

Presenters Bio

Global Product Data Interoperability Summit | 2023

- **Sean Riley is Vice President, Industry Solutions and Head of the global COE for Value Engineering at Software AG. He has over ten years of experience in the supply chain, logistics & manufacturing fields as well as an additional decade as a technology solutions provider to those industries. In addition to his work experience, he holds a BA in Business Administration from Hanover College, an MBA with Distinction in Managerial Finance from DePaul University and is a certified Six Sigma Greenbelt**
- **Joe is responsible for managing and executing complex research and development projects among both industry and academic partners. Prior to joining MxD in November 2021, Joe worked for 7 years in the electronics manufacturing industry, supporting products which control the frequency or timing of electronic signals in mission critical systems. Joe's experience includes manufacturing engineering, project management and quality management. Joe received a bachelors degree in Electrical Engineering from the University of Central Florida. In his free time, you can find Joe enjoying live music, playing sports, camping or any other excuse to be outdoors**

Lower risk, create
new insights, and
drive down costs
with Data
Integration

Sean Riley
Joe Nichols

GLOBAL PRODUCT DATA INTEROPERABILITY SUMMIT 2023



30

Year Product Lifecycles

<5

**Year Component
lifecycles**

47%

**reported a supply chain
disruption in 2022**

Challenges

Global Product Data Interoperability Summit | 2023

Onboarding new suppliers efficiently

Increasing supply chain complexity & uncertainty from new suppliers / component origins

Obtaining & certifying supplier / component quality

Required OT data from suppliers and plant floor

Establish a Digital thread that spans the manufacturing value chain from Sales to supply chain

Typical Actions

Global Product Data Interoperability Summit | 2023

Identify alternative suppliers for the component needed



Requires new suppliers to be onboarded

Identify alternative or redesign components



Increases sub-tier supply chain disruption likelihood

Increase additive manufacturing capabilities & Automation Usage



More data to integrate, audit & optimize across the ecosystem

Required Capabilities

Global Product Data Interoperability Summit | 2023

**Full Data Accessibility
& Transparency
(Supply Chain, IT & OT)**



End-to End visibility & Auditability



**Exception Identification
& Mitigation**



**Machines Are
Connected & Smart**

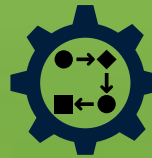


**Rapid, Flexible Supplier
Onboarding**

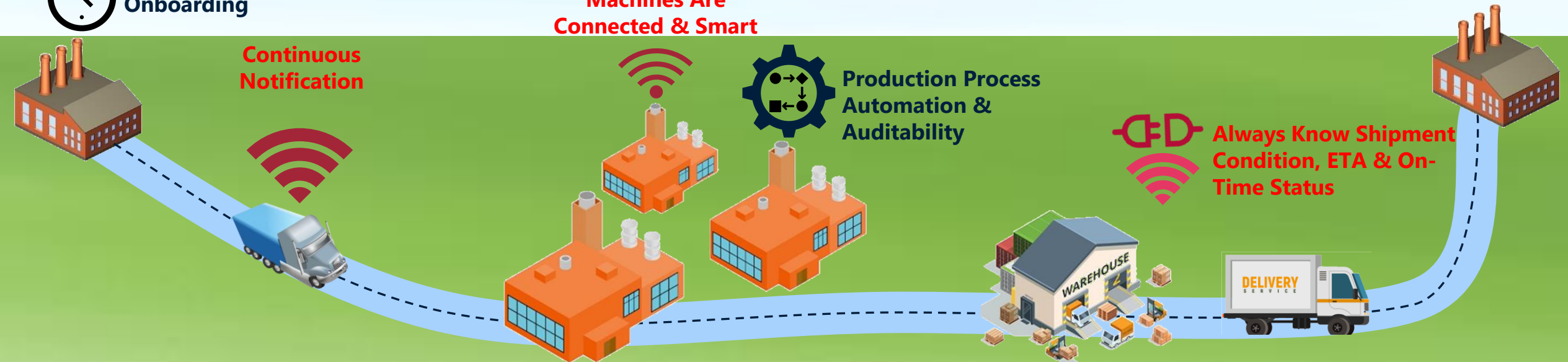
**Continuous
Notification**



**Production Process
Automation &
Auditability**



**Always Know Shipment
Condition, ETA & On-
Time Status**



WHO IS MxD?

