CDT TECH DAY

JUNE 11TH 2024

Joe Krolla

Market Development Manager, Electronic Board Systems

Siemens Digital Industries Software

Next Generation Electronic Systems Design

Siemens Xcelerator Portfolio

Joe Krolla
Market Development Manager, Electronic Board Systems
Siemens Digital Industries Software

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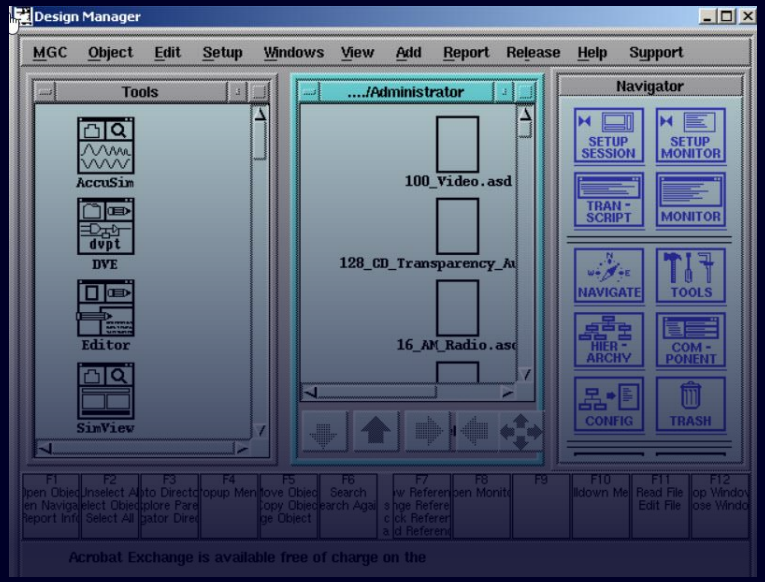
Evolution of Electronic Systems Design

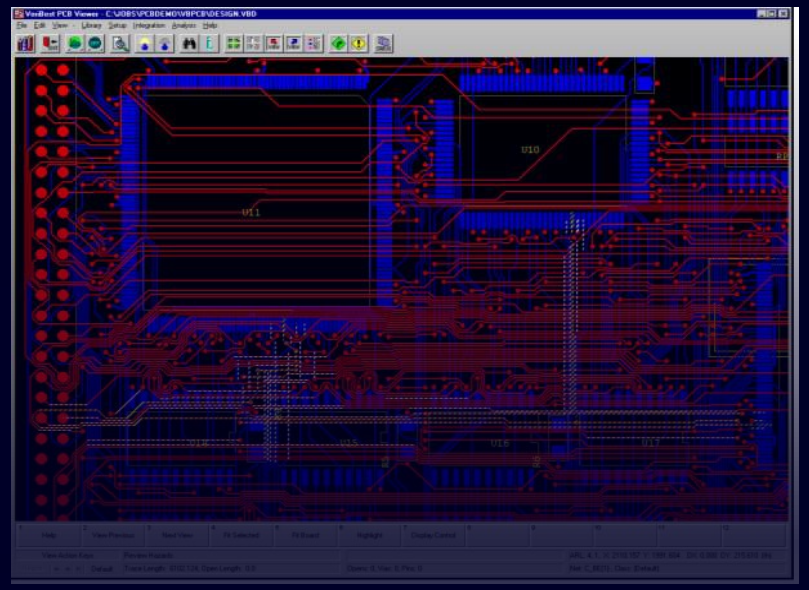
1980s
Rise of EDA

Computer-Aided Design



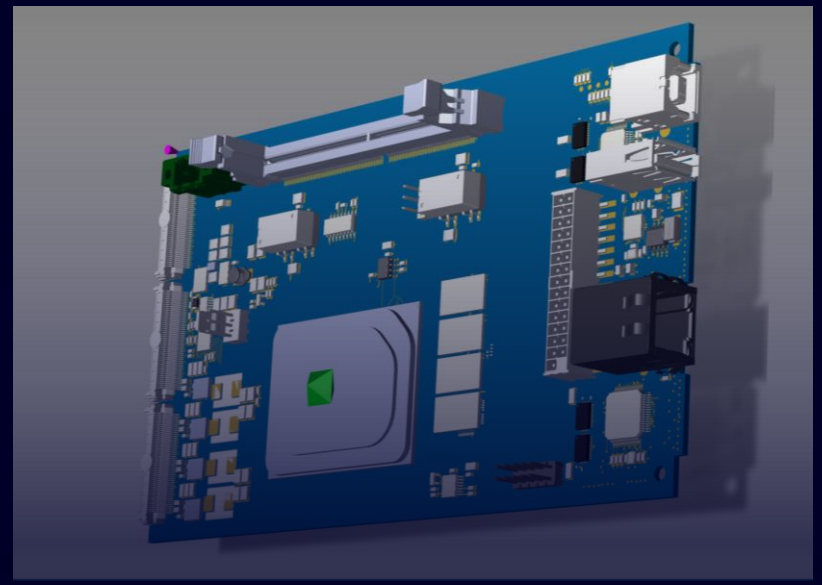
1990s-2000s
Design Automation

Unified Design Environments



2010s – 2020s
Design Automation

Multi-Discipline Systems Design



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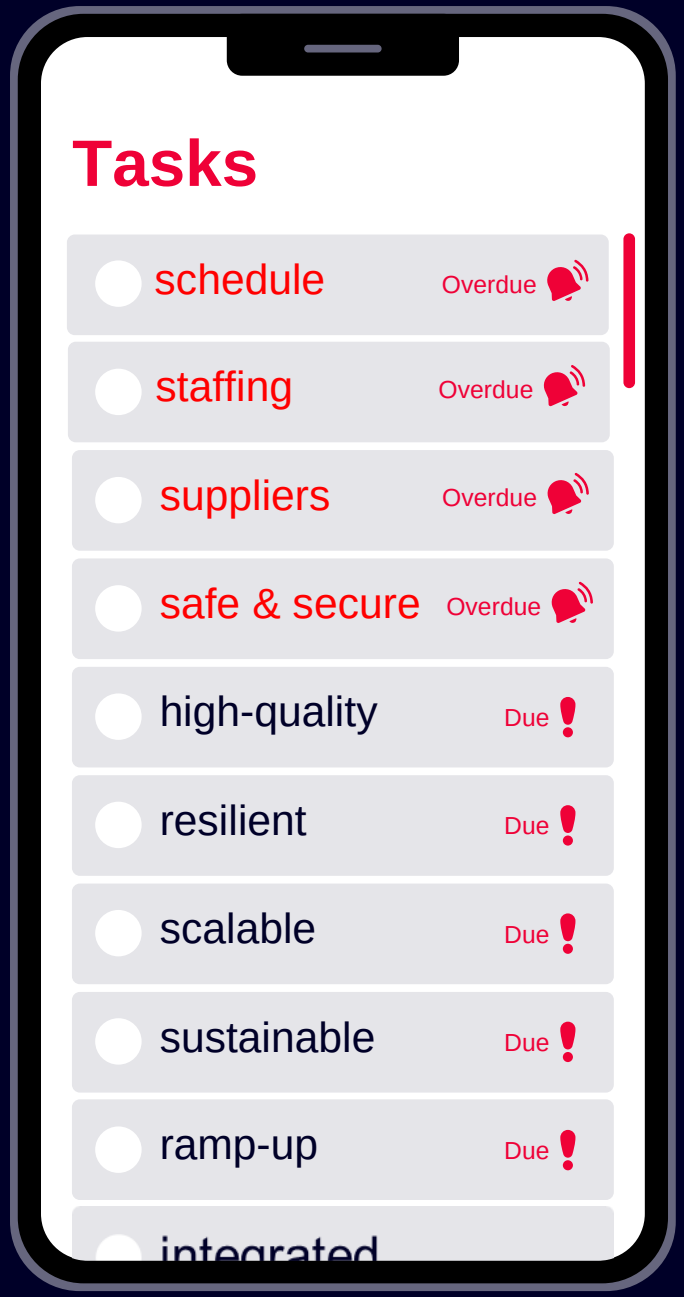
Goals

