- Immediate Shopfloor Awareness:** Quickly understand the current state of work orders, workforce readiness, and potential constraints without manual reporting or data consolidation.
- Operational Readiness at a Glance:** Surface missing skills and certifications that could delay execution — before they impact throughput.
- Actionable Drill-Downs:** Move from high-level visibility to specific detail through guided dashboard exploration.
- Secure & Compliant by Design:** Built on Solumina's enterprise-grade data governance, permissions, and aerospace & defense security requirements.



**Missing Skills Details- Shift 1**

Missing Skills	Users Having Skill
abc22	
AP_SKILL_CATG_2	PREYAS3, RAMYA_123
AS-SKILL1	
SKILL_4	ANJALI

[Export CSV](#)

**In Action:** A production supervisor sees several active work orders flagged for missing required skills. By drilling into the skill gap, the supervisor immediately identifies unassigned technicians with the necessary qualifications and assigns them — preventing delays before work begins.

## Key Features

### 01 Shopfloor Status Dashboard

A centralized dashboard provides visibility into current production execution and workforce readiness.

### 02 Work Order Visibility

Understand what is currently in progress and what is coming next with at-a-glance visibility of Active Work Orders and Work Orders in Queue.

### 03 Skill Coverage Analysis by Shift

Identify missing skills required to execute active or queued work orders, identifying skill-gaps in the assigned technicians. Drill down to view unassigned technicians who do have the required skills, enabling informed assignment decisions.

### 04 Certification Coverage Analysis

Identify missing certifications required to complete work orders, highlighting potential compliance or execution risks. Drill down to view unassigned technicians who hold the required certifications.

\*Available Immediately. Further features are scheduled for development.

## Phase 2: Free-Form Natural Language Prompting

Targeted enhancements include:

- Automated, scheduled report delivery
- Free-form natural-language prompting
- Conversational follow-up questions

These enhancements leverage the same secure, contextual AI foundation already present in the Solumina AI Platform.

[Learn More](#)

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# Solumina Manufacturing Operations Platform

To learn more or book a demo visit [www.iBaset.com](http://www.iBaset.com)

The Solumina Manufacturing Operations Platform by iBase-t consists of an integrated suite of MES, SQM, and MRO solutions. Designed for complex, highly regulated discrete manufacturers who seek to digitally transform their operations, Solumina connects manufacturing operations, quality, and sustainment management in a seamless flow of data across the value chain and product lifecycle.

The Solumina Manufacturing Operations Platform creates the technology infrastructure manufacturers need to harness advances in model-based functionality like augmented reality guidance for the workforce, IIoT connectivity for equipment, new levels of intelligence for decision making, and higher levels of customer and supply chain collaboration.