Global Product Data Interoperability Summit | 2023

About MxD

MxD (Manufacturing x Digital) is where innovative manufacturers go to forge their futures. In partnership with the Department of Defense, MxD equips U.S. factories with the digital tools, cybersecurity, and workforce expertise they need to begin building every part better than the last. As a result, our more than 300 partners increase their productivity, win more business, better equip the nation's warfighters, and strengthen U.S. manufacturing.

- MxD has invested more than \$184 million in more than 160 projects in areas including future factory, digital twin, resilient supply chains, operational technology cybersecurity, and workforce development.
- We are the DoD's National Center for Cybersecurity in Manufacturing. Our innovation center near downtown Chicago features some of the most advanced manufacturing equipment in the world, which partners can use for experimentation and training on everything from augmented reality to advanced simulation techniques.

MxD Mission

To increase U.S. manufacturing's global competitiveness by accelerating broad adoption of digital solutions through providing coaching, resources, and workforce development while increasing national awareness of opportunities to strengthen U.S. manufacturing.

MxD Quick Facts

Global Product Data Interoperability Summit | 2023



- Launched February 2014 with initial \$70M in DoD funding
- Awarded \$10M in 2019 as part of renewed contract with DoD for up to \$60M over five years
- Awarded \$15M in 2020 via the CARES Act for projects that shore up U.S. manufacturing in the face of COVID-19
- Secured \$8.5M in funding from the U.S. Department of Defense for 5G for manufacturing and cybersecurity for arsenal supply chains
- MxD Awarded \$6.25M to Support Development of Medical Goods Marketplace and Public Health Demand Modeling by U.S. Department of Commerce
- 300+ members, anchored by DoD and 20 global manufacturing and technology leaders
- 160+ projects apply technologies to real world applications
- MxD Innovation Center features a 22K-sf manufacturing floor
- 10,000+ in-person and virtual visits annually

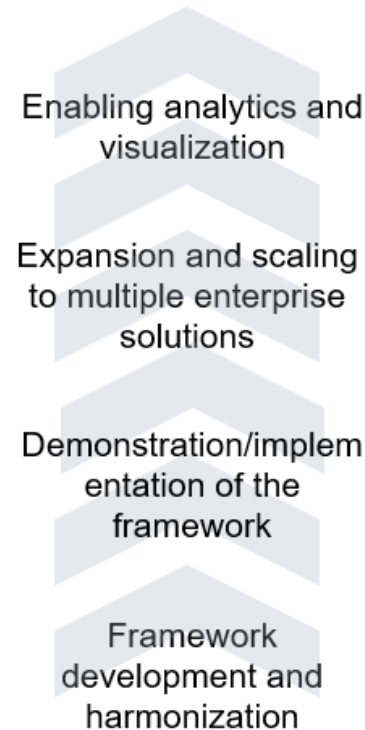
MxD Roadmap

Global Product Data Interoperability Summit | 2023

Digital Enablement



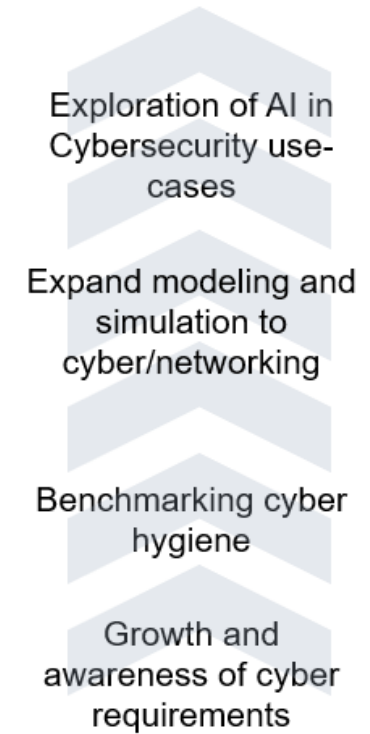
Building Digital Thread



Supply Chain



Cybersecurity



Technical Data as a Service

- Software AG Government Solutions
- viax.io
- Boeing
- Period of Performance: AUG 2023 – AUG 2024