- keep pace with accelerating innovation
- speed up product delivery

Challenges

Resource Constraints	Competitive Pressures	Market Volatility



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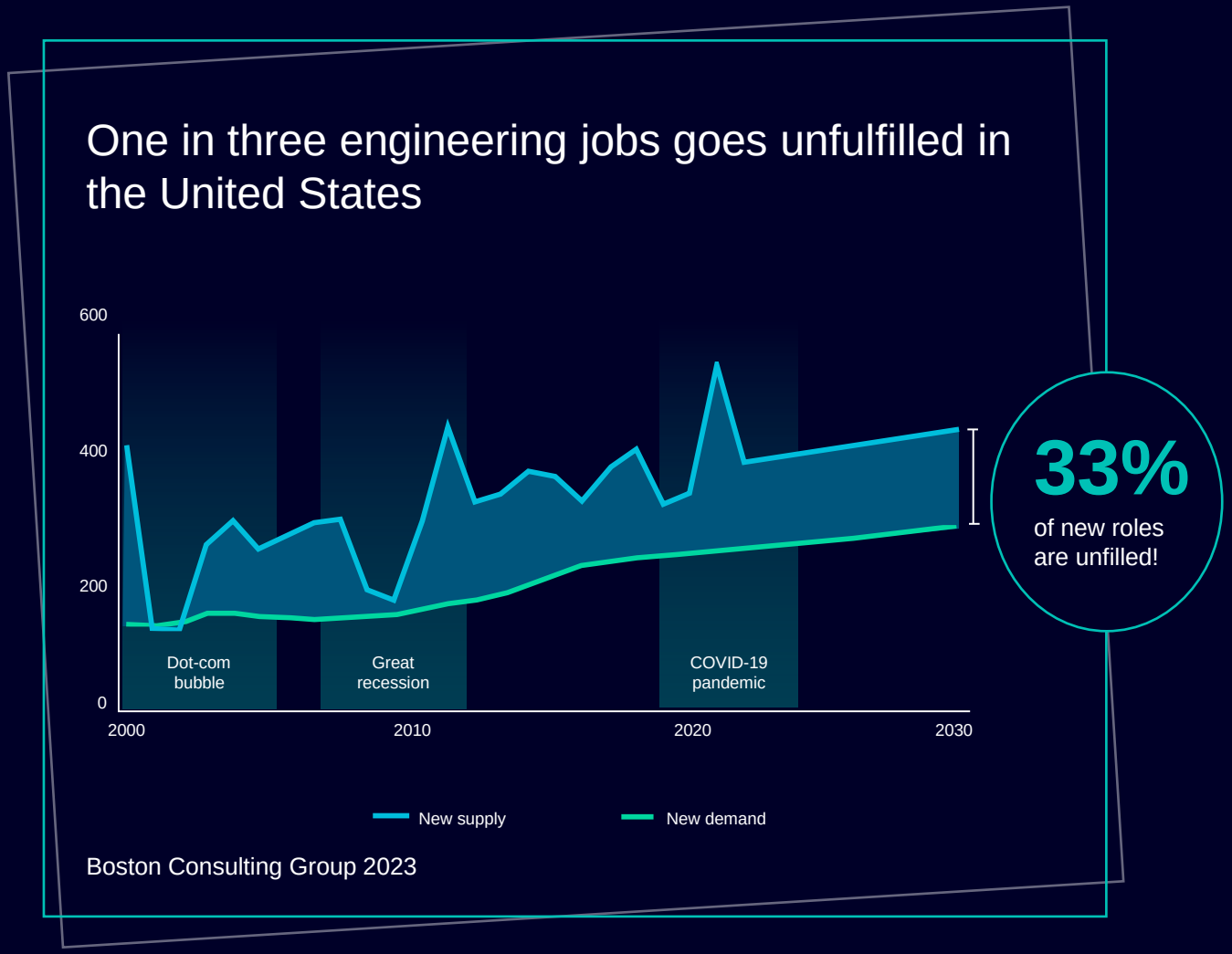
Workforce changes and resource management are straining engineering organizations across all geographies.



BCG analysis based on US bureau of statistics; National Sciences Foundation, American Society of Engineering Education, US Citizen and Immigration Services

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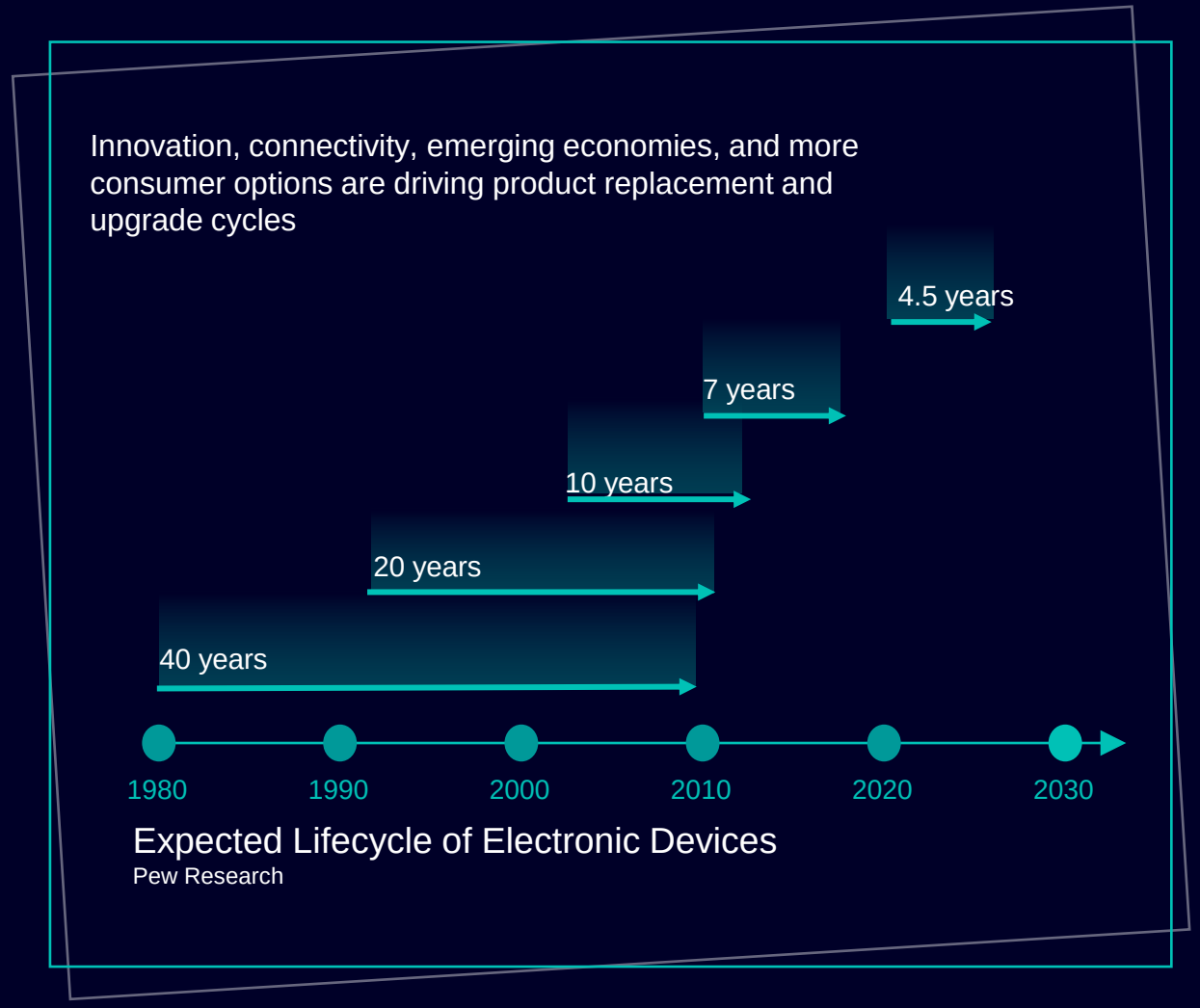
Electronic systems innovation is accelerating, product release cycles are measured in months, not years.



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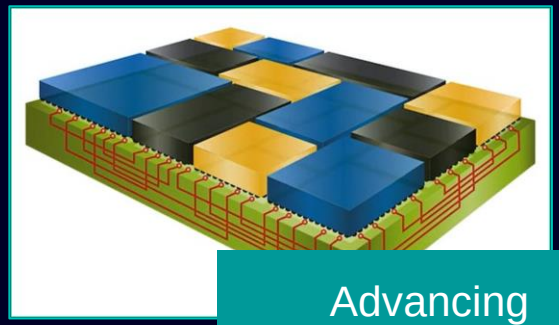
Unpredictability is the new normal, and there is no end in sight requiring resilience across organizations.

Electrification everywhere

Supply-Chain Volatility

Trade-wars



Advancing technologies

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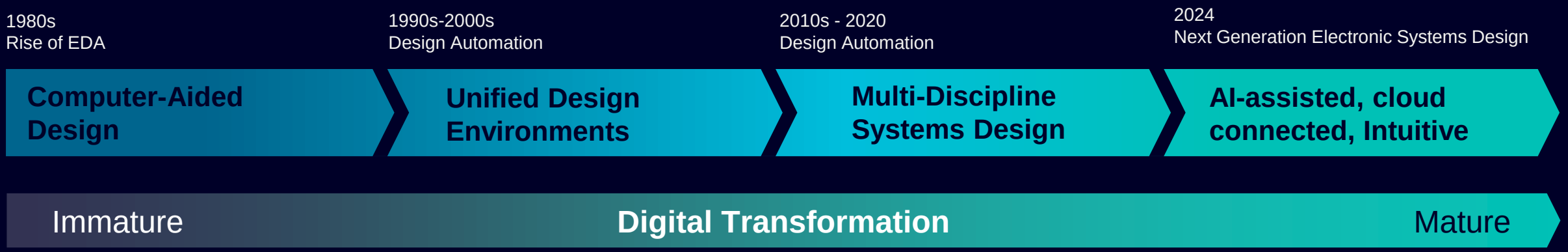
Evolution of Electronic Systems Design - Today



A roadmap to innovate faster and accelerate the delivery of your advanced electronic products

