TRANSFORM YOUR ENTERPRISE WITH THE INTELLIGENT PRODUCT LIFECYCLE

PTC Keynote

KEVIN WRENN

EVP, Products

ptc

WHAT WE ARE HEARING FROM YOUR PEERS

Increasingly complex SW + HW innovations
to support connected home diagnostics and digital health apps innovations

Extensive compliance documentation
with EU MDR compliance retrofitting and evolving FDA guidelines

AI Everywhere
to scale knowledge, drive efficiency, and automation within regulatory guidelines

Longer device life cycles
increasing complaint management

Greater cost pressure
across value chain and global competitors while maintaining quality standards

Cybersecurity vulnerabilities
targeting patient data as devices become more connected

Industry players are responding to the pressure while optimizing for speed and cost by asking us,

How do we build a scalable product lifecycle?

CHALLENGES IN A RAPIDLY EVOLVING LANDSCAPE

Regulatory Complexity and Quality

Since 2020, MedTech regulations have doubled, making compliance a strategic necessity with stricter FDA, EU MDR, and cybersecurity requirements.

Cost and Margin Pressure

Rising costs and margin pressure due to higher R&D expenses, stricter regulations, supply chain issues, and pricing constraints.

Pressure to Innovate

Relentless pressure to innovate from rising patient demands, rapid technological advancements, and intense market competition.

Speed / Time-to-market

Pressure to bring devices to market faster, with shorter release cycles, driven by evolving technologies, rising patient expectations, and intense competition.

PRODUCT DATA ACCESS IS CRITICAL TO BUSINESS SUCCESS

Executives of Manufacturing companies believe ***improving product data access across the product lifecycle*** impacts their top business priorities.

