Realize
LIVE

Overview of Exhibits

Realize LIVE 2025, Detroit

1.1 Arc Boats

Arc Boat is a pioneering US-based startup headquartered in Los Angeles, dedicated to **revolutionizing the boating industry through electrification**. Founded in 2021, Arc Boat designs and manufactures high-performance **electric boats** aimed specifically at the water sports and recreational boating markets. Their flagship model, the **Arc One**, delivers both sustainable innovation and **exceptional performance**, redefining the boating experience.

Customer Challenges

- **Environmental Pressure**: Increasing regulations and restrictions on gas-powered boats due to environmental concerns have driven demand for reliable, efficient, and sustainable electric alternatives.
- **Performance Expectations**: Electric boats must match or surpass the capabilities of traditional gas-powered boats, particularly for high-demand activities such as water skiing, wakeboarding, and recreational cruising.
- **Technical Complexity**: Developing a competitive electric boat required complex hull design from scratch, efficient packaging of electric propulsion systems and effective thermal management to maintain battery performance and durability.

Siemens Solution

- **NX CAD**: Enabled fast, precise design iterations for efficient hull and propulsion integration
- **Simcenter with Star-CCM+** and **FENAO**: Provided advanced simulations for thermal, fluid and structural analysis enhancing reliability and performance
- **Teamcenter**: Centralized platform improving collaboration, engineering alignment and workflow management.

Customer Benefits

- **Rapid Innovation**: Accelerated development cycles allowed Arc Boat to quickly iterate on designs, bringing advanced electric boats to market faster.
- **Enhanced Efficiency and Reliability**: Improved integration between design, simulation, and manufacturing processes resulted in high-quality, reliable products that exceed traditional performance benchmarks for electric boats.
- **Sustainability Leadership**: Arc Boat's innovative approach has positioned the company at the forefront of sustainable boating, significantly reducing emissions and providing a cleaner and quieter boating experience.

Next Steps

Looking forward, Arc Boat plans to:

- **Expand production capacity** to meet increasing demand
- **Optimize supply chain** processes using **Siemens Teamcenter**
- **Continue innovating** through Siemens NX and simulation solutions, driving further performance enhancements and sustainability improvements

Short Summary

Arc Boat, a Los Angeles-based startup, is **transforming the boating industry with high-performance electric boats**, addressing environmental pressures and performance expectations. Faced with challenges like regulatory demands and technical complexities, Arc Boat leveraged Siemens' solutions, including **NX CAD, Simcenter, and Teamcenter**, to streamline design and production. Siemens' technology **facilitated rapid innovation cycles, enhanced efficiency** and established Arc Boat as a leader in sustainable boating, delivering reliable products that surpass traditional performance benchmarks. Looking ahead, Arc Boat aims **to expand production and optimize supply chain processes with Siemens**, continuing to improve performance and sustainability in electric boating.

1.2 Workhorse

Workhorse Group Inc is an American manufacturer of **electric trucks** and a pioneer **in zero-emission commercial vehicle innovation**. As a technology company, Workhorse designs and manufactures class 4, 5, and 6 electric trucks, showcasing the **W56 electric step van** as their flagship product. Prominently positioned in the electric vehicle industry, they drive **sustainable alternatives for the logistics sector**.

Customer Challenges

- **Time Pressure**: To maintain their spearhead position amid intense industry dynamics, Workhorse urgently needed to debut their groundbreaking W56 model, aiming for swift innovation that secures both market leadership and competitive advantage.
- **Integration Challenges**: There was a marked inefficiency due to the lack of seamless integration across design, engineering and manufacturing teams. This dissonance stifled cohesive workflow, ultimately leading to costly delays, which for a growing startup, were particularly detrimental.
- **Complex Product Development**: Managing Workhorse's meticulous BOM, comprising around 2,700 parts, required sophisticated change management processes to facilitate accurate and efficient part modifications, pivotal for the smooth and successful production cycles of their electric trucks.

Siemens Solution

- **Teamcenter X**: This cloud-based PLM software became crucial as a central repository for all product-related information. It streamlined communication and collaboration across more than 100 stakeholders actively involved in Workhorse's electric truck development process, thus promoting efficiency and cohesion.
- **NX Software**: By standardizing vehicle product engineering and manufacturing frameworks, NX eliminated inefficiencies inherent in a multi-CAD setup, thus driving operational efficiency and cost reduction.