Overcome resource constraints and addressing competitive pressures

Develop resilience and adaptability to chronic unpredictability

Accelerate digital transformation initiatives and AI/ML implementation

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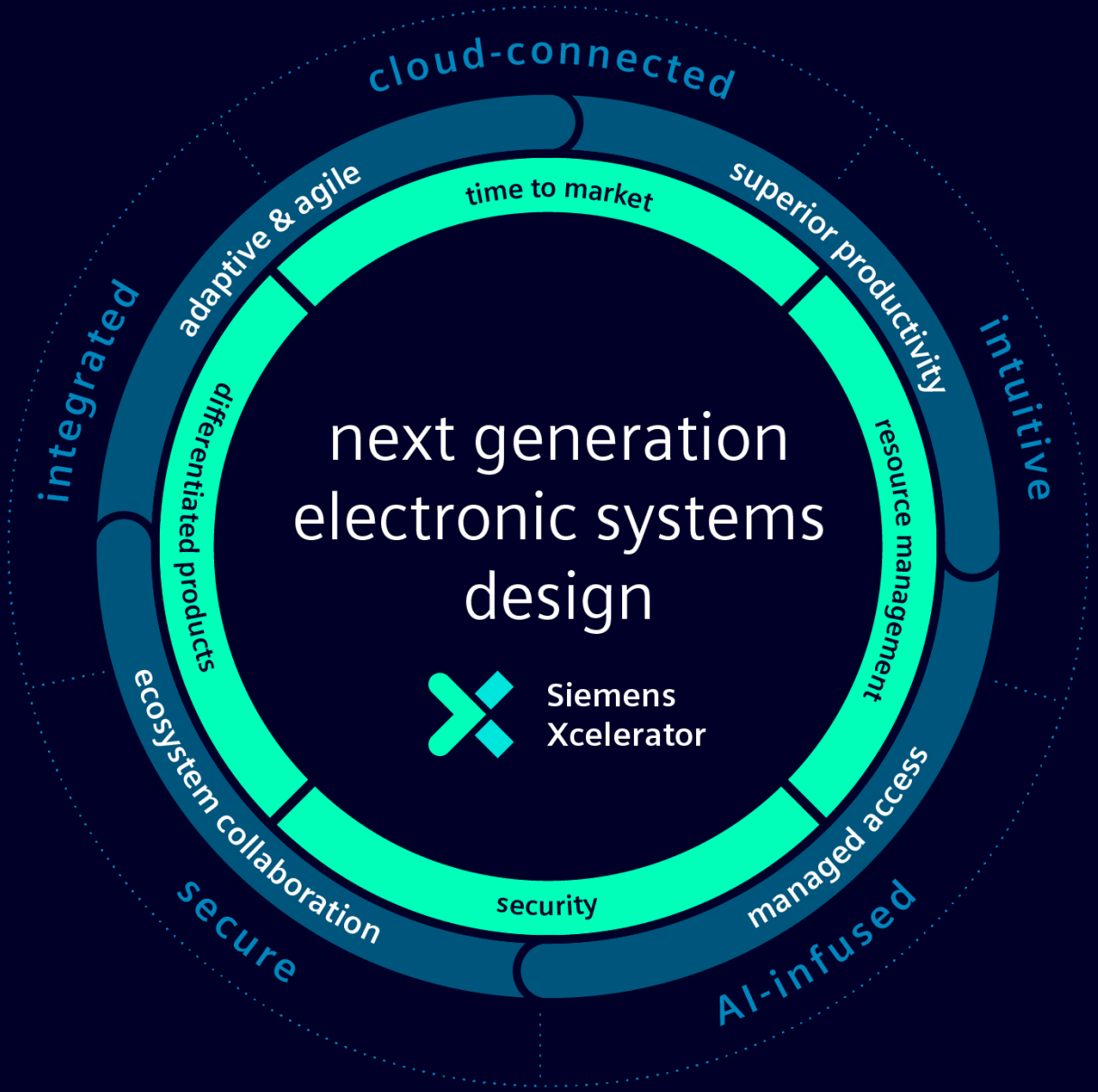
Introducing Next Generation Electronic Systems Design



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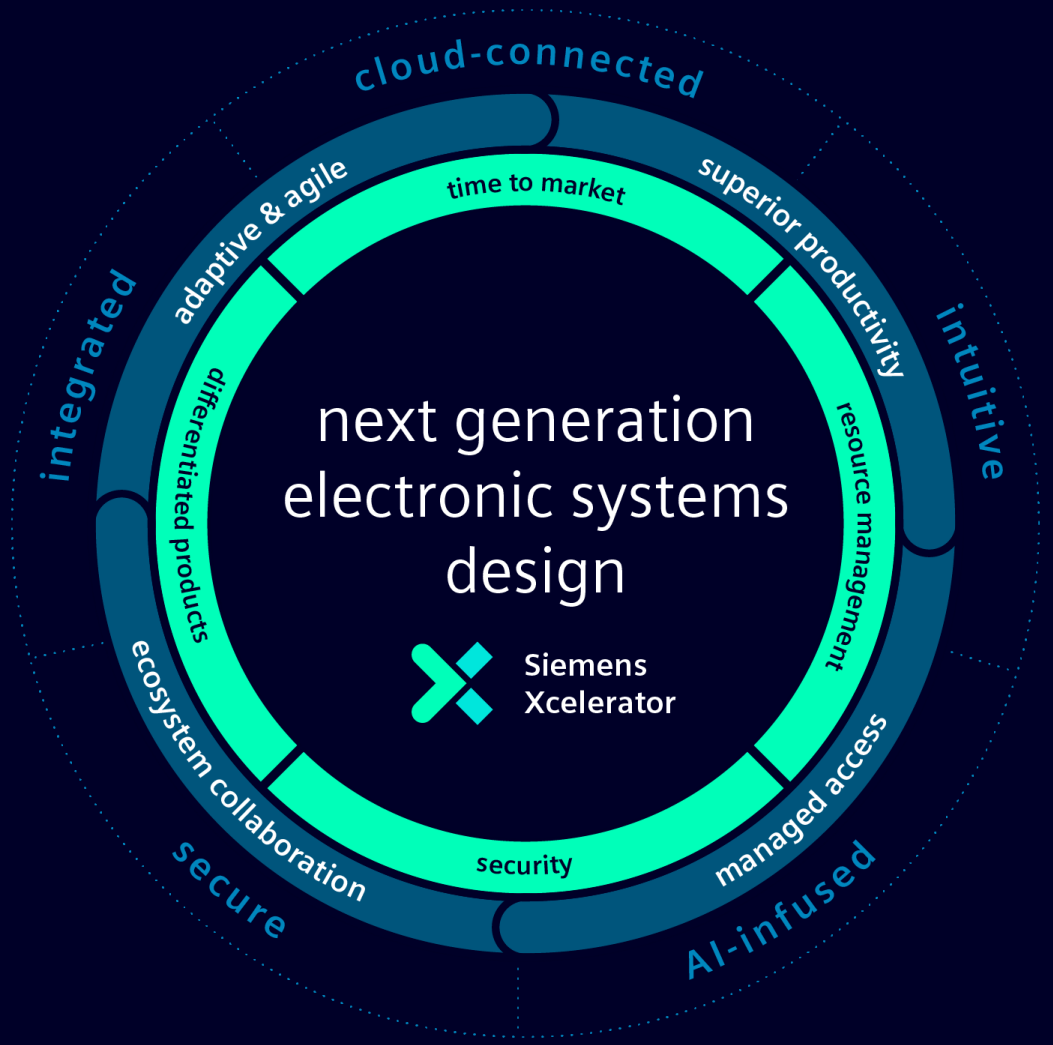
The Next Generation Electronic Systems Design Environment

Xpedition · HyperLynx · IC Packaging & 3DIC Design · PADS Pro



Adaptive

Enables new and experienced designers with a personalized and modern UX, built on contemporary principals.

Efficient

Makes industry-leading design technologies accessible with faster time-to-results.

Collaborative

Supports the expanding development value chain with partners, suppliers, and remote development.

Managed

Recognizes growing vulnerabilities to global cyber-security risks and need to fortify data.

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Removes the barriers of complexity, accelerates productivity, and delivers positive experiences for engineers and their teams

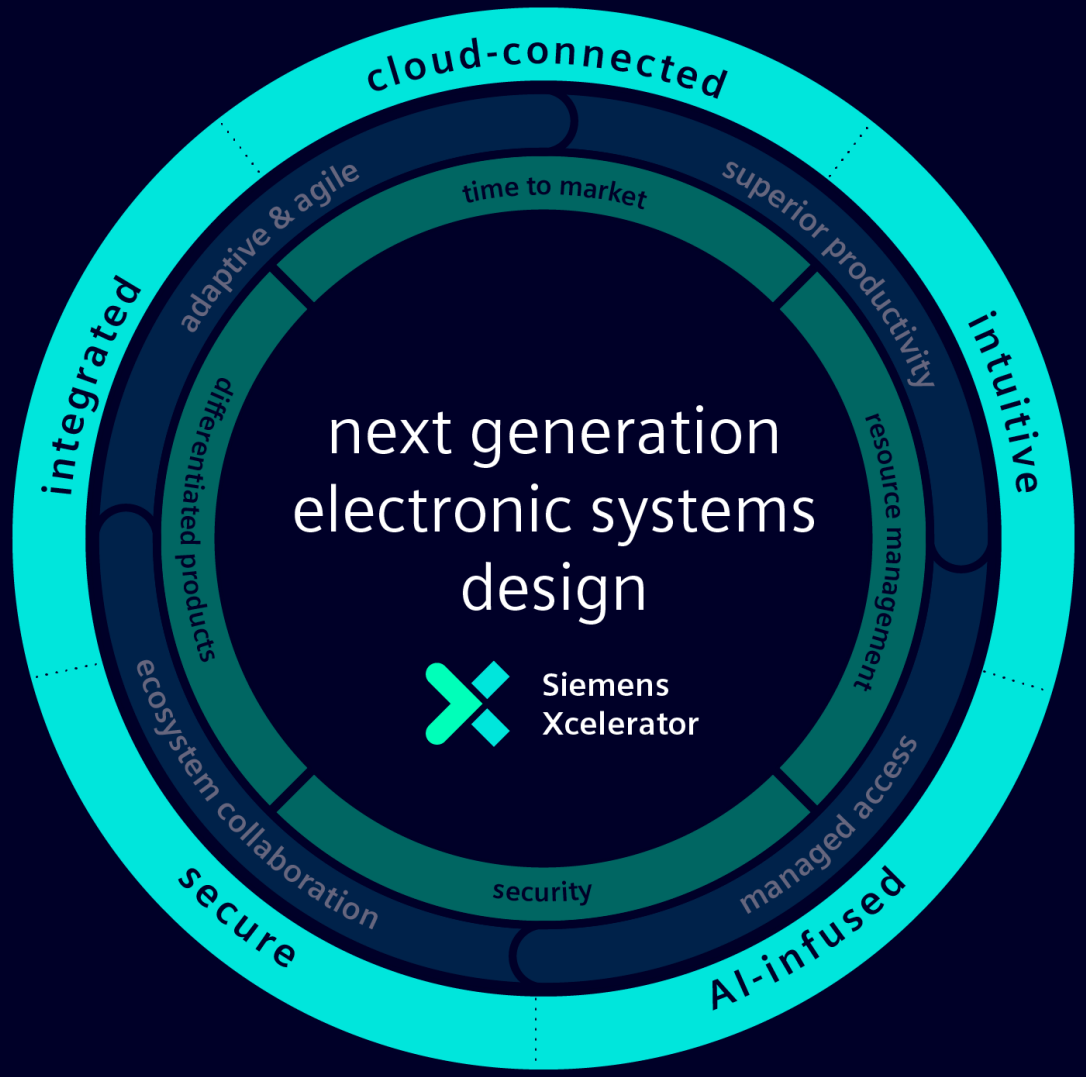
Intuitive
Boost productivity with a modern user experience

