Innovative automation devices by means of Industrial IT

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InnovIIT - Innovative automation devices by means of Industrial IT

- One of 34 Innovation Projects in the Leading Edge Cluster it's OWL

- **Main Goal:**
  Development of a Modeling and Simulation Approach for
  the Engineering of Distributed Intelligent Automation Devices

- **Project Partners:**

  - Institute Industrial IT (inIT) of Ostwestfalen-Lippe University of Applied Sciences,
    Embedded Software Engineering Group of Prof. Dr. Oliver Niggemann

  - Weidmüller Interface GmbH & Co. KG
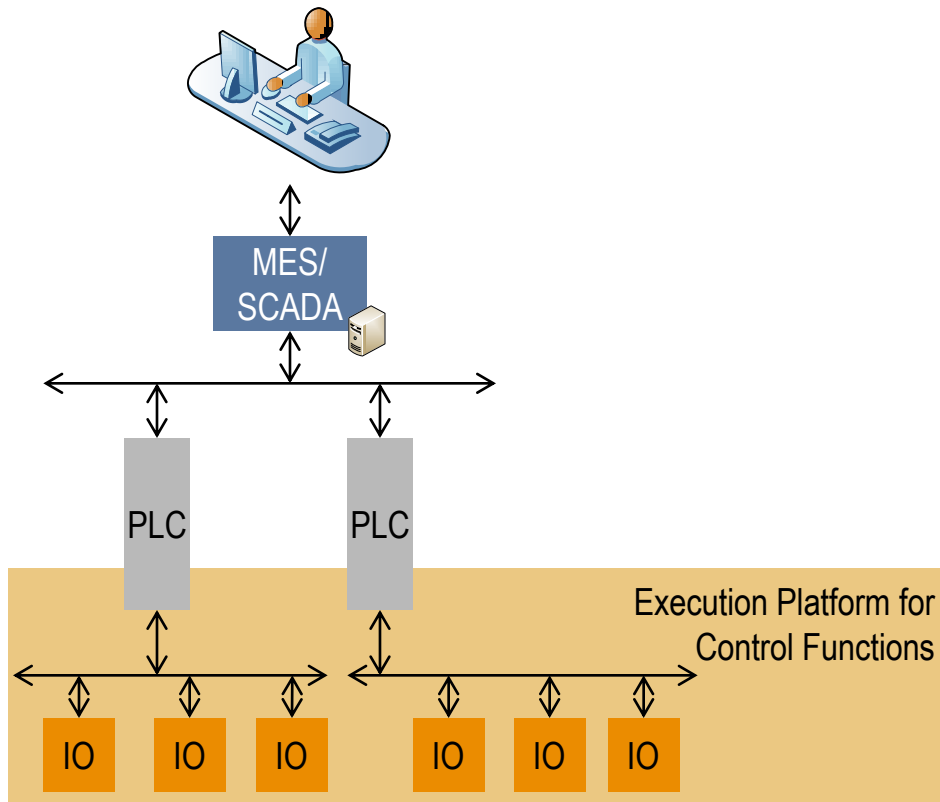
Trend towards IT-based Distributed Intelligence
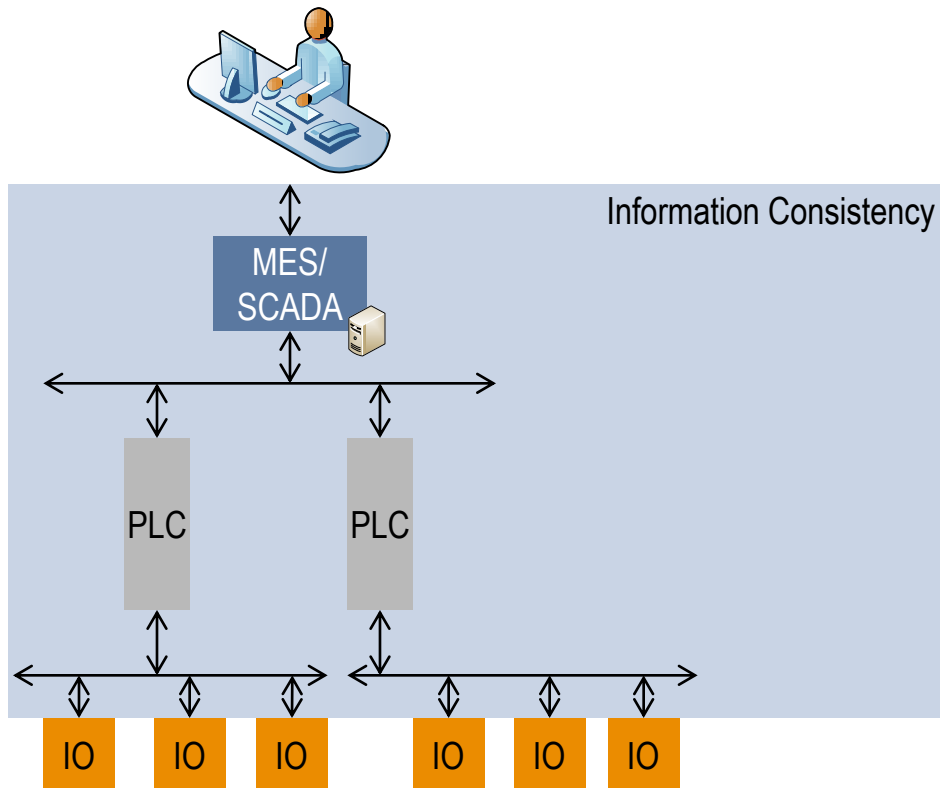
Information Consistency

Information Consistency

The IT-based communication enables information consistency from office to automation devices.

→ **Condition Monitoring and Life Cycle Management**

Trend towards IT-based Distributed Intelligence

MES/SCADA

PLC   PLC

Execution Platform for Control Functions

IO IO IO   IO IO IO

Information Consistency

The IT-based communication enables information consistency from office to automation devices.

→ **Condition Monitoring and Life Cycle Management**

Function Integration

The integration of information processing capabilities enables shift from single processing unit to distributed intelligent systems.

→ **Adaptable Automation Systems**

Challenges

- Standards such as IEC61131-3 are geared towards a single processing unit (PLC) and do not support distributed processing units

- Cross communication is needed to exchange process relevant data between processing units

- Design effort to implement control functions grows with the number of processing units

- Verification of cuncurrently executing processing units is difficult and requires deep knowledge of the process communication

→ **Need for engineering tools that ease the design and verification of distributed intelligent automation systems**

InnovIIT – Project Goals

- Model-driven simulation to verify functionality and communication before commitioning

- Data exchange between engineering tool and simulation framework (AutomationML)

- Focus on communication aspects such as cross communication and data transparency