SIMPLIFY

Deliver a world-class TDP experience for all customers in a secure and personalized way



UNIFY

Provide a single source of the truth and enforce standards leveraging an industry-leading integration framework



AMPLIFY

Increase source systems, expand reach or add new capabilities. This platform is built to scale

Technical Data Packages (TDPs) Enabling the Digital Thread

Global Product Data Interoperability Summit | 2023

What's the value?

- A TDP serves as the single source of data throughout the product life cycle, from engineering to manufacturing, across the supply chain, and out through sustainment.
- In its basic definition, a TDP is a set of electronic files describing a particular product or component.
- An effective flow of technical information is imperative for businesses undergoing a digital transformation, and TDPs are playing a pivotal role in how to best connect stakeholders with essential product data.
- TDPs packages all types data (CAD models, drawings, schematics, quality data, BOMs, etc.)
- TDPs are easy to consume and doesn't require complex tools.
- Use of TDPs breaks down silos and improves technical communication to limit scrap, rework, and delivery risk.
- TDPs act as a contractual artifact and governs the intellectual property shared so information you don't want to get out doesn't get out.

Technical Data Packages (TDPs) Enabling the Digital Thread

Global Product Data Interoperability Summit | 2023

What's the problem?

- Incorporating TDPs is a step towards meaningful connectivity to the digital thread; however, the execution of connecting everyone across the enterprise to the full array of technical data is cumbersome at best.
- There are significant gaps in consolidating and harmonizing the TDP element for various life cycle activities.
- Incorrect or incomplete technical information is provided to sustainment networks and suppliers during inquiry-to-order (ITO) and order-to-remittance (OTR) processes, increasing risk of scrap, rework, and supplier bid inflation.
- Technical iteration between OEMs and program offices, and program offices and sustainment networks are prone to errors and cost overruns, creating program and sustainment risk
- Program design data can include a wide variety of legacy and modern technical data formats. Numerous challenges exist for suppliers when they try to work with program design data.
- Many SMM organizations have limited IT resources and tend to depend more heavily on Cloud/SaaS apps for important aspects of their businesses. Complex IT application infrastructure prerequisites create an impediment to value.