AI-infused
Accelerate design optimization and automation

Cloud-connected
Collaborate seamlessly across the ecosystem

Integrated
Leverage digital threads across multiple domains

Secure
Ensure the protection of critical design IP



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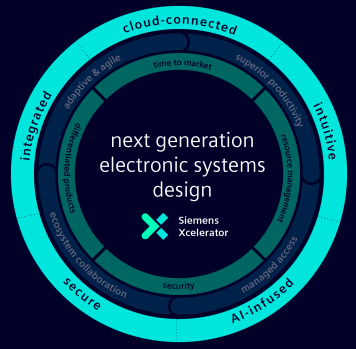


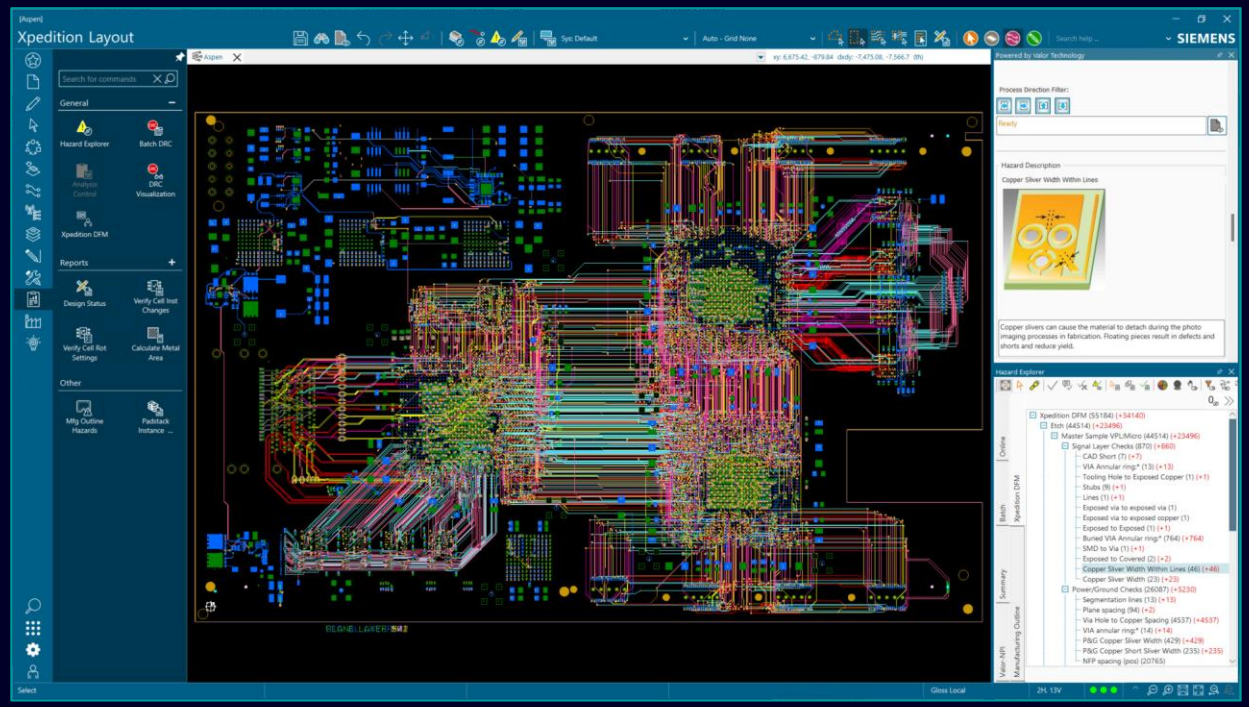
Intuitive

Removes the barriers of complexity

- Superior user & team productivity
- Lowered learning curve
- Results in positive experiences

> “Was able to figure things out before reading instructions”

> “Just looking at it makes you want to use the tool more”



Select Beta Customer Quotes

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UX Overview

Intuitive

Removes the barriers of complexity

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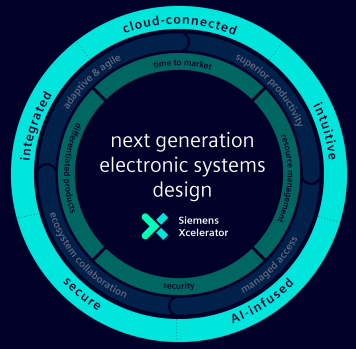


AI-infused

Expands engineering capacity without additional resources

Data collection and preprocessing

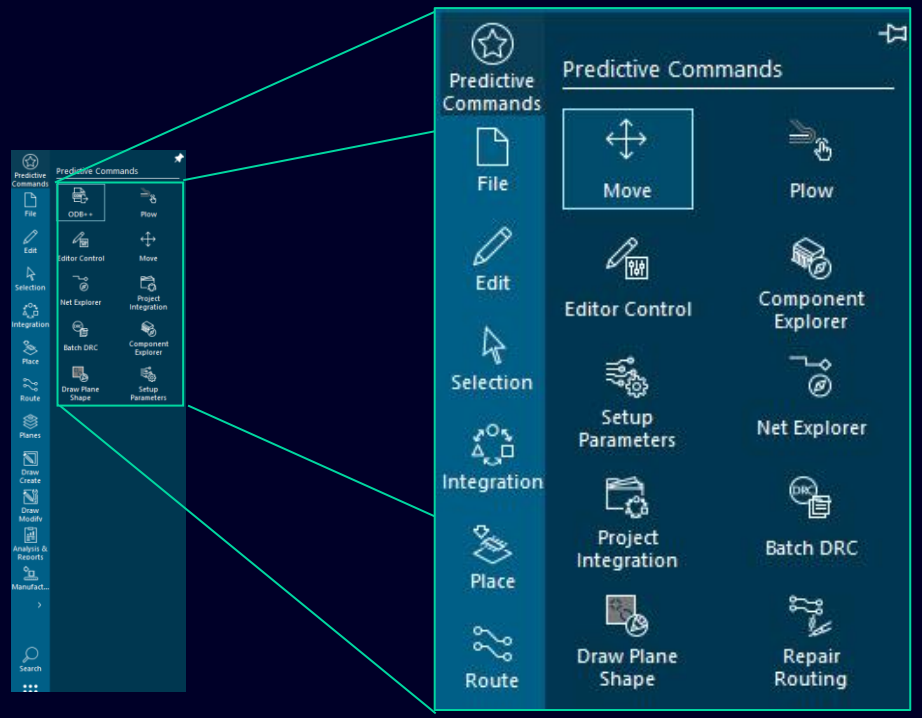
Model training

Inference & prediction

Feedback loop

> “This is the best prediction engine I've seen in EDA software so far. ”