Reducing Costs

Differentiating Products

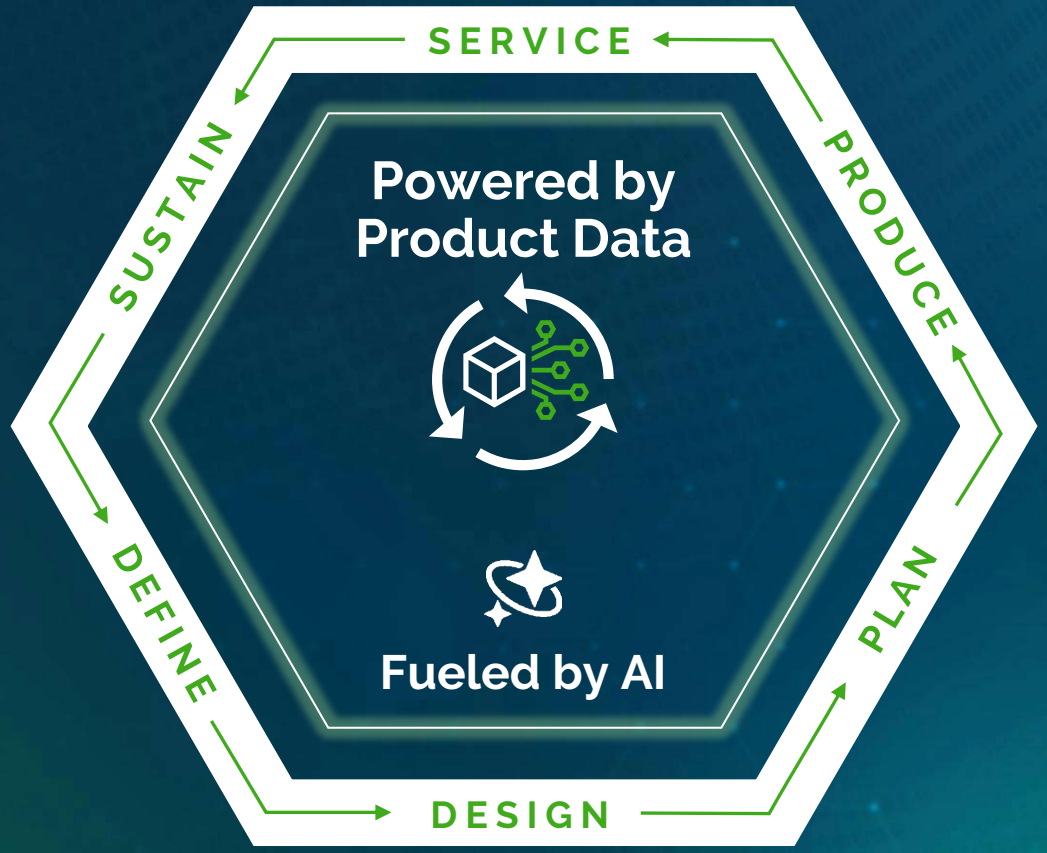
Increasing Sales

Reducing Time to Market

Source: IDC

TRANSFORMING THE ENTERPRISE WITH THE INTELLIGENT PRODUCT LIFECYCLE

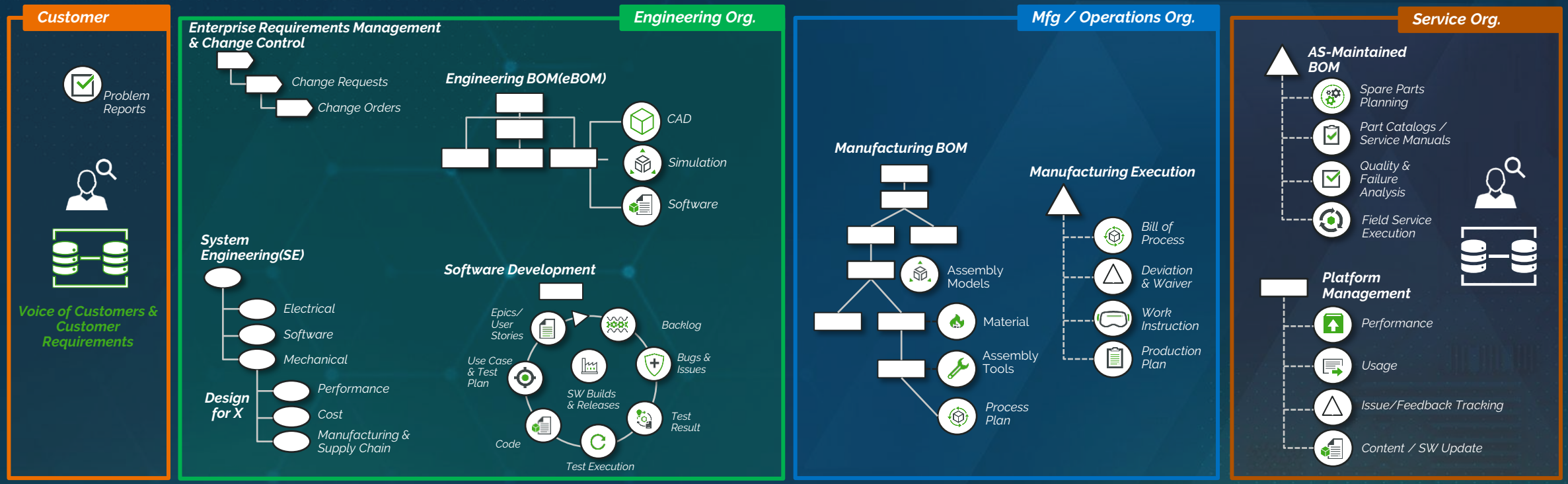
Connected
through Openness



Accelerated
by SaaS

DATA FOUNDATION AND PROCESS ORCHESTRATION

What happens to Product and Process data when a change needs to be made?



