SIEMENS

quality

SIEMENS TEAMCENTER X QUALITY

Mastering quality to improve electronics lifecycle management

siemens.com/teamcenterquality

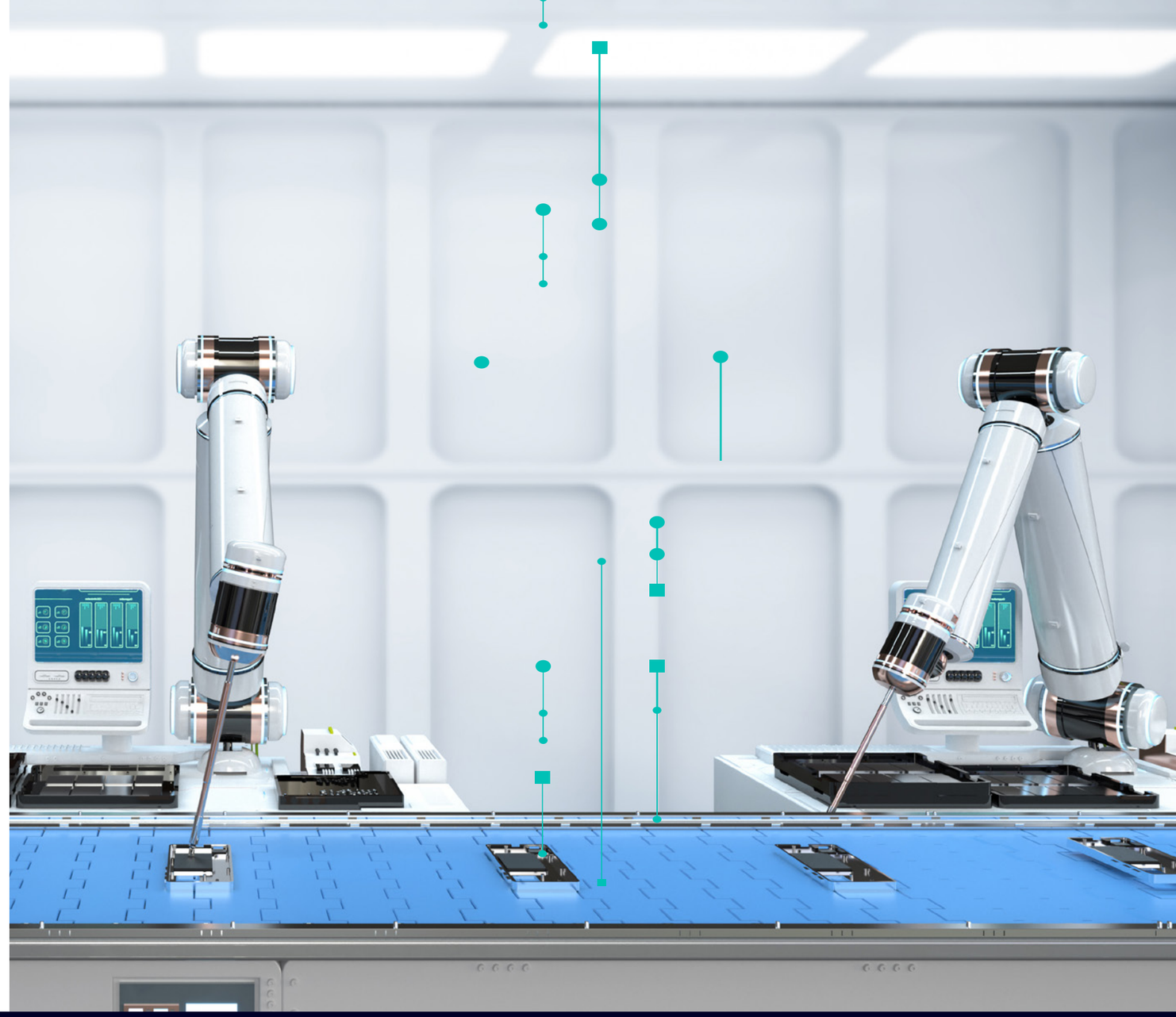
Trends shaping the electronics industry

More products than ever before contain electronics. With growth in all types of industries from mobility to augmented reality (AR) and virtual reality (VR), business opportunities are at an all-time high for electronics manufacturers.

However, such demand for more complex products brings new challenges, supply chain uncertainty, product shortages, quality and compliance issues, and security and traceability concerns, all of which are leading electronics manufacturers to rethink their development processes, systems, partners and technology.

As innovation outpaces traditional development methods, companies need improved ways to manage product data, programs, requirements and quality. Failure to do so results in delays, rising costs and customers that lose trust in the brand.