Select Beta Customer Quotes



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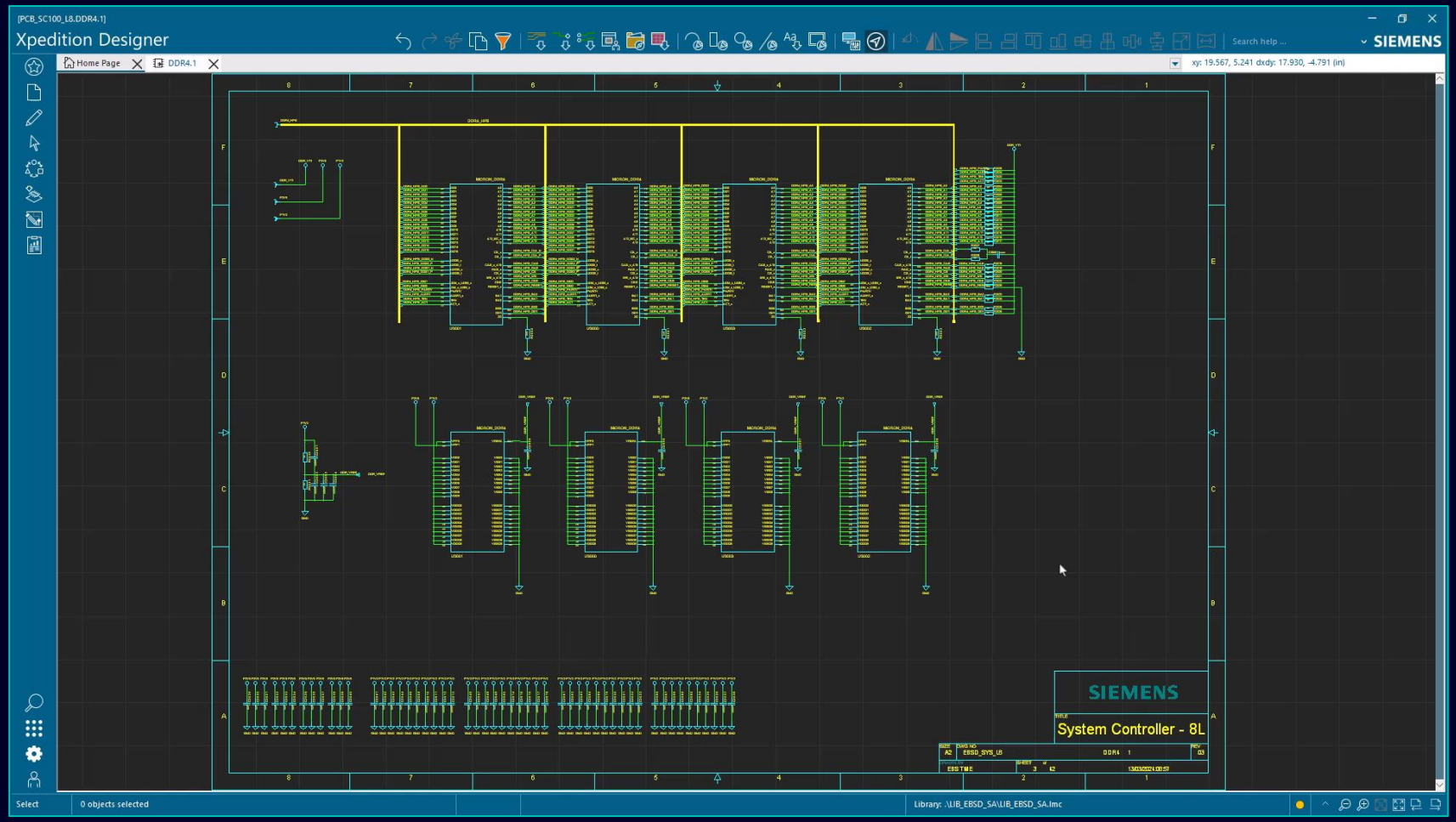
Predictive Commands

AI-infused

Accelerate design optimization and automation



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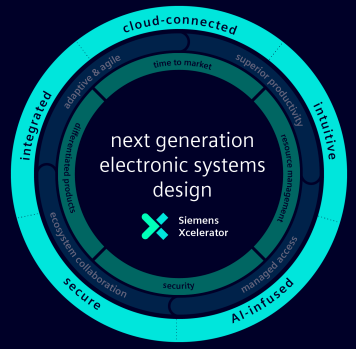


Cloud-enabled

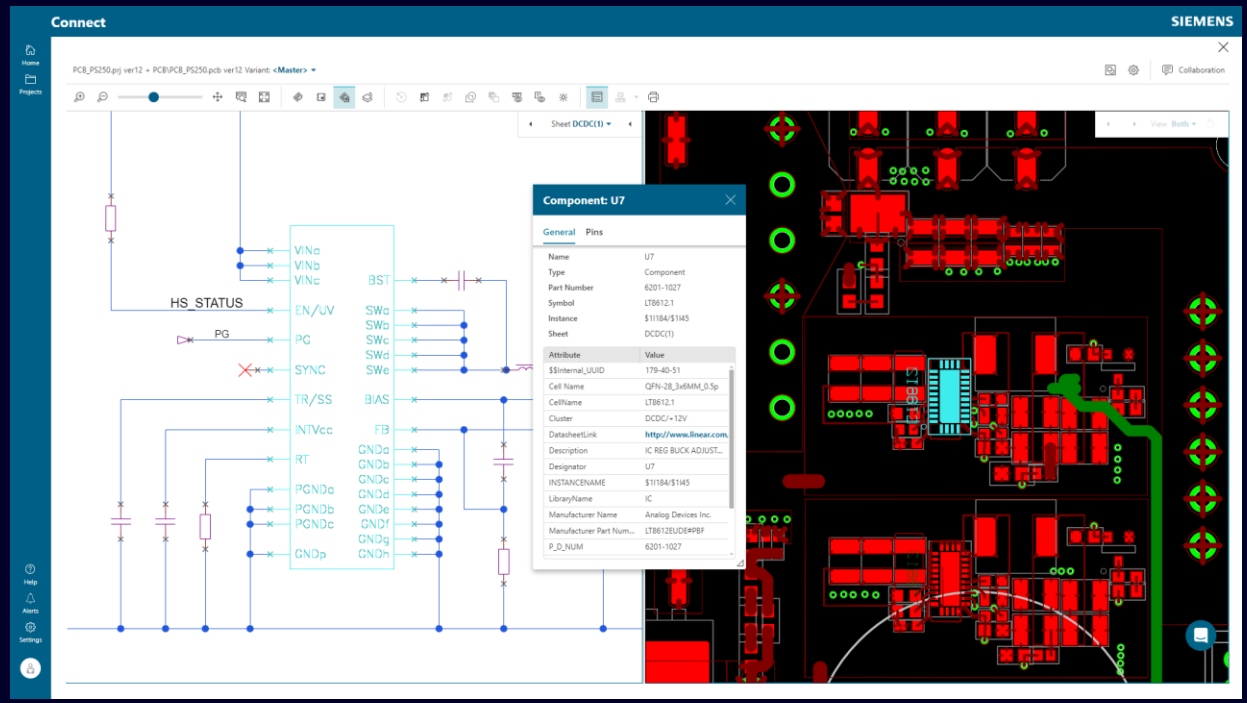
Transforming collaboration across the value-chain

Seamless collaboration

Accelerated results at lower costs

Complies to industry security standards

> “Everyone is connected, and we all know we’re looking at the latest design data. It removes any questioning of the integrity of the data.” Taylor Dowding Innovation Ltd.



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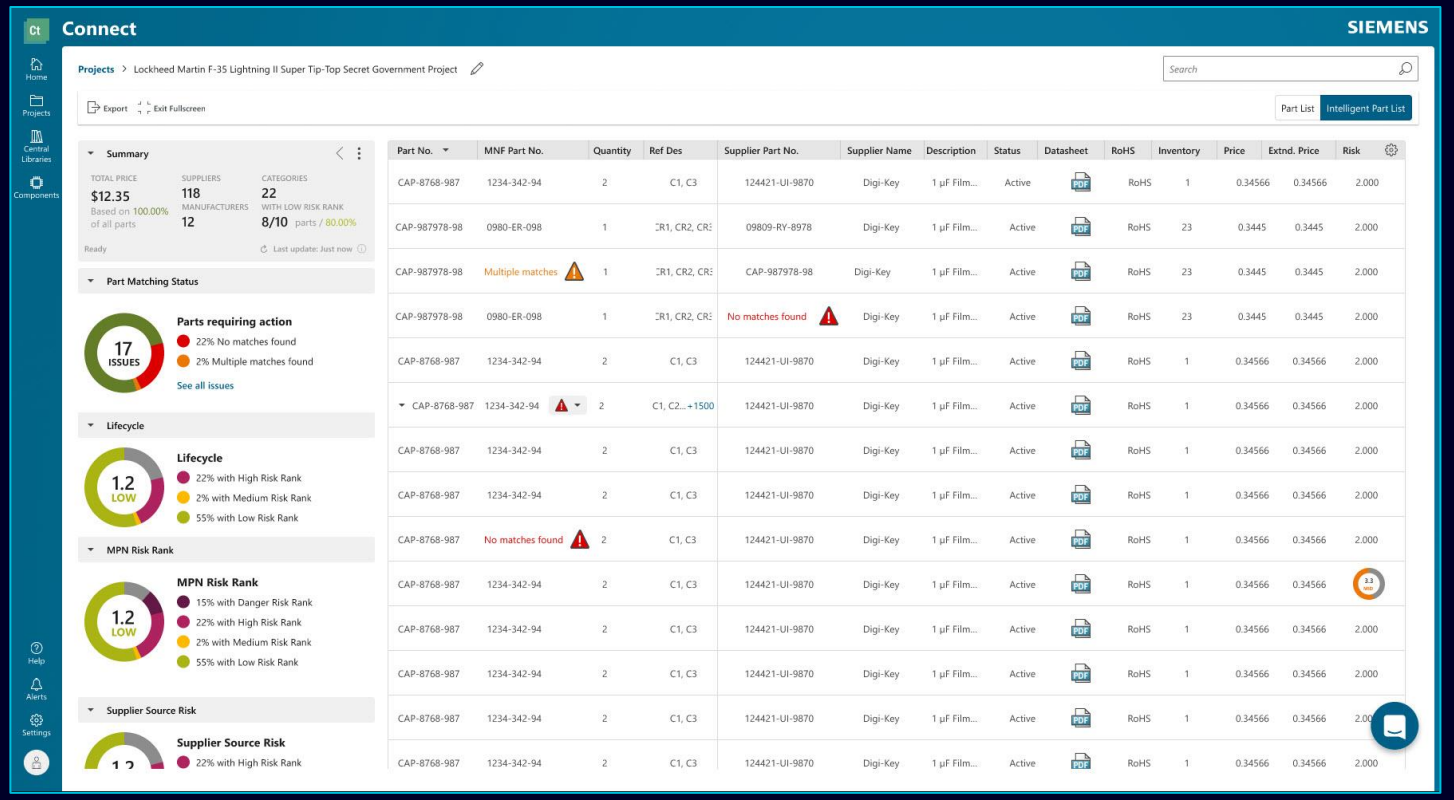
Intelligent Parts List