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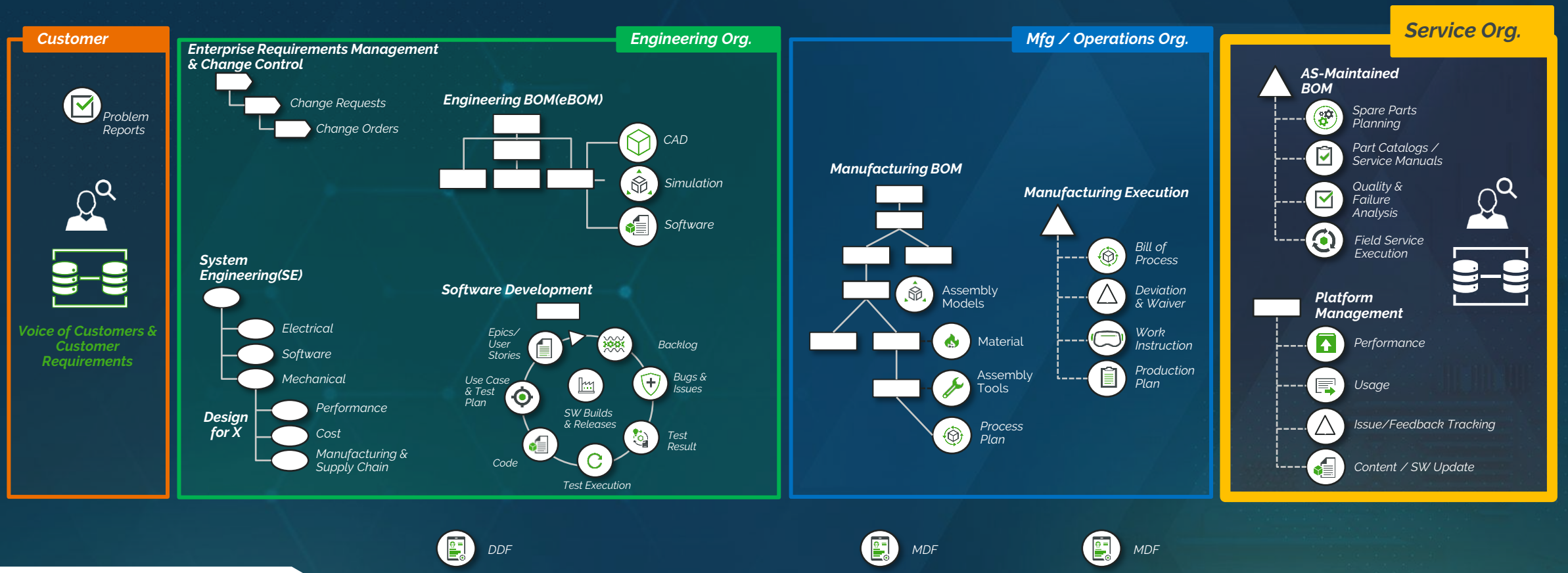
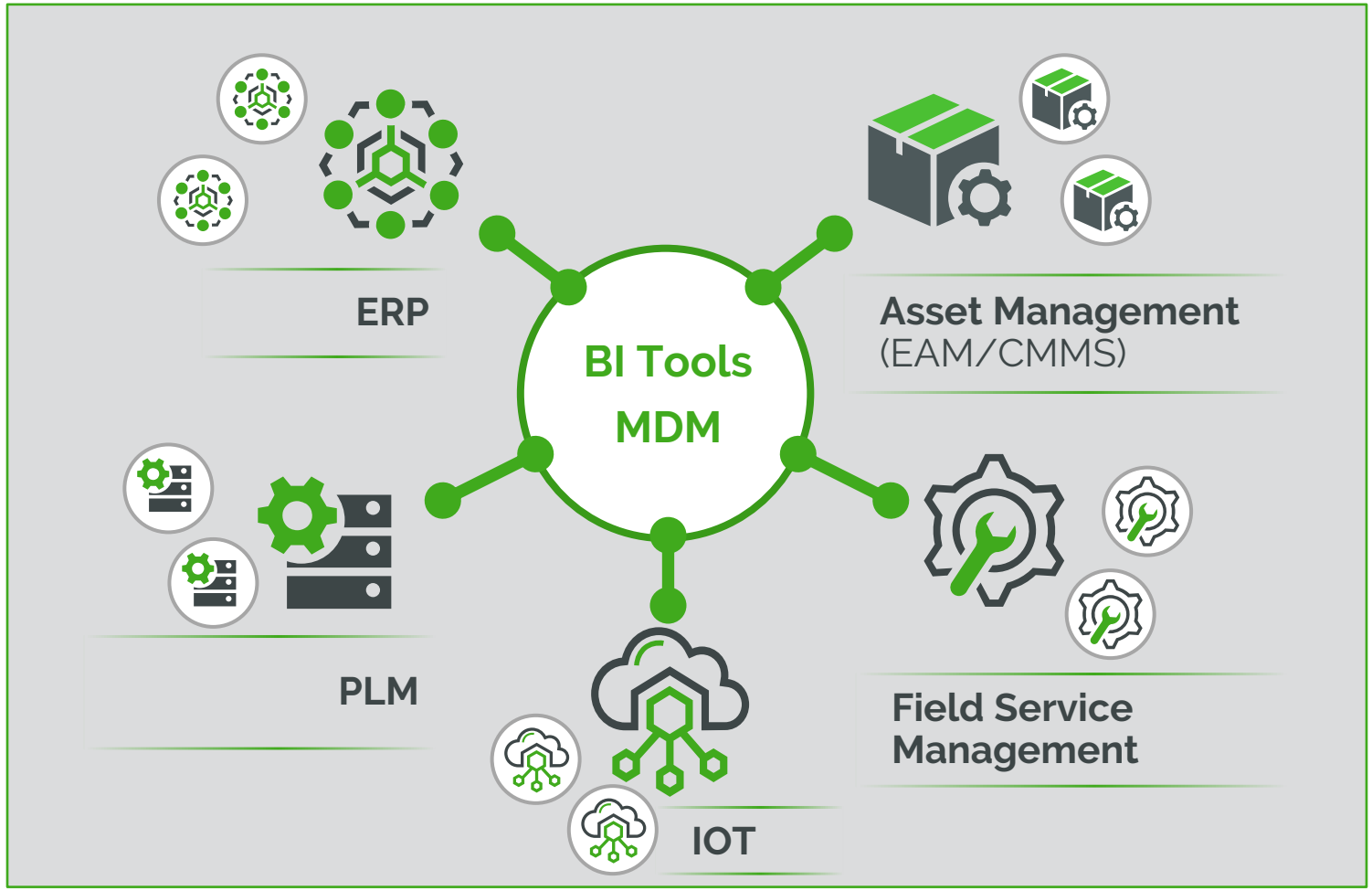