By embracing a digital approach with an integrated product lifecycle and quality management solution, companies are better prepared to fully understand customer needs, foster teamwork, streamline processes and better meet industry standards. This enables them to orchestrate a seamless, customer-centric journey from concept to production and introduce new products more efficiently, on time and on budget.



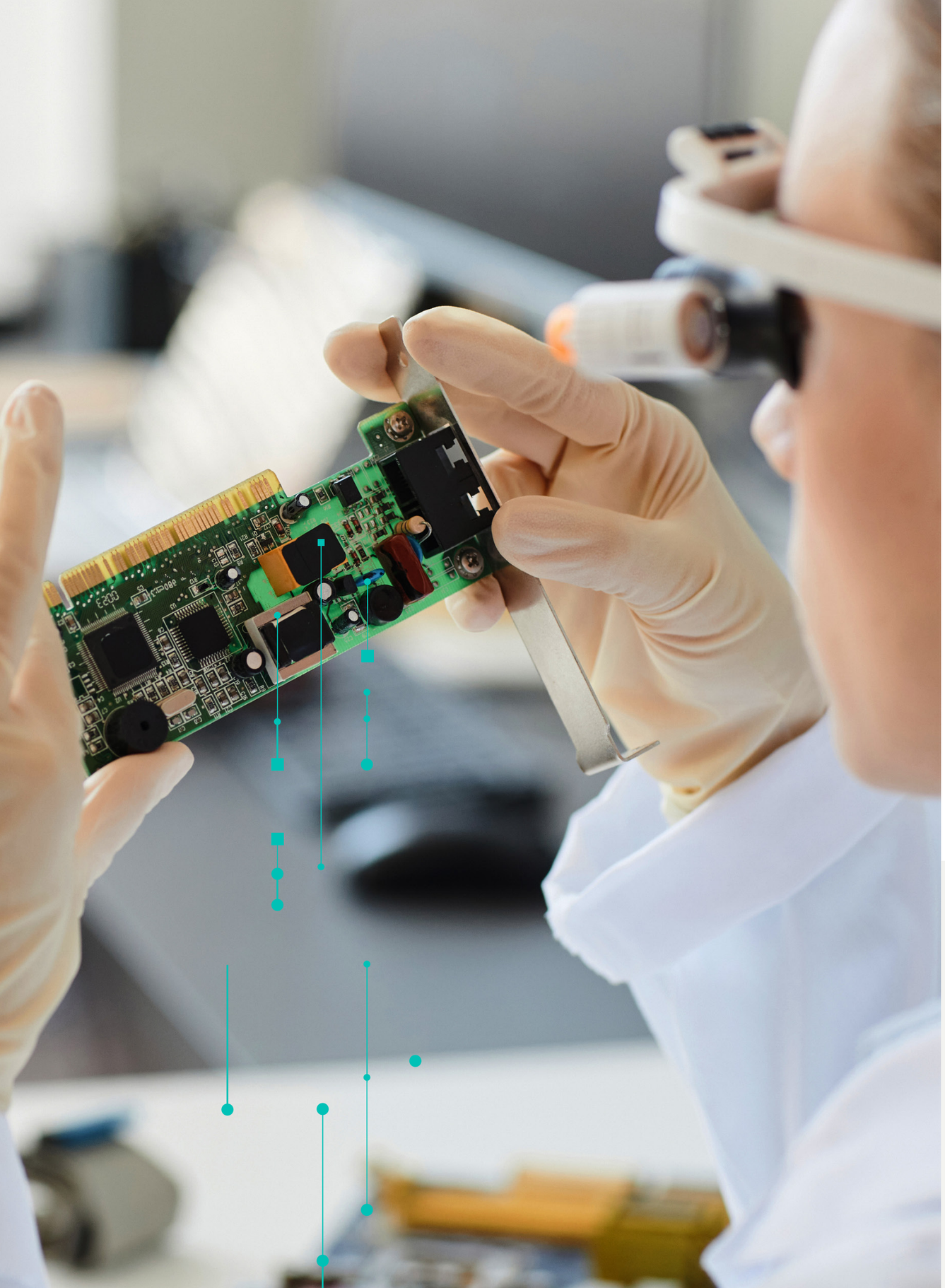
Key drivers

Data management: Growing complexity demands streamlined data management to handle increasing amounts of electronic, mechanical, software and simulation data and offer a unified view to integrate systems.

Digitalization: Products are becoming smarter, and developing intellligence drives a need for smarter solutions and a digital transformation that enables teams to start and stay integrated across the product lifecycle.

Accelerating product development: To react faster to a changing market and reduce time-to-market, companies need to break down silos across disciplines.

Supply chains and sustainability: To develop high-quality, safe, sustainable products and improve resilience, companies must consider supply chain constraints starting in the design phase.