Pushbutton BOM health analysis

- Analyzes BOM health for project timeline and cost impact identification
- Identifies and isolates high-risk components based on various criteria
- Centralizes BOM intelligence, enabling extended teams to align on part choices and design decisions
- Consolidates BOM views into cost, lifecycle, and risk for quick and comprehensive analysis



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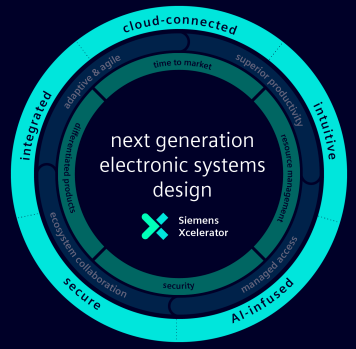


Integrated

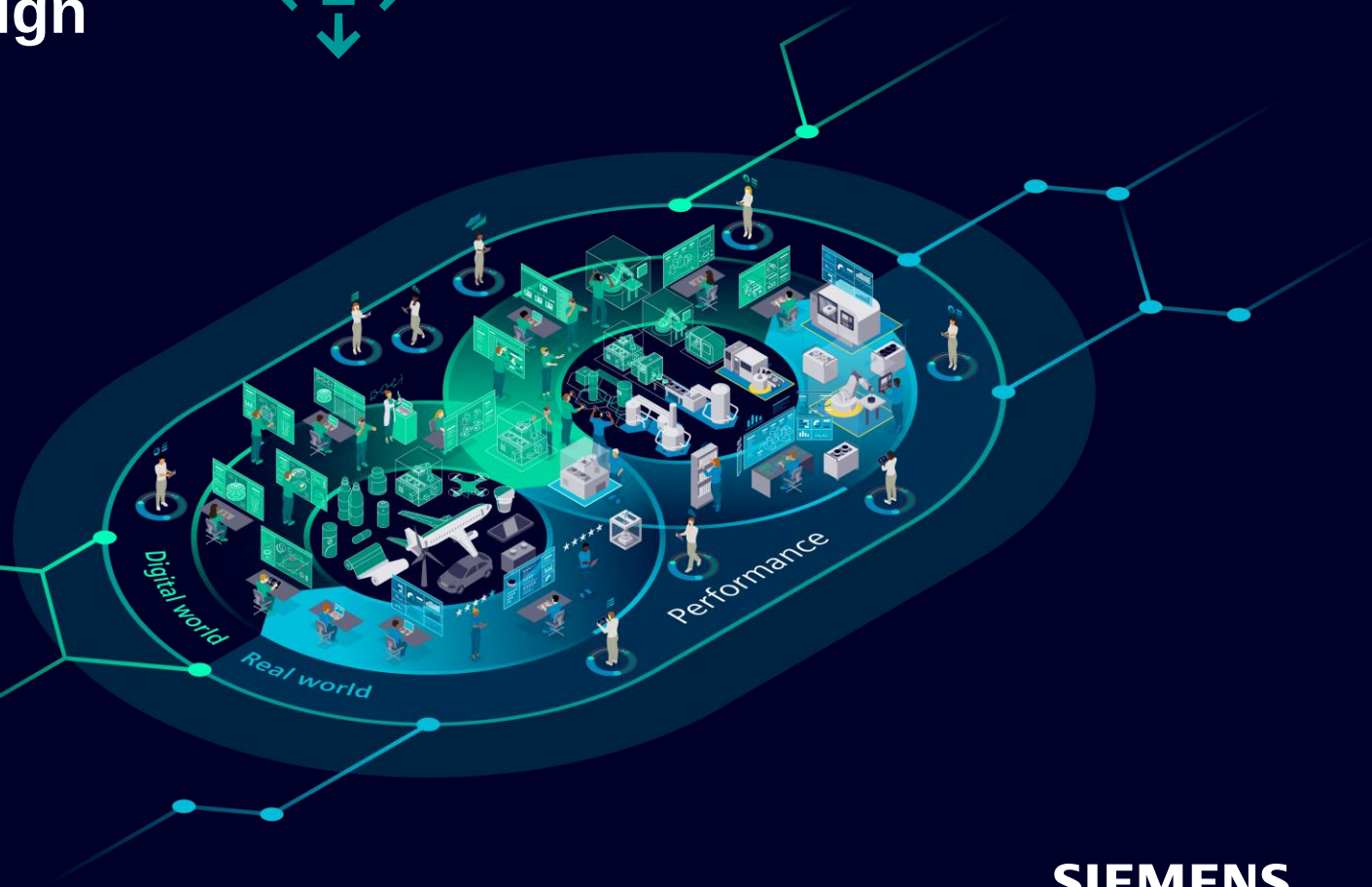
Eliminating silos in electronic systems design

Accelerated design cycles

First-pass success

Highly flexible

"Engineers can become more intuitive as they balance the cause and effect of how a design change will affect something structurally or impact thermal performance." Boeing



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Model Based Engineering

Integrated

Leverage digital threads across multiple domains

Xpedition EDM MBE 200

Requirements Integration Verification and Traceability

Alpha release review

May, 2024

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Digital Threads for Electronics Systems

