Capital
Siemens model-based E/E systems development solution

Capital is a comprehensive software suite that enables the engineering of E/E systems for large platforms such as cars, aircraft, and sophisticated machines. These platforms have substantial and increasing electronic content, which is dependent upon complex electrical distribution systems to function.

Modern E/E systems are characterized by a huge growth in complexity and depend on integrated electrical, electronic, and software systems for innovation while demanding robust verification and traceability. Many industries suffer from outdated, disconnected, and siloed product development methods. Companies are looking for new product development processes and tools that enable them to blur these boundaries across domains and through the product life cycle. To address these challenges Siemens has developed Capital, a comprehensive E/E systems development solution to efficiently engineer today's smart products. It covers the design, manufacture, and service of electrical systems as well as encompassing E/E system and software architectures, network communications, and embedded software development.

E/E Systems Definition & Optimization

Optimize electrical and electronic (E/E) architectures against targets such as cost, weight, and bandwidth. Define and consolidate functions. Create and analyze electrical, electronic, embedded software, and network specifications. Re-use design data to create technical publications, document design changes, and enable electrical diagnostics and troubleshooting.

Electrical Systems Engineering

Capital supports both the traditional interactive design approach and state-of-the-art generative design enabling best-in-class efficiency and quality. stages, the designs can be assessed for their efficacy and validated against requirements ensuring companies deliver the best products possible. At all stages, the designs can be assessed for their efficacy and validated against requirements ensuring companies deliver the best products possible.

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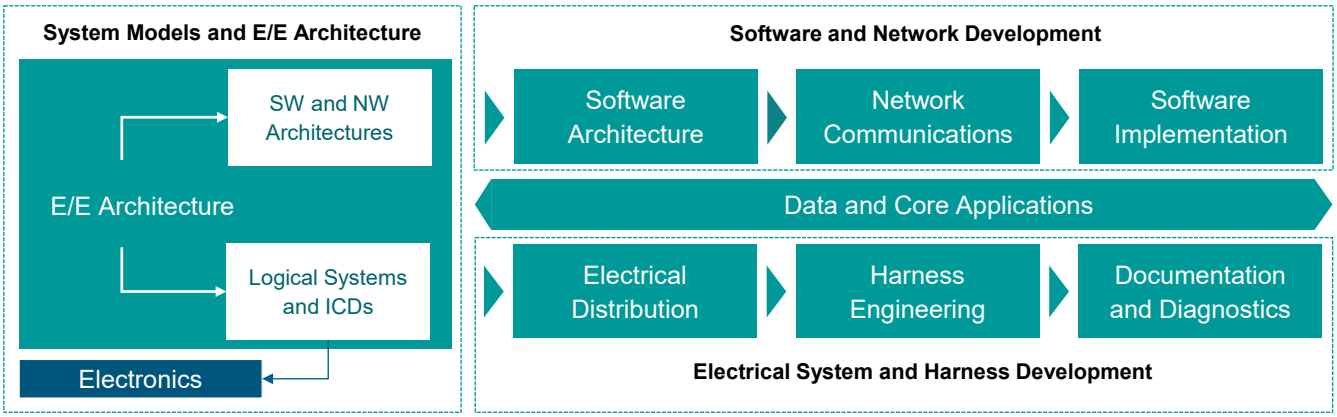

Wire Harness Design & Engineering

The manufacture of wiring harnesses is a hugely competitive industry facing shorter program launch cycles and increasing price pressure, coupled with increasing product and configuration complexity. To overcome these challenges companies are looking to reduce new product introduction times by leveraging digital data continuity and IP reuse.

They need to optimize designs and improve product quality by applying automation and simulation, as well as improve efficiency by equipping people with the best in class technology. Capital helps harness manufacturers do all this and more.

Wire Harness Manufacturing Engineering

The success of harness manufacturers is dependent upon their ability to accurately design, optimize and cost the manufacturing processes, labor, material, and resources required to produce harnesses. Capital contributes to an optimized digital twin comprising a validated harness model and a digitalized manufacturing process model. This can be leveraged to transform a company's engineering, costing, and manufacturing performance ultimately boosting profits.

E/E Data Management & Integrations

Manage data, control processes, and use integrations to provide a comprehensive development flow. Manage changes and configurations, both between domains within the product development process and with all major MCAD and PLM tools.

Electrical Document Publication & Use

Re-use design data to create technical publications, document design changes, and enable electrical diagnostics and troubleshooting. Automate publication tasks such as wiring diagram repartitioning and graphics styling with multi language support.

