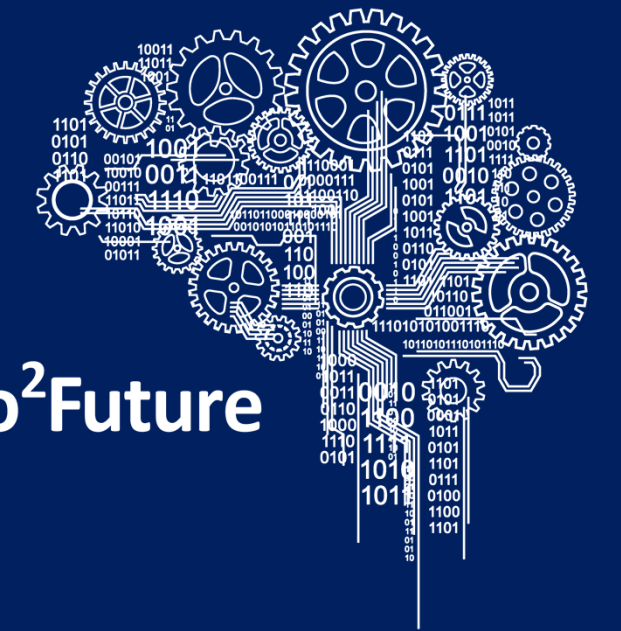


DIGITAL TWIN – VIRTUAL COMMISSIONING

Digital Twin enabled Commissioning and Testing of Future Failsafe Automation Systems



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MOTIVATION & GOALS

Due to the complexity of automation systems, a great deal of on-site engineering is often required during installation, commissioning, and maintenance. The digital twin emerges as new approach that allows engineers to remotely design, install, and maintain automation systems that comply with defined standards and regulations without hardware equipment.

The goal is to reduce commissioning and maintenance time while maintaining consistency of the system and its features (e.g., safety).
Strategic goal (long-term): Identify technologies that could become the main drivers of industrial and process automation in the coming years.



Project FactBox

Project Name TWIN-Solution
Project ID MFP II 4.1.2.2
Duration 36 Months

Area 4.1
Cognitive Products

Project Lead
Dr. Konrad Diwold

APPROACH

- Getting familiar with **Siemens' fail-safe devices** and their functionalities.
- Use current Siemens' virtual portfolio as the starting point (PLCSIM Advanced v3.0, SIMIT tool, etc.) for developments.
- Incorporate **norms & regulations** as **guidelines**.
- Develop** digital **twins** for different failsafe devices / systems.
- Demonstrate** the applicability of digital twins to speed up development, testing, certification and deployment.

CONTRIBUTION

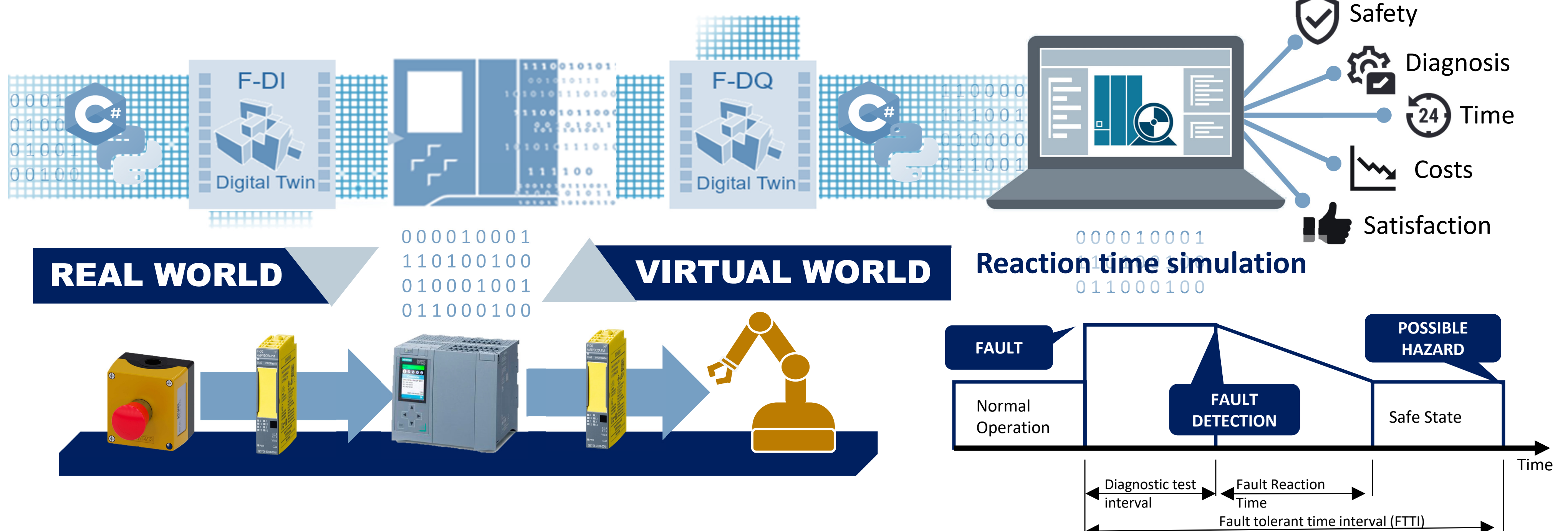
Scientific contribution

Research a new approach to industrial automation, which allows for data acquisition, testing and deployment without hardware. Come forward with new approaches for development, testing certification and commissioning of future industrial automation systems.

Economic contribution

Enable fast testing and certification thus reducing risks in and speeding up the development phase. Enable pre-test and preconfigure of automation solution for deployment to foster fast, cost-effective, and remote deployment procedures.

DIGITAL TWIN OF THE SAFETY LOOP



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