Cores of the full tapestry

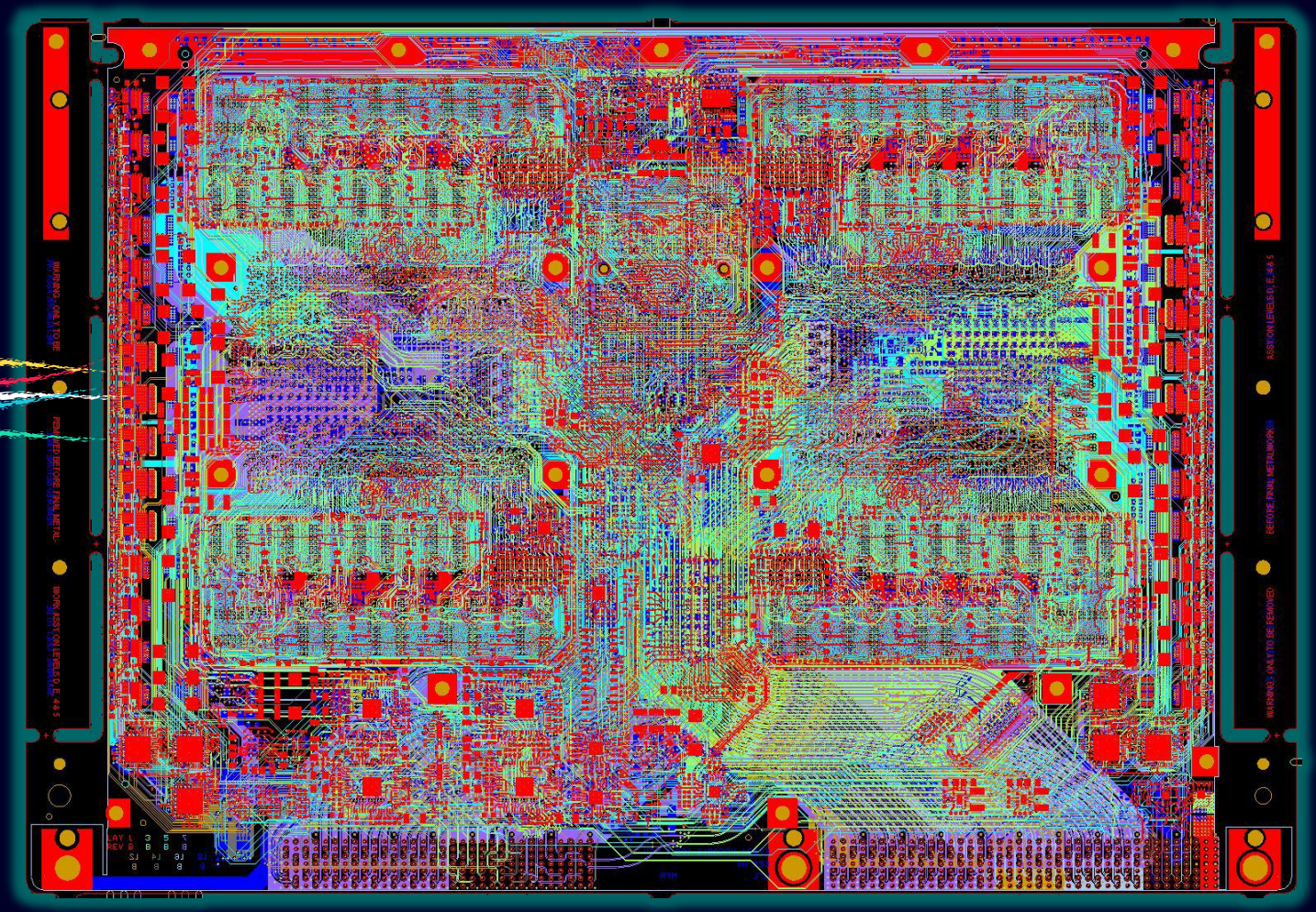
Architectural

Component

Design data

Verification

Manufacturing



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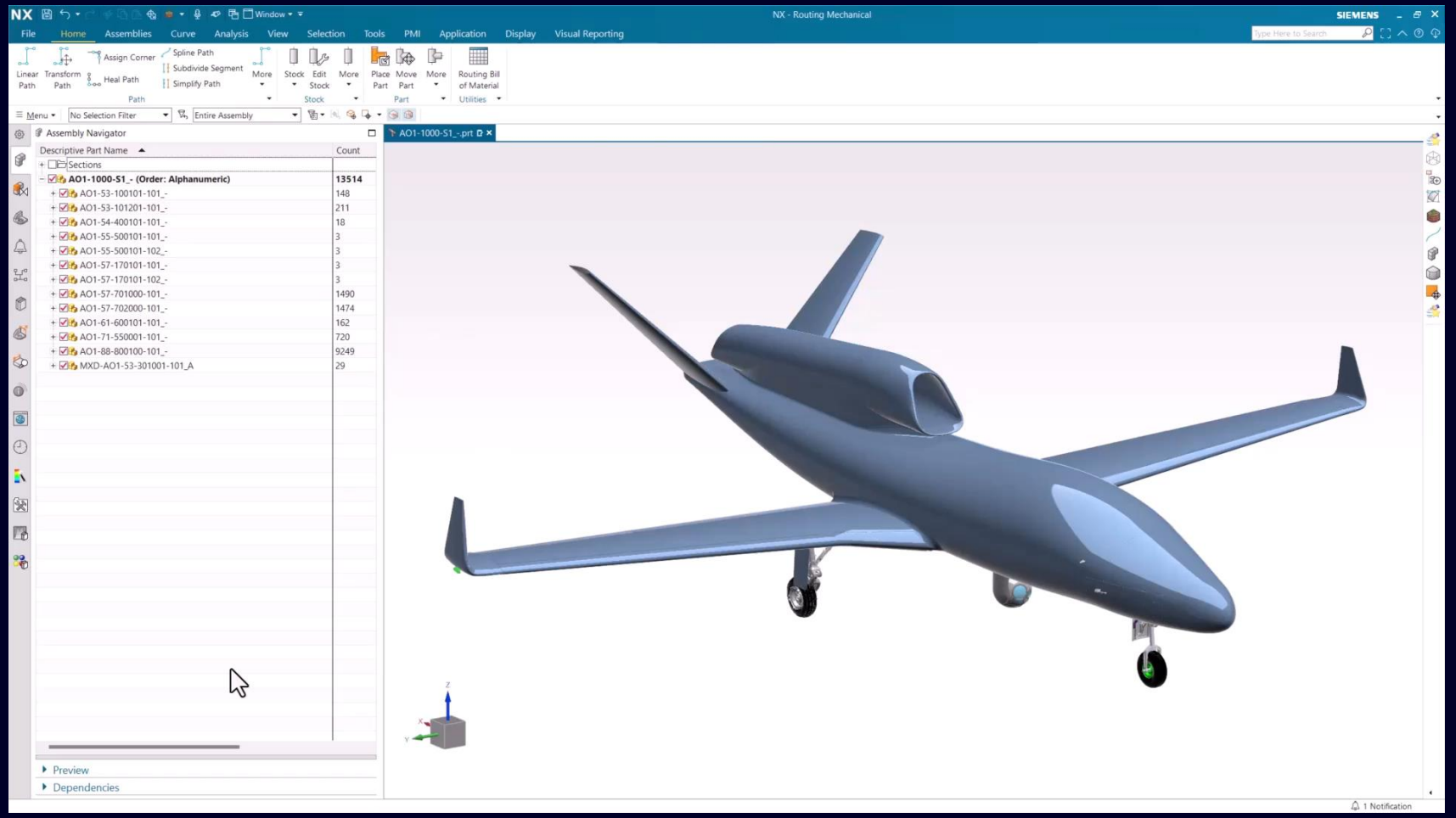
Digital Thread

Integrated

Leverage digital threads across multiple domains



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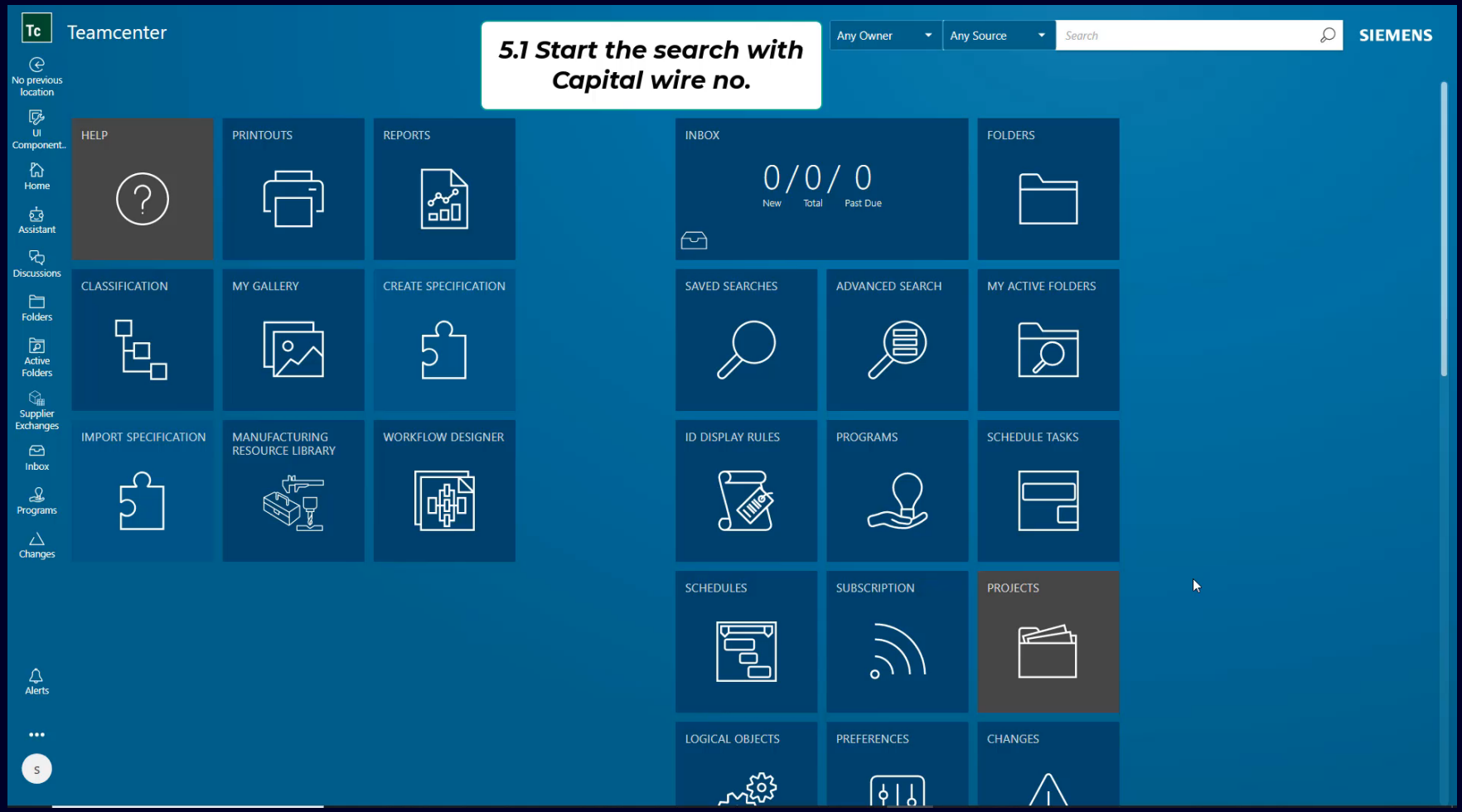
Digital Thread