Customer Benefits

- **Rapid solution implementation**: Leveraging on software-as-a-service (SaaS) solution significantly reduced the time. This solution empowered Workhorse Group to innovate quickly, ensuring they maintained their leadership position in the fast-paced electric vehicle market.
- **Enhanced Collaboration**: Bringing together disparate systems under a unified framework, Siemens' solution facilitated improved communication and sound decision-making processes across expansive domains, thereby knitting tighter collaboration and yielding timely results.
- **Efficient Change Management**: Optimized processes allowed for precise management of various part modifications, thereby ensuring adaptability and efficiency.

Next Steps

- Workhorse is set to leverage ongoing support from Siemens to ignite **further sustainable innovation**
- Implementing **Siemens Configurator** to support more **complex product variants**
- Using **Teamcenter X supply chain modules** to improve **supplier visibility**
- Leveraging the software as a **scalable solution** for future products and configurations

Short Summary

Workhorse Group Inc., a leader in **electric truck manufacturing**, collaborates with Siemens to enhance its product development and manufacturing processes. By employing Siemens' **Teamcenter X and NX solutions**, Workhorse overcame challenges such as **time pressure, integration inefficiencies, and complex product development**. The cloud-based PLM and standardized CAD frameworks streamlined communication among over 100 stakeholders, **reducing development time and fostering collaboration**. This partnership reduced costs, with **savings of over US$120,000 annually**, by simplifying BOM and change management. As a sustainable digital enterprise, Workhorse continues to innovate, optimizing its vehicle design, reliability, safety, and performance through Siemens' scalable solutions.

1.3 BAC

Briggs Automotive Company, widely recognized as BAC, is a specialized British manufacturer renowned for its **high-performance sports cars**, known for innovative design, advanced engineering, and customization. Through its partnership with Siemens, BAC transforms product development, manufacturing processes and achieves **exceptional standards in automotive performance**. Operating in a niche and highly competitive sector, BAC continuously drives innovation while meeting exacting engineering requirements, focusing on bespoke vehicles and maintaining **top-tier quality** within a low-volume production model.

Customer Challenges

- **Complex Design Understanding**: With unique and sophisticated vehicle designs, there was a need to clearly communicate design constraints and assembly requirements to stakeholders not typically engaged in CAD.
- **Stakeholder Engagement**: Ensuring active involvement from various teams, including remote workers and executives, was critical, yet challenging due to the lack of intuitive interaction platforms.
- **Seamless Transition to Immersive Technologies**: BAC aimed to incorporate XR solutions smoothly to enhance collaboration and design reviews, crucial for maintaining innovative edge.

Siemens Solution

- **NX CAD and Teamcenter for Precision Design**: By implementing Siemens' NX CAD and Teamcenter, BAC can digitally design, refine and manage vehicle models with precision. These tools empower the company to handle data efficiently, allowing for a reduction in physical prototypes and fostering faster customization and cost-effective development.
- **Interactive Digital Twin and High-Fidelity 3D Model Interaction**: Stakeholders interact with the digital twin of BAC's vehicles, enhancing assembly understanding and decision-making. Leveraging high-fidelity 3D visualizations within NX, designers can experience detailed and accurate models to streamline design processes.
- **Streamlined XR Integration**: Through Siemens' industrial software expertise and Sony's XR capabilities, BAC transitions into immersive environments with ease, facilitating collaboration across various locations and roles for enhanced innovation.

Customer Benefits

- **Enhanced Operational Efficiency**: There was a remarkable 30% reduction in the vehicle development cycle, significantly improving product quality and cost efficiency.
- **Cost Reduction and Prototyping**: By minimizing dependency on physical prototypes, BAC reduced costs associated with prototyping and rework, promoting faster project completion and greater customization flexibility.
- **Improved Customer Satisfaction and Manufacturing Standards**: Through consistently high manufacturing standards and enhanced customization options, BAC increased customer satisfaction, positioning itself as a leader in exclusive, high-performance automotive engineering.

