

CAPITAL WIRE HARNESS MANUFACTURING

The platform for designing, manufacturing, and documenting complex wire harnesses

Capital is Siemens' solution for the digitalized design and manufacturing of electrical harnesses, built to address the challenges of growing complexity and product customization. A single platform connects electrical engineering, layout, documentation, and manufacturing processes.

Through automated workflows, centralized libraries, and integrated validation tools, Capital reduces design errors, accelerates wire harness industrialization, and ensures consistency between development and production phases—even in high-variability environments.

Why choose Capital?

From design to production, everything is connected

Capital natively links electrical design, harness engineering, manufacturing planning, and technical documentation, ensuring a seamless and coherent workflow.

Smart complexity management

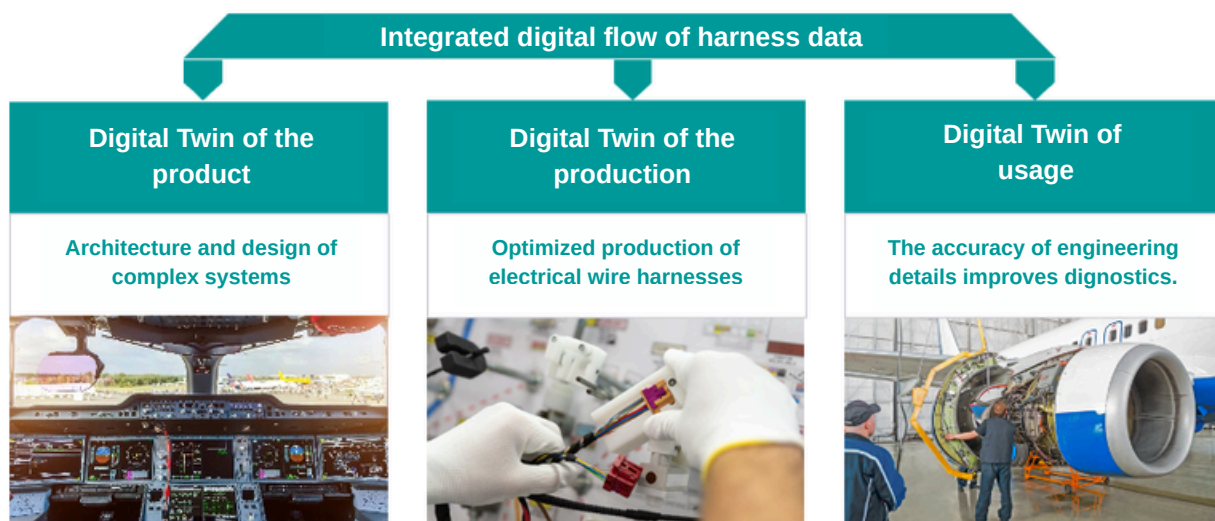
Supports multiple configurations, product variants, and frequent updates with advanced automation tools and engineering rule checks—drastically reducing errors and rework times.

Centralized libraries, standards, and validation

Shared, certifiable libraries ensure component quality, facilitate standardization, and simplify audits and compliance verification.

Reduced production time and costs

With automatic generation of manufacturing documentation and integrated simulation, Capital shortens development cycles and lowers operational costs caused by errors, delays, and waste.



The diagram illustrates the integrated digital flow of harness data throughout the product lifecycle: from the Product Digital Twin (design phase), to the Production Digital Twin (physical harness build), to the Usage Digital Twin (maintenance and diagnostics). A digital continuity that improves efficiency, quality, and traceability.

Capital's operational value for harness engineering



For designers: consistent and automated design

Capital streamlines the creation of complex electrical architectures through advanced functional, topological, and logical design tools. It automatically verifies engineering rules, prevents errors, and generates coherent schematics, optimizing quality from the earliest stages. Design changes propagate throughout the process thanks to digital continuity.



For manufacturing engineering: data ready for production

With Capital, technical data is automatically transformed into manufacturing instructions, documentation, BOMs, and 3D harness models. The digitalized flow from engineering to the shop floor drastically reduces industrialization time, simplifies variant management, and ensures that each harness is built according to specifications



For quality and compliance: standards under control

Capital's centralized libraries and complete revision traceability simplify compliance with industry standards (aerospace, automotive, railway). Every change is documented, verifiable, and auditable. Integrated simulation tools validate for interference, overload, and electrical compliance—before production begins.



For management: enhanced efficiency and competitiveness

Capital enables faster, more accurate, and collaborative harness process management. It reduces costs related to errors, rework, and waste. The digital thread—from design to after-sales—improves time-to-market, makes processes scalable, and strengthens competitive differentiation in complex markets.