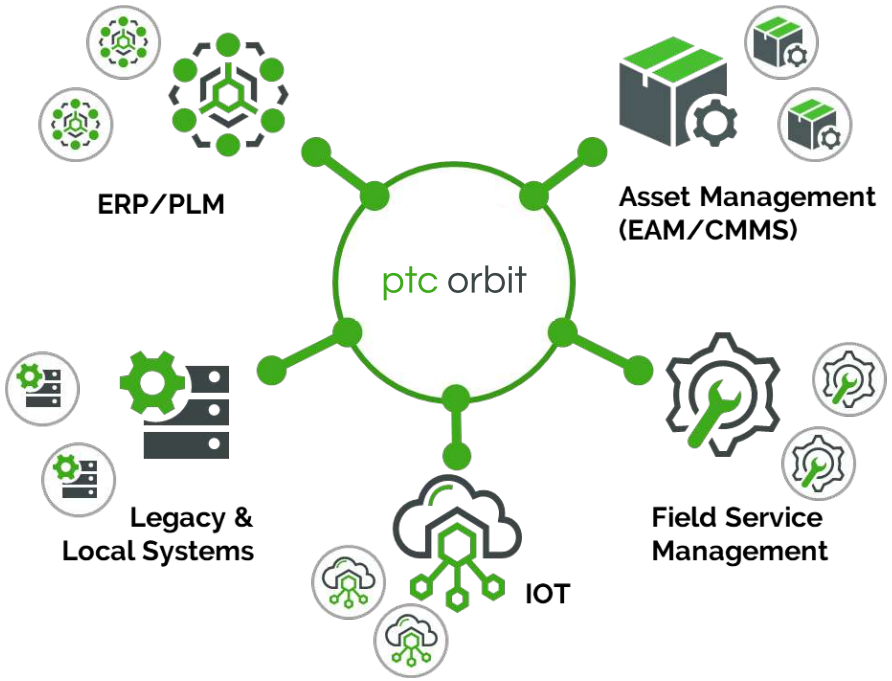
IDEAL STATE: CONNECTING DATA ACROSS THE PRODUCT LIFECYCLE

- ✓ Understand product design to inform maintenance planning
- ✓ Extend product engineering details for manufacturing and service performance
- ✓ Close the loop on asset performance for reliability and design review



WHAT DOES PTC ORBIT DO?

Data Sources



Asset Information

Engineering Information

Bill of Materials, Work Instructions, Technical Specifications and Documentation, Product Bulletins

Service & Customer Information

Work Orders, Asset Hierarchy, Service Activities, "As-Maintained" Configuration, Warranty and Entitlement, Maintenance Plans, Installation Date, Asset Location

Sales & Manufacturing Information

Account Ownership, "As-Shipped" Configuration, Serial Number, Shipment Date, Pricing and Cost

In-Field Equipment Data

Equipment status, Sensor/Machine Data, Performance, Location

Applications and Insights

- **SBOM & Parts Traceability**
- **Sales and Marketing Campaigns**
- **Design & Quality Engineering**
- **Predictive Maintenance**
- **Demand & Capacity Planning**
- **Asset Health Scoring**
- **Digital Product Passport and Asset Administration Shell**

1 Ingest and map asset data

from multiple data sources and systems.