Integrated

Leverage digital threads across multiple domains



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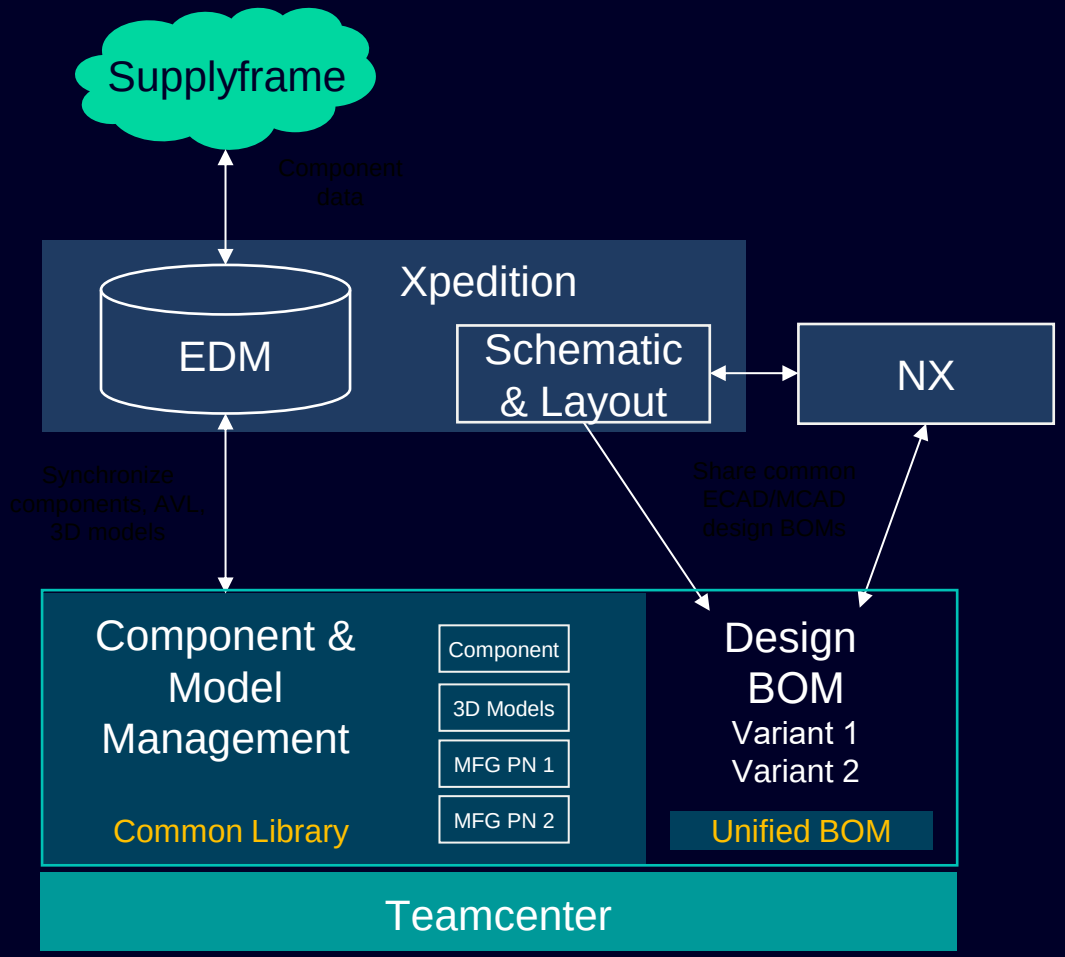
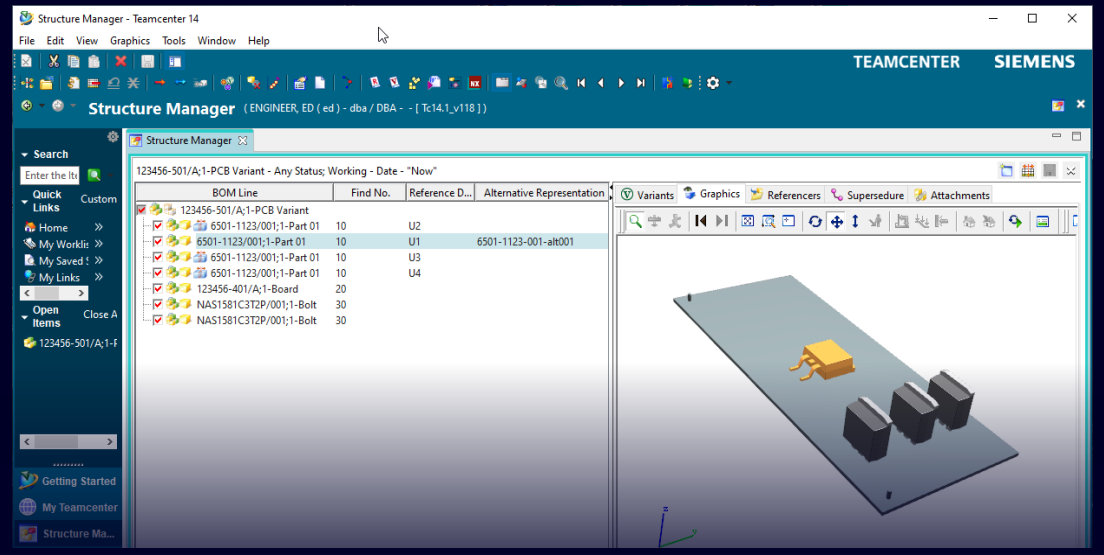
Integrated Electro-Mechanical Co-Design





- Supply Chain intelligence at the point of design
- Automated & streamlined multi-domain library synchronization
- Simplified BOM management with PCB variants, avoids errors and manual efforts
- Ensures accuracy with consistent utilization of 2D & 3D models

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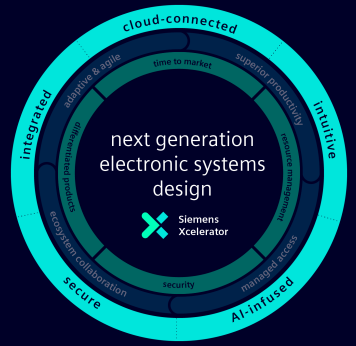

Secure

Assuring IP integrity, accuracy, and reliability

- Dynamic data restrictions enabled for only approved accessors
- Monitoring and reporting of behavior and anomalies
- Supports compliance to export control regulations
- Geolocation supported for prevent unauthorized access

Preventing unauthorized modification, deletion, or tampering

Managed access controls based on user roles, permissions, and authentication

Complies to industry security standards

Digital Twin

Secure

Multi-domain collaboration

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Data Access Restrictions

Secure

Ensure the protection of critical design IP

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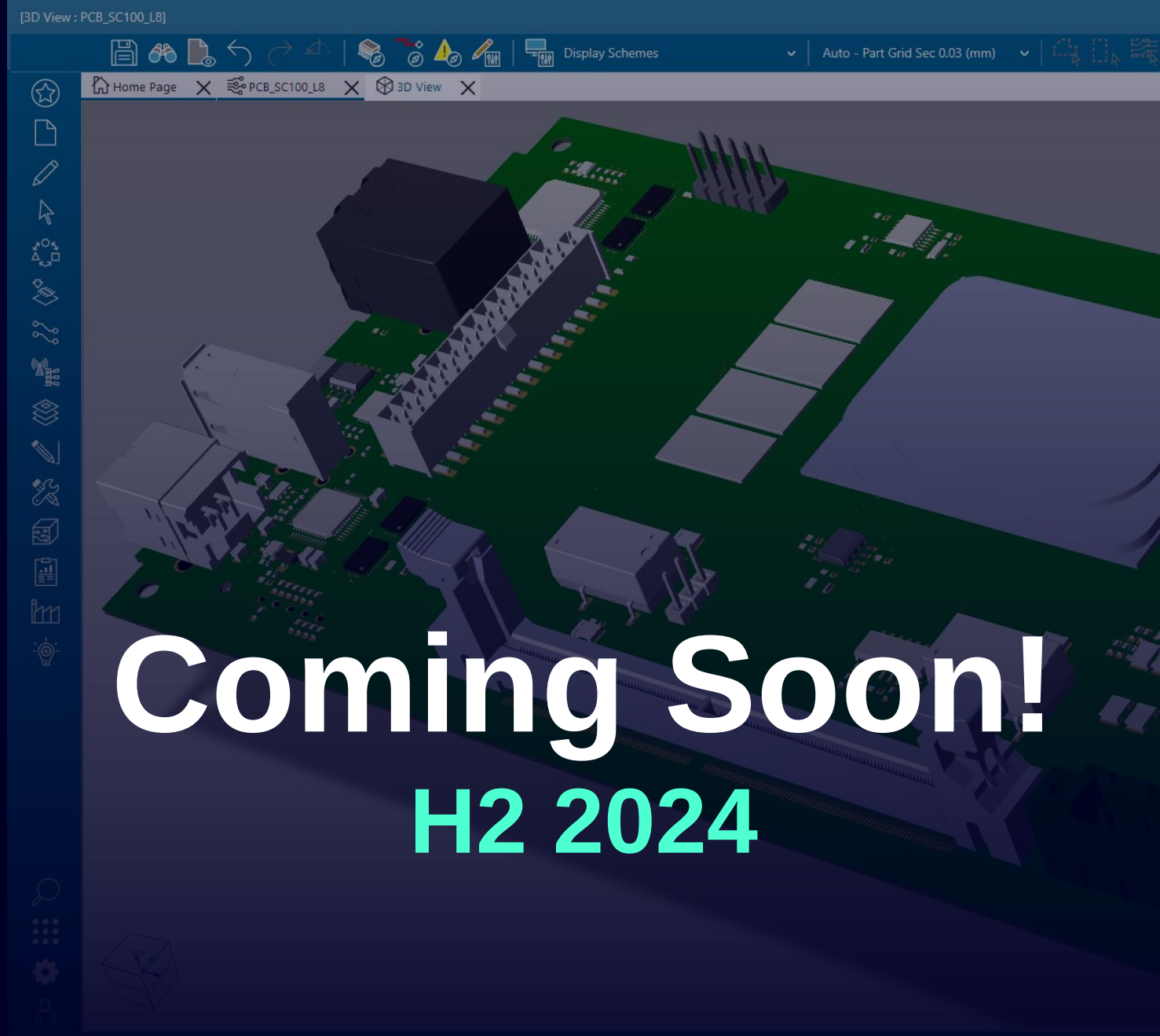
Next Generation Electronic Systems Design

Xpedition · HyperLynx · IC Packaging & 3DIC Design · PADS Pro

Transforming electronic systems design

- **Intuitive user-experience** to speed time-to-ramp
- **AI-infused** to accelerate productivity
- **Cloud-enabled** to enable development across the electronics design chain
- **Integrated** to support multi-discipline co-design
- **Secure** to protect critical IP and export compliance



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Thank You!

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