Boosting quality across the entire lifecycle

To stay at the forefront of innovation as the market evolves, electronics manufacturers know they must be more agile. This requires new strategies to accelerate product introductions and gain a competitive edge.

However, many still rely on legacy systems, meaning key design, engineering, quality and manufacturing functions are disconnected. This makes it increasingly difficult for teams to collaborate securely and share information efficiently while also posing important security risks. Such outdated systems fall short of handling the complexity, pace and quality management needs of today's products. Tomorrow, the gap will be even bigger.

Now more than ever, quality is critical at every stage of the product lifecycle. Customers demand zero defects while also increasing the pressure for faster new product introduction (NPI) times.

So how can electronics manufacturers guarantee quality while accelerating delivery of next generation product lines?

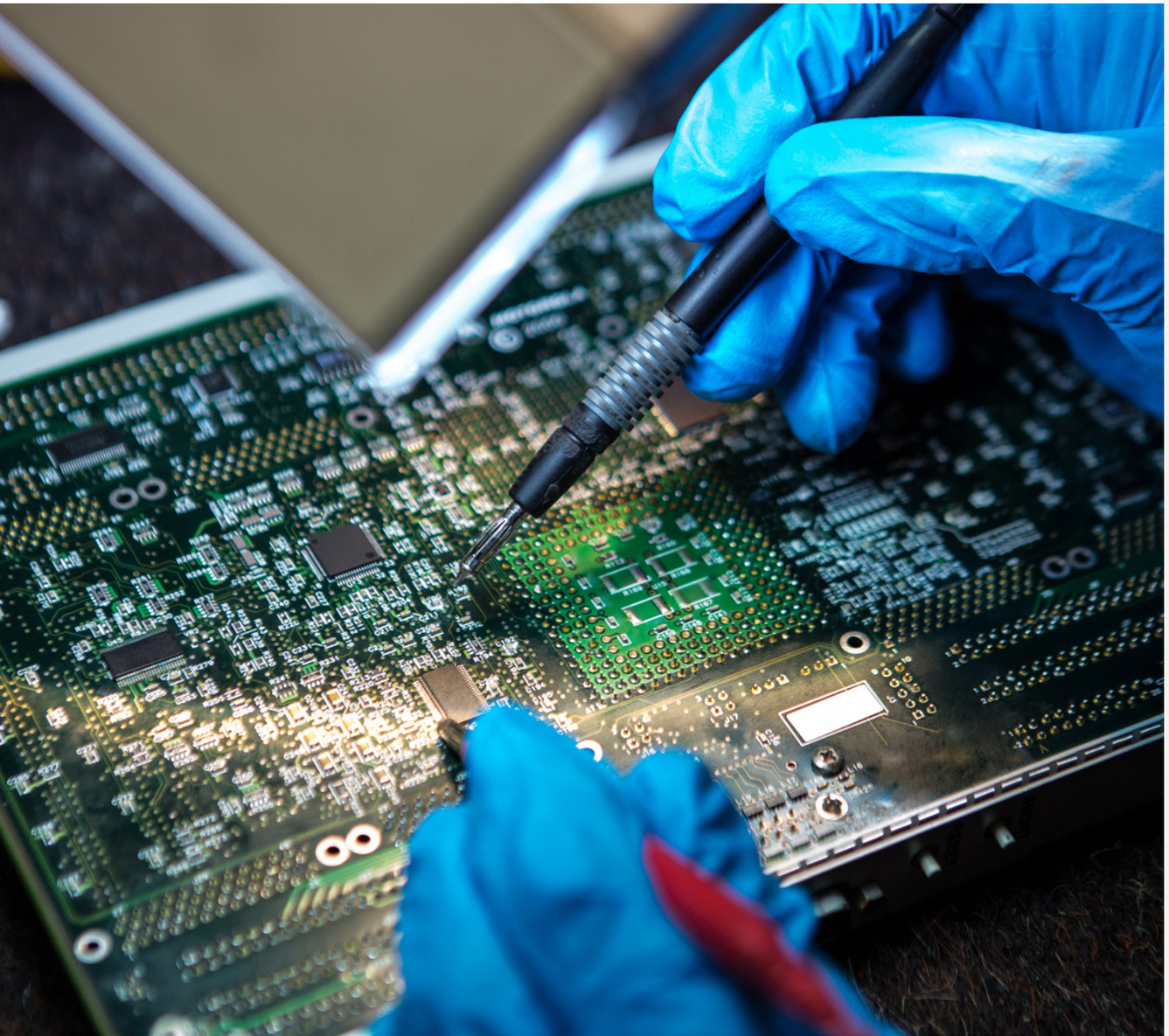
Using an end-to-end digital approach helps companies deliver devices with the highest level of initial quality and streamline the value chain. By unifying product lifecycle management (PLM) and quality management systems (QMS) into a single platform, you can benefit from seamless collaboration, elevate quality and reduce time-to-market.