2 Validate and cleanse data

using built-in tools for updates, corrections, and de-duplication.

3 Surface actionable insights

and foster collaboration with a unified asset profile.

QMSR is the FDA's new Quality Management System Regulation, effective February 2026, that harmonizes U.S. medical device quality requirements with ISO 13485 and increases the importance of digital traceability across the product lifecycle. "QMSR raises the bar on traceability, making connected requirements, risk, verification, and product data a regulatory necessity rather than a process optimization."

If digital engineering is the vision…

…Integrated Product Engineering is the operational model that makes it work

Creating the product data backbone

Connecting processes across domains

Aligning people, process, and data so decisions are visible and connected

Stakeholder needs → Requirements → Design → Verification → Validation

Risk

codebeamer®

codebeamer®

Concept of Operations

System Level Requirements

Subsystem Requirements

System Functions

System Architecture (HLD)

Component Level Design (Detailed)

Unit Level Testing

Subsystem Integration & Verification

System Integration & Verification

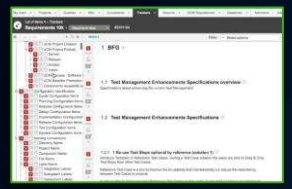
System Validation

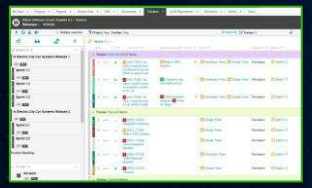
Product Line Engineering (PLE)

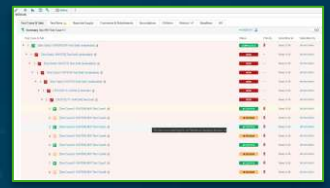
AI-powered

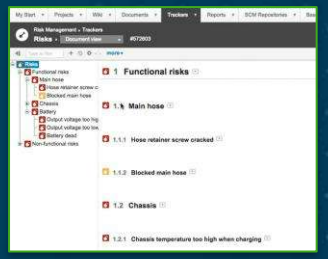
Product Line Engineering (PLE)