Technical Data Packages (TDPs) Enabling the Digital Thread

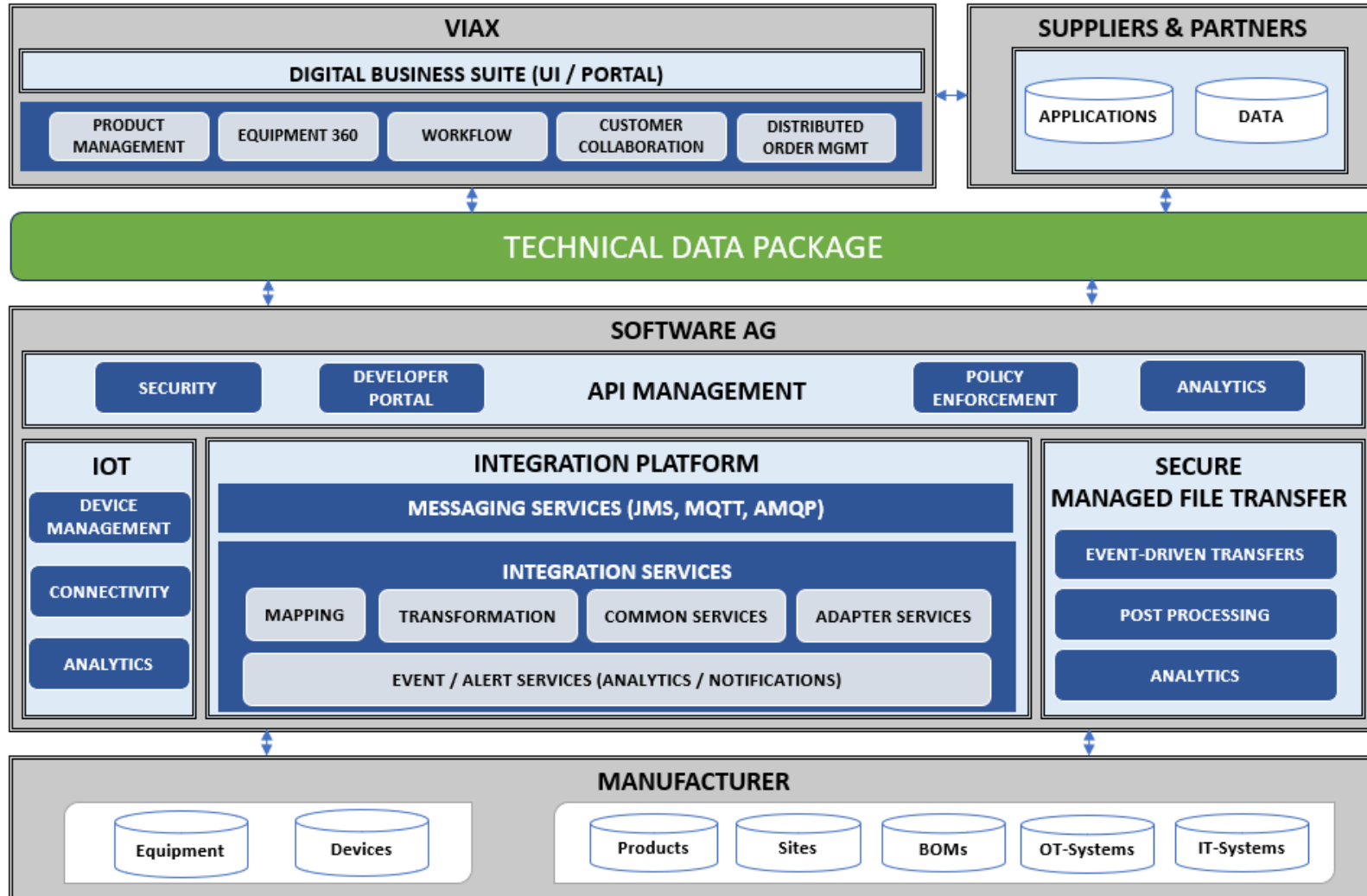
Global Product Data Interoperability Summit | 2023

Project Objectives.

- This project continues and expands upon the existing Software AG integration platform and via Digital Business Suite for TDP collection, storage, management and access.
- Map and integrate multiple source systems while presenting a single unified view of data.
- Automate TDP generation for supply chain, manufacturing, and field service.
- Secure your IP with digital rights management, including access control and audit logs.
- Demonstrate bi-directional enrichment of data through event-based architecture to make collaboration accessible and easy.
- Ability to query without affecting the performance of underlying systems.
- Track collaboration history to drive continuous improvements
- Implementation at a pilot manufacturer to validate the creation, management, and access of technical data packages for downstream usage scopes.

Solution Architecture – Technical Data as a Service (TDaaS)

Global Product Data Interoperability Summit | 2023



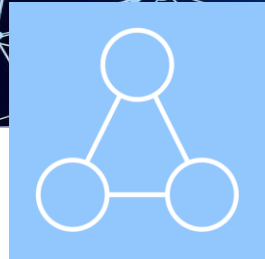
WE HELP ORGANIZATIONS...

CONNECT



FREEDOM

We help you free data from silos so it's shareable, usable and powerful – enabling you to make the best decisions and unlock entirely new possibilities.



TECHNOLOGY

Providing best-in-class IoT and API & Integration Platforms that allows you to securely and seamlessly connect and integrate apps, IoT, multi-clouds, and data.



LEADERSHIP

With decades of success and \$1B+ in revenue, we are profitable and growing. We are recognized by analysts as a leader in 15 technology categories.



EXPERIENCE

Trusted by 10k+ customers across 70 countries, team of cleared individuals serves our 150+ federal, aerospace and defense customers from the Capital region in Herndon, VA.