Next Steps

Moving forward, **BAC**, as a **sustainable digital enterprise**, plans to deepen its collaboration with Siemens by integrating digital twin and simulation technologies. This ongoing partnership aims **to accelerate innovation**, boost agility in responding to customer demands, and solidify BAC's standing as a front-runner in **high-performance automotive engineering**. Together, BAC and Siemens redefine the automotive landscape by embracing cutting-edge technology for superior customization and performance.

Short Summary

Briggs Automotive Company (BAC), renowned for its **high-performance sports cars**, collaborates with Siemens to innovate and elevate its product development and manufacturing standards. Operating in a niche market, BAC faces challenges like the **need to accelerate bespoke vehicle development, manage complex product configurations and maintain quality in low-volume production**. Siemens offers solutions like **NX CAD** and **Teamcenter**, allowing BAC to design, refine, and manage vehicle models with precision, reducing reliance on physical prototypes. This partnership enhances BAC's operational efficiency, evidenced by **a 30% reduction in the vehicle development cycle** and improved customer satisfaction through higher manufacturing standards. Looking forward, BAC aims to deepen its integration of **Siemens' digital twin and simulation technologies**, fortifying its position as a leader in exclusive automotive engineering and driving continuous innovation.

1.4 Spinnova

A Finnish innovator in **sustainable materials**, has pioneered a patented process for producing textile fibers from **wood pulp and waste** completely free of harmful chemicals. The **SPINNOVA fiber is biodegradable, recyclable**, and manufactured using a mechanical process that **consumes 98% less water** and generates significantly **lower CO_2 emissions** compared to conventional fiber production. With a **strong commitment to circularity and the use of FSC-certified and waste-based raw materials,** Spinnova is redefining the future of textiles through scalable, eco-conscious manufacturing.

Customer Challenges

- **Environmental Impact of Traditional Fiber Production**: The textile sector is one of the most resource-intensive industries globally, contributing to 4% of CO_2 emissions and relying heavily on water and fossil-based materials.
- **Industrialization of Sustainable Innovation**: Transitioning from lab-scale innovation to full-scale fiber production required a partner with the digital expertise to support a flexible, scalable, and sustainable manufacturing model.
- **Need for Real-Time Visibility and Intelligent Automation**: To ensure consistent product quality and operational efficiency, Spinnova needed to integrate IT and OT, enabling live insights and precise control across their processes.

Siemens Solution

- **Automation & Execution**: Opcenter RD&L and Opcenter Execution enabled recipe and batch management across product development and production.
- **Integrated Engineering & Simulation**: Siemens Totally Integrated Automation portfolio, including TIA Portal, WinCC, PLCSIM Advanced, SIMIT and Simatic S7-1500 supported adaptive manufacturing, while Tecnomatix Plant Simulation facilitated layout validation and bottleneck analysis.
- **Digital Infrastructure & Edge Computing**: With Siemens Industrial Edge and cloud connectivity, Spinnova unified its IT/OT landscape to gather, process, and act on data in real time.
- **AI-Powered Engineering**: The Industrial Copilot for Engineering simplified automation development and allowed non-experts to participate in engineering workflows, accelerating deployment and improving code quality.
- **Cybersecurity by Design**: Siemens Industrial Cybersecurity solutions safeguarded Spinnova's proprietary processes, IP, and production data end to end.

Customer Benefits

- **Sustainability at Scale**: 98% less water, no microplastics, and zero harmful chemicals - enabling truly clean, industrial fiber production.
- **Faster Ramp-Up**: Digital twins and simulation cut commissioning time and enabled rapid scaling from R&D to production.
- **Smarter Operations**: Real-time IT/OT integration improved energy efficiency, uptime, and decision-making.

Next steps

Looking forward Spinnova plans to:

- **Cloud-Driven Scalability:** Spinnova will leverage data from pilot plants to optimize future production sites and enable real-time, data-informed decisions.
- **AI-Supported Automation**: The Industrial Copilot will further simplify engineering tasks and accelerate automation across all skill levels.
- **Real-Time Simulation & Optimization**: A live digital twin will support agile adaptation and testing without disrupting ongoing production.