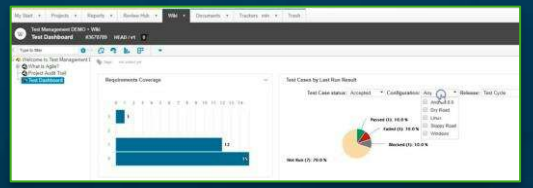
AI-powered











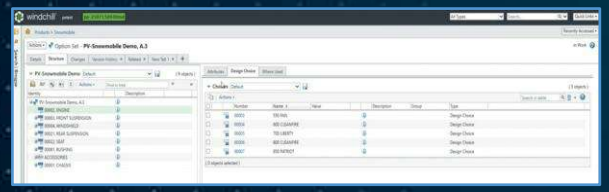
Mechanical Engineering

Electrical Engineering

Software Engineering

windchill®

Product lifecycle management



CAPABILITIES & MATURITY ROADMAP

PTC'S ROADMAP FOR INTEGRATED PRODUCT ENGINEERING

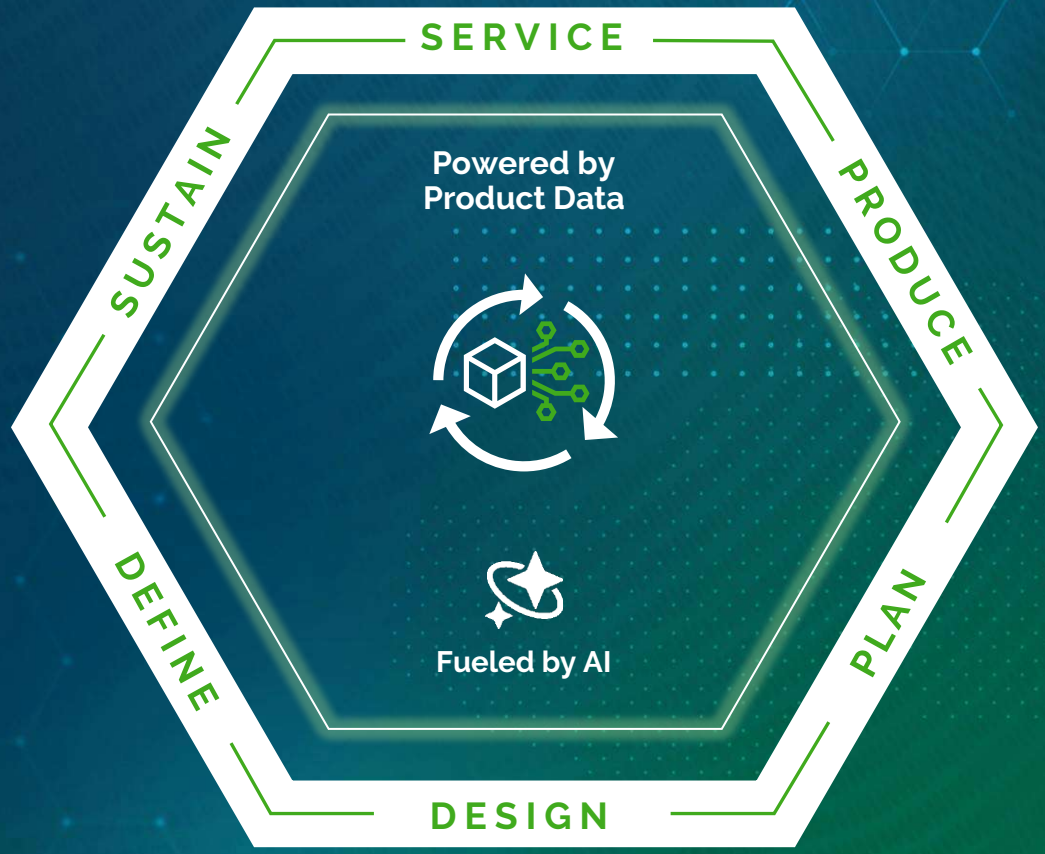
CAPABILITIES & MATURITY ROADMAP PROGRESS

PTC'S ROADMAP FOR INTEGRATED PRODUCT ENGINEERING

PTC AI STRATEGY

AI built on a trusted product data foundation

- **Intelligent Solutions:** deliver value in tools customers use everyday
- **Intelligence Across the Lifecycle**: expand value across products & processes
- **Enterprise Intelligence**: scale value with trusted data, best-in-class technology, and an open ecosystem



AI STRATEGY

PRODUCT AI

Deliver embedded AI in products

AI built into the PTC products you already use. Specialized agents, purpose-built to work within the software's context and controls, help your teams move faster and produce higher-quality work.

ECOSYSTEM AI

Enable customer and partner AI

Your AI investments work with PTC. Through open standards, customer and partner AI can use PTC's data and agent layer to execute work in third party systems.

CROSS PRODUCT AI

Unlock AI across products

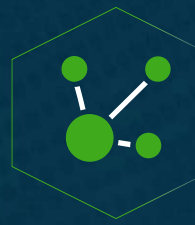
Your work processes traverse many systems. PTC's connected portfolio is where AI reasons across the digital thread and acts as a coworker that operates inside each system's governed workflows.

AI VISION FOR FUELING CUSTOMER OUTCOMES

Turbocharge Workers

- Scale access to knowledge
- Automate repetitive work
- Redefine roles with AI agents as teammates

- *Foundational models*
- *Agents*
- *Vector DB*



Raise Enterprise IQ

- Break down data silos
- Unlock insights and action across the digital thread
- Accelerate work between teams

- *MCP / API Integrations*
- *Agentic AI*
- *Semantic layer / knowledge graph*

Next-Gen Product Lifecycles

- Reimagine product development
- Iterative lifecycles, collapsing execution times
- People working as coordinators of agentic systems

- *World foundation models*
- *Agentic networks*
- *Omniverse / Digital Twins*

AI ROADMAP SUMMARY BY CALENDAR YEAR AND ORDER OF RELEASE

Windchill

- **2026** Part similarity & duplicate search
- **2026** AI Assistant document insights
- **2026** AI Assistant as MCP server
- **2026** AI Assistant in product support
- **2026** AI Assistant part and change insights
- **2026** Problem report agent
- **2026** MCP Server – part, change, doc
- **2027** Change impact agent
- **2027** AI Assistant expanded metadata
- **2027** MCP server expanded tools