Adopting a single platform for PLM and QMS enables electronics manufacturers to:

- Reduce development cycle times and poor quality costs
- Boost collaboration by sharing insights throughout the value chain
- Mitigate risks using optimized and paperless processes to provide greater transparency
- Deliver sustainable products that comply with regulations

Leverage quality data to make **smarter decisions**

Engineering and quality teams must work together to achieve superior quality management and new levels of innovation. To achieve this, it is essential to treat quality as an integral domain from the earliest stages of product development and extend the conventional quality cycle to make more informed decisions.



How to bring high-quality innovation to the market faster:

Digital continuity

By adopting a robust collaborative environment with continually updated data management, you can ensure data integrity and overcome the fragmentation that inhibits innovation. A native QMS on a PLM platform enables you to break down silos and improve knowledge sharing and collaboration across domains and throughout the value chain, offering a single source of truth for all key stakeholders to reduce cost and ensure faster time-to-market.

Closed-loop quality

Adopting a closed-loop approach to quality offers you access to consistent data across domains and throughout the product lifecycle. This continual feedback on quality performance data enables you to identify potential issues earlier, reducing the time, effort and cost associated with production launch and ramp-up. A closed-loop quality solution enables a unified approach to quality, which helps you to avoid replicating or losing data between departments, plants and suppliers.

Design for quality

By documenting information once and reusing it everywhere throughout development, you can design for quality and support engineering processes from simulation to final inspection. A closed loop means that teams can incorporate manufacturing and process information during the design phase to streamline workflows, accelerate change management and minimize errors in quality planning.

Minimize risk with digital twin technology

Comprehensive digital twin technology provides a highly accurate virtual model of your physical processes to minimize defects, scrap and the risk of reputational damage associated with product recall. A digital twin allows you to simulate and validate complex designs and solve problems virtually to avoid discovering them later on the manufacturing floor, enabling you to achieve first-time-right products and ongoing improvement.

Digital transformation relies heavily on connecting quality information to the digital twin throughout the product lifecycle. This approach ensures the maintenance of high-quality standards and drives excellence across the entire value chain. The value chain encompasses all activities and processes in bringing a product from conception to end of life, emphasizing value delivery to customers and stakeholders at every stage.

Managing processes with **Teamcenter X Quality**

Teamcenter® X Quality software, which is part of the Siemens Xcelerator business platform of software, hardware and services, helps you meet the highest quality standards and deliver advanced electronic devices. This comprehensive digital solution offers a single source of truth to manage complexity and achieve the highest quality standards throughout the product lifecycle.

With Teamcenter X Quality, you can leverage:

- **Quality project management**
  Deliver projects on time and of the right quality by setting and monitoring quality milestones plus related deliverable items
- **Failure mode and effects analysis (FMEA)**
  Evaluate product design and process operations to identify and assess potential risks in the early design and development phases
- **Inspection planning**
  Identify all relevant quality and functional characteristics of manufactured devices to be controlled and prevent defects, confirm sustainability and compliance
- **Quality issue management and problem solving**
  Investigate, analyze and resolve quality issues with a systematic approach covering the eight disciplines (8D)
- **Quality action management**
  Create, perform and complete quality actions by monitoring due dates and reporting results in dashboards
- **Audit and assessment**
  Plan, administer and analyze audit results to identify key risk factors, mitigate negative impacts and eliminate redundant activities to streamline processes

Our quality management solution is available both on-premises and in the cloud. With preconfigured quality best practices, using Teamcenter X Quality helps you realize value from the start of your project.

You'll benefit from automatic product improvement updates to have the latest technology working for you. Our user-friendly interface makes it easy to manage quality and compliance processes to get your innovative products to market faster.





About Siemens Digital Industries Software

Siemens Digital Industries Software helps organizations of all sizes digitally transform using software, hardware and services from the Siemens Xcelerator business platform. Siemens' software and the comprehensive digital twin enable companies to optimize their design, engineering and manufacturing processes to turn today's ideas into the sustainable products of the future. From chips to entire systems, from product to process, across all industries, Siemens Digital Industries Software – Accelerating transformation.

For more information on Siemens Digital Industries Software, visit siemens.com or follow us on LinkedIn and X.

Headquarters: +1 972 987 3000
Americas: +1 314 264 8499
EMEA: +44 (0) 1276 413200
Asia-Pacific: +852 2230 3333

© Siemens 2024. A list of relevant Siemens trademarks can be found here.

Other trademarks belong to their respective owners.

85947-D1 4/24 OW