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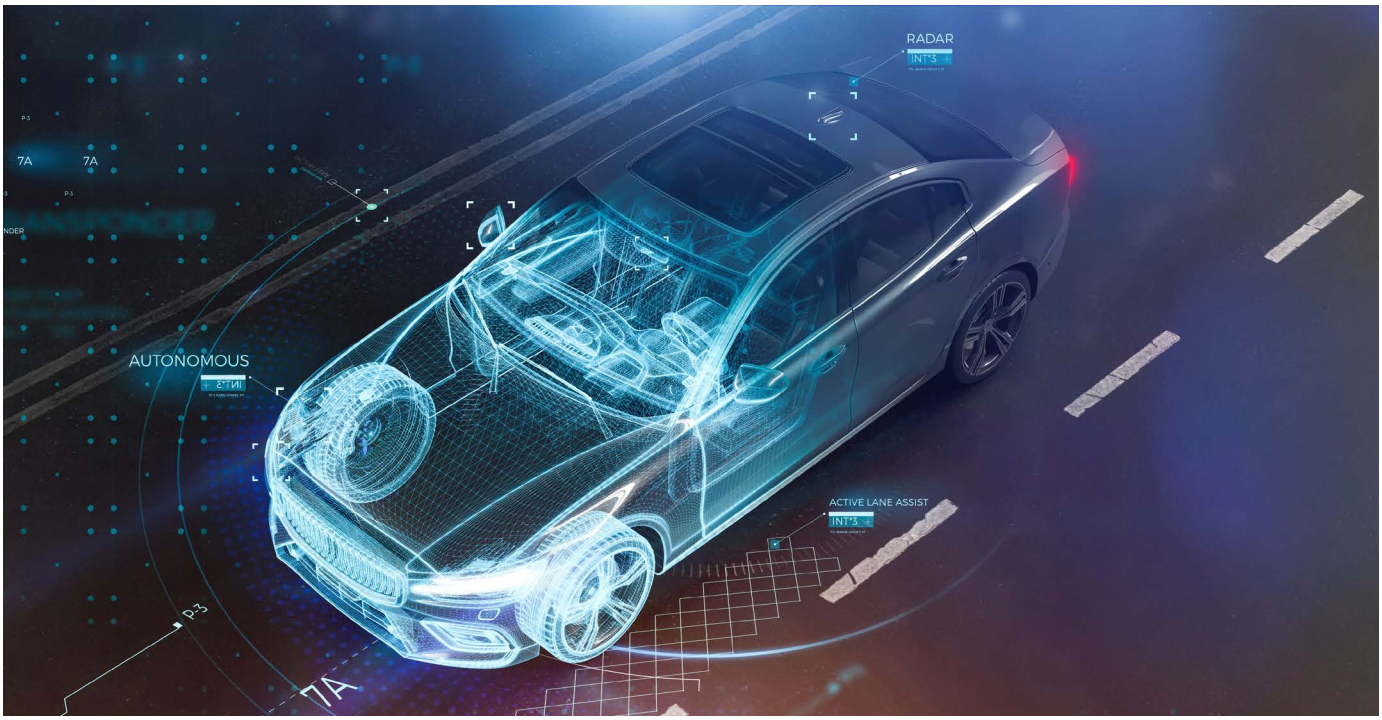

Embedded Software Implementation

Embedded software teams need to rapidly and efficiently develop and deploy software for automotive electronic control units (ECUs) to deliver in-vehicle features and functionality. The AUTOSAR standard is the framework to enable this efficient development of embedded application software in the context of vehicle system development. Capital VSTAR enhances the AUTOSAR standard while also satisfying cybersecurity and functional safety requirements, and is confirmed to support ISO 26262 ASIL D use cases.

Embedded Software Design

Effectively design, test, and deploy on-board software by following a model-based approach in a common environment for system and software engineers. Develop accurate, verified software architectures. Design, simulate, implement, and verify software components. Connect the elements of your embedded software design processes and avoid rework costs by detecting errors early in the process. An architecture-centric approach allows you to define, enrich, analyze and simulate onboard software designs.

Network Design

Networks are a critical aspect of all modern vehicles and their design is interwoven with the design of embedded software and the electrical distribution system. New vehicle technologies require more complex network topologies to manage a significantly higher data throughput with more stringent constraints on timing. This requires an integrated, whole vehicle approach.

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