Creo

- **2026** In Product Help & Guidance
- **2026** Model Insights
- **2026** Predictive selection
- **2026** Predictive sketcher const., ass'y placement
- **2026** AI Rendering
- **2026** In Product Troubleshooting
- **2026** Creo as MCP client
- **2026** Customer-curated knowledge bases
- **2026** Design task automation
- **2027** Model validation & compliance
- **2027** AI-Driven UI interaction
- **2027** Automation studio
- **2027** Creo as MCP server

Codebeamer

- **2025** Requirement quality analysis
- **2025** Requirement rewrite
- **2025** Test case generation
- **2026** Semantic search
- **2026** MCP server for requirements tools
- **2027** Ingest assistant
- **2027** Codebeamer agents as MCP servers
- **2027** Requirement consistency & contradiction
- **2027** Requirements similarity / duplicate detection
- **2027** Requirement batch Analysis

Jetstream

- **2026** Design facilitator comment summary
- **2027** Automated session recaps
- **2027** AI-assisted task creation
- **2027** AI-assisted design reviews

Orbit

- **2026** AI Canvas
- **2026** AI Hub
- **2026** AI cross product reasoning
- **2026** AI memory
- **2027** Orbit to Windchill MCP integration

ServiceMax

- **2025** Service Insights agent
- **2025** Schedule Management agent
- **2025** Knowledge Access agent
- **2025** AI Chat and AI Actions
- **2025** MCP Server
- **2025** SFM Agent
- **2026** Agent AI Actions
- **2026** AI memory
- **2026** AI test center
- **2026** Voice-to-Form
- **2026** Assisted troubleshooting

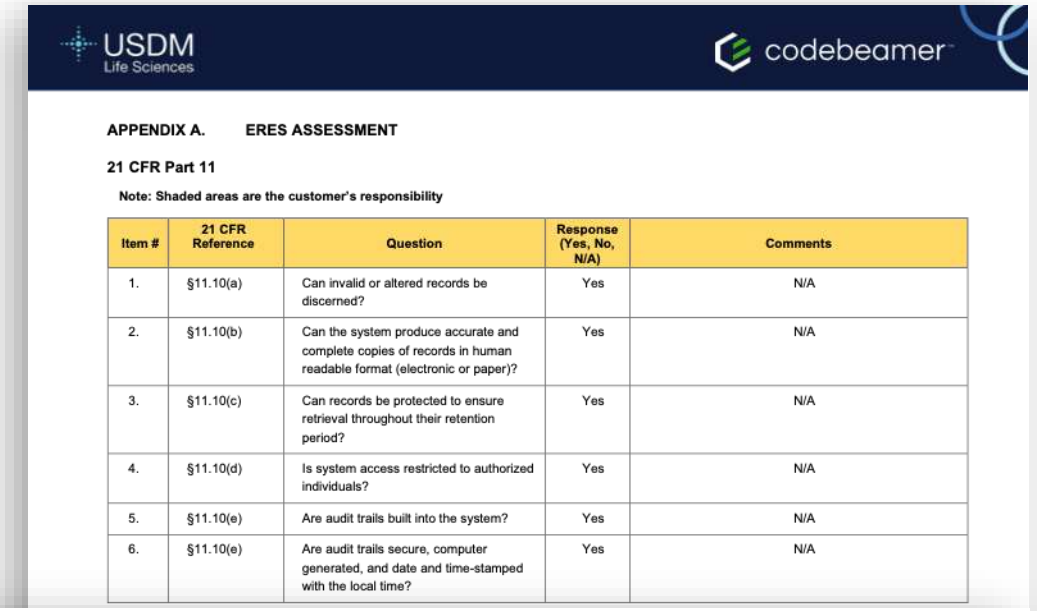
WINDCHILL+ MEDTECH ADDRESSING KEY DRIVERS

USDM Validation Accelerator Package	**USDM Validation Accelerator Package** reduces time spent on validation activities and supports CSA compliance
Performance, Scale and Stability	**Exclusive deployment architecture** ensures performance, scale, and stability
Security	**Best-in-class cybersecurity** always up to date, vulnerability detection/ incident response
Upgrades	**Completed every 12-24 months, on your timeline** Assisted via automation
Maintenance	**Semi-automated *scheduled*** CPS & OS, *minimal manual coordination*
Customizations | Integrations	**PTC prescribed methodologies** assure security and upgradability, *enforced by build deployment tools*
Experience and SaaS Exclusive Features	**"Optimization" for operations at scale** designed for Self Service
AI Advantage	**"Push Button" AI** One plugin, no upgrades = instant access to Windchill AI