Short Summary

Spinnova, a Finnish innovator in **sustainable materials**, transforms textile fiber production through a patented process utilizing **wood pulp and waste**, free from harmful chemicals. Facing challenges such as environmental impact, the transition from lab to industrial scale, and the need for real-time visibility, Spinnova deployed Siemens' technologies, including **Opcenter, TIA Portal**, and **Industrial Edge**, to facilitate adaptive manufacturing and intelligent automation. Siemens' solutions enabled Spinnova to achieve sustainable fiber production **with 98% less** water and zero microplastics. Spinnova's strategic partnership with Siemens optimizes production ramp-up and enhances operational efficiency. Looking ahead, Spinnova plans to leverage **cloud-driven scalability, AI-supported automation, and real-time Digital Twin simulation** for ongoing innovation and optimization.

1.5 Stoneridge

Stoneridge, Inc. is a global leader in designing and manufacturing **electrical and electronic systems** for the mobility sector, serving OEMs in automotive, commercial vehicles, off-highway and agricultural markets. In partnership with Siemens, the company is **scaling innovation** across eight global locations through the **Siemens Xcelerator platform**. Flagship programs include the third-generation **MirrorEye Camera Monitor System** and its latest tractor-to-trailer connectivity solution.

Customer Challenges

- **Accelerated Time-to-Market Pressure**: Delivering complex electronic systems faster required shorter development cycles and global rollout
- **Fragmented Tools & Manual Workflows**: Multiple ECAD platforms, lack of a global library and manual quoting processes hindered reuse, visibility and agility
- **Rising Regulatory Complexity**: Increasing demands around functional safety and cybersecurity required a scalable, integrated compliance approach

Siemens Solution

- **NX Software**: Provided a modern CAD environment with full integration to electronics and mechanical domains
- **Teamcenter PLM**: Enabled centralized lifecycle data, change management and cross-functional collaboration
- **System Modeling Workbench & Polarion**: Delivered model-based systems engineering and structured requirements traceability
- **Xpedition Enterprise, Valor, HyperLynx, EDM**: Standardized PCB design processes and enhanced ECAD data flow across global sites

Customer Benefits

- **25% Faster Development Cycles**: Streamlined cross-domain collaboration significantly accelerated product development
- **US$200,000+ in Annual Efficiency Gains**: Reduced rework and tool overhead through better reuse and automated workflows
- **Enhanced Compliance & Scalability**: Siemens Xcelerator enabled global rollout, improved traceability and readiness for future regulatory needs

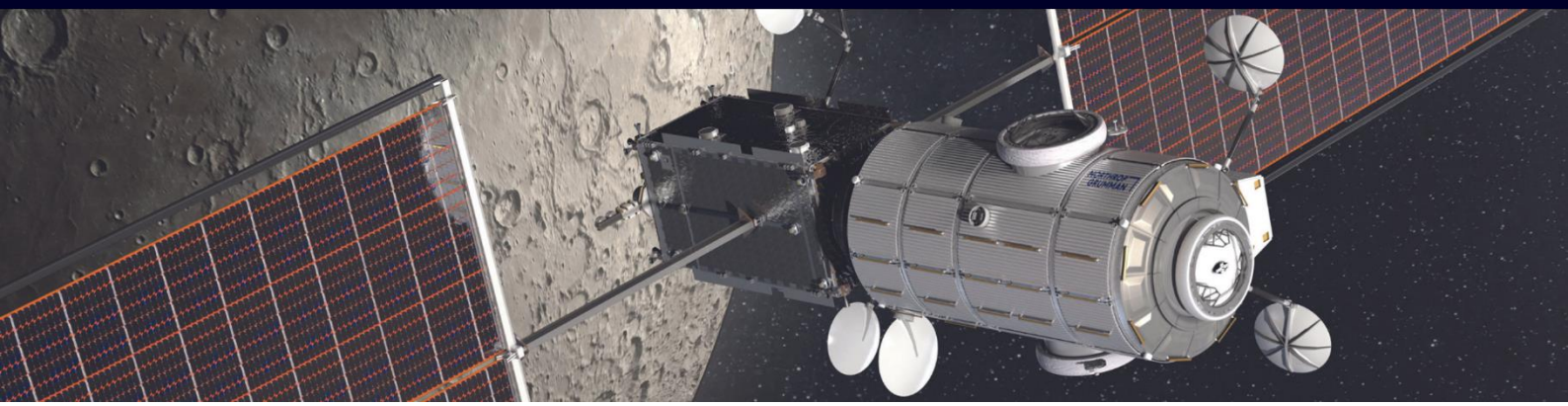
Next Steps

Stoneridge will continue driving digital innovation by:

- **Expanding Siemens Xcelerator** across new product lines and geographies
- **Leveraging digital twins** for real-time simulation and diagnostics
- **Extending model-based execution** and ECAD-MCAD integration
- **Partnering with Siemens** to address software-defined vehicle challenges and prepare for next-gen mobility platforms

Short Summary

Stoneridge, Inc., a global leader in **electronic systems for the mobility sector**, partners with Siemens to enhance innovation across its global locations through the **Siemens Xcelerator platform**. Faced with challenges like accelerated time-to-market, fragmented tools, and rising regulatory complexity, Stoneridge implemented a unified engineering foundation using Siemens solutions like **NX Software, Teamcenter, and Xpedition Enterprise**. This integration resulted in **25% faster development cycles** and **over US$200,000 in annual efficiency gains**, improving compliance and scalability. Stoneridge plans to expand the use of Siemens Xcelerator, leverage **digital twins** and tackle software-defined vehicle challenges for next-gen mobility platforms.



1.6 Northrop Grumman

Northrop Grumman is a leading global **aerospace and defense technology company** recognized for pioneering solutions in aircraft, spacecraft, autonomous systems and advanced defense electronics. Committed to innovation and operational excellence, Northrop Grumman leverages cutting-edge technologies to **address complex challenges** and **enhance security worldwide**.

Customer Challenges

- **Mission-Critical Development Cycles**: Accelerating the development of space systems for lunar and deep-space missions with zero tolerance for failure post-launch
- **Complex System Integration and Disconnected Processes**: Ensuring smooth collaboration and data flow across global teams while maintaining quality and compliance
- **High-Fidelity Simulation and Testing**: Need to simulate extreme thermal, dynamic and mechanical environments to ensure spacecraft survivability

Siemens Solution

- **Simcenter**: Enabled real-time design space exploration, thermal, structural, and vibroacoustic simulation with a closed feedback loop to physical testing, reducing analysis time by up to 50%
- **HEEDS**: Used for design of experiments (DoE) to rapidly evaluate and optimize satellite subsystems and system-level tradeoffs
- **Teamcenter Simulation**: Anchored a robust digital thread, managing simulation data and system model fidelity across multidisciplinary teams
- **NX CAD**: Provided a high-performance platform for 3D modeling and product definition, integrated with simulation and downstream manufacturing
- **Easy Plan with Assembly PMI**: Supported a model-based manufacturing strategy to visualize and manage product and process data on the shop floor

Customer Benefits

- **Accelerated Development**: Simcenter and HEEDS reduced analysis time by 30-50%, enabling faster design cycles aligned with deep-space mission timelines.
- **Streamlined Execution**: Easy Plan and PMI enhanced collaboration and consistency across global manufacturing sites.
- **Improved Performance**: Digital twin-driven validation increased design accuracy and cut launch system weight by 25%, boosting reliability in extreme conditions.

Next Steps

In alignment with its innovation roadmap, Northrop Grumman will:

- Scale the use of **HEEDS** and **Simcenter** tools for future lunar and Mars exploration missions
- Deepen integration of **digital twins** to support **real-time mission analysis** and **operational decision-making**
- Extend **Easy Plan** with **PMI visualization** across additional domains to drive **model-based execution**
- Continue joint innovation with **Siemens** to evolve a **unified digital thread** supporting agile, collaborative, and **sustainable space system development**

Short Summary

Northrop Grumman, a leader in **aerospace and defense technology**, collaborates with Siemens to address critical challenges in mission-critical development cycles, complex system integration and high-fidelity testing. Utilizing Siemens' comprehensive suite, including **Simcenter, HEEDS, Teamcenter Simulation, and NX CAD**, Northrop Grumman creates a connected digital thread to accelerate development, enhance collaboration and improve performance. The implementation **reduced analysis time by 30-50%** and **cut launch system weight by 25%,** boosting reliability for space missions. Looking forward, Northrop Grumman plans to scale these tools for future lunar and Mars explorations while deepening **digital twin integration** and expanding model-based execution for **sustainable development**.