Windchill+ MedTech Accelerates Speed to Adoption

CODEBEAMER+ FOR MEDTECH COMING SOON

- Codebeamer Vendor Assurance Report completed by USDM
  - Codebeamer SDLC, quality processes, and service operations are appropriately designed and functioning
  - These processes support compliance with regulatory expectations, including FDA 21 CFR Part 11 and broader GxP
- Medical Software Engineering Template
  - Available with all supported Codebeamer Versions
- Next steps
  - Update Solution Template (FY27)
  - Codebeamer+ Tool Qualification



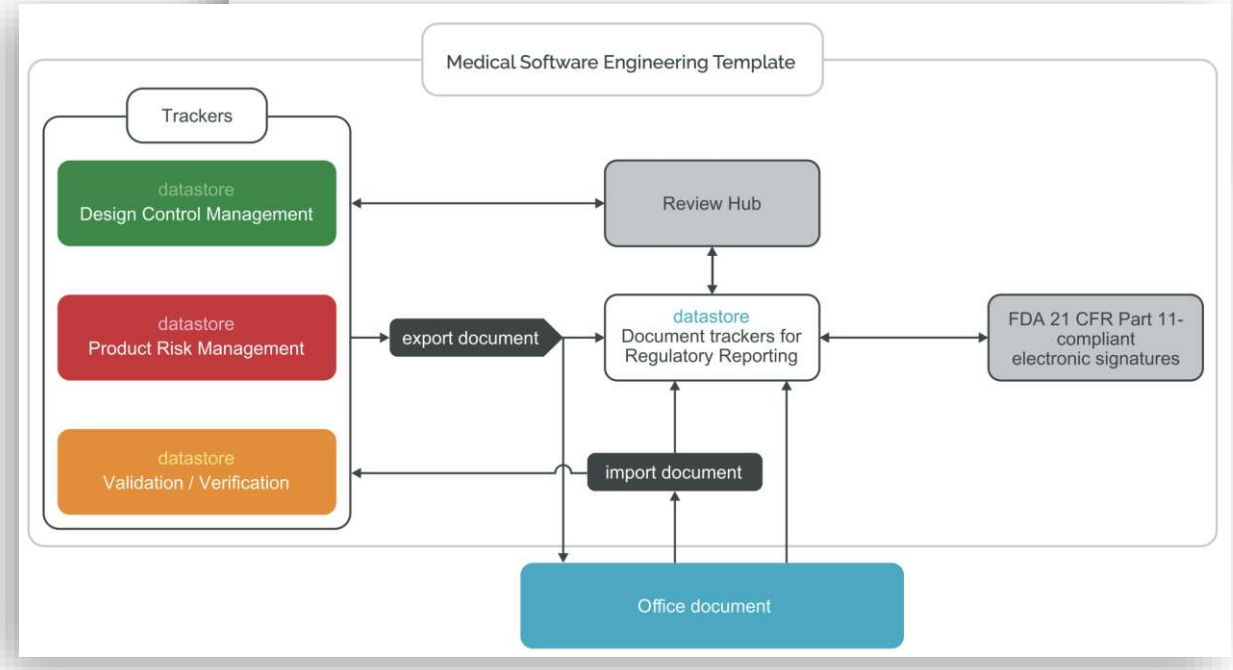
USDM Life Sciences — codebeamer

APPENDIX A. ERES ASSESSMENT

21 CFR Part 11

Note: Shaded areas are the customer's responsibility

Item #	21 CFR Reference	Question	Response (Yes, No, N/A)	Comments
1.	§11.10(a)	Can invalid or altered records be discerned?	Yes	N/A
2.	§11.10(b)	Can the system produce accurate and complete copies of records in human readable format (electronic or paper)?	Yes	N/A
3.	§11.10(c)	Can records be protected to ensure retrieval throughout their retention period?	Yes	N/A
4.	§11.10(d)	Is system access restricted to authorized individuals?	Yes	N/A
5.	§11.10(e)	Are audit trails built into the system?	Yes	N/A
6.	§11.10(e)	Are audit trails secure, computer generated, and date and time-stamped with the local time?	Yes	N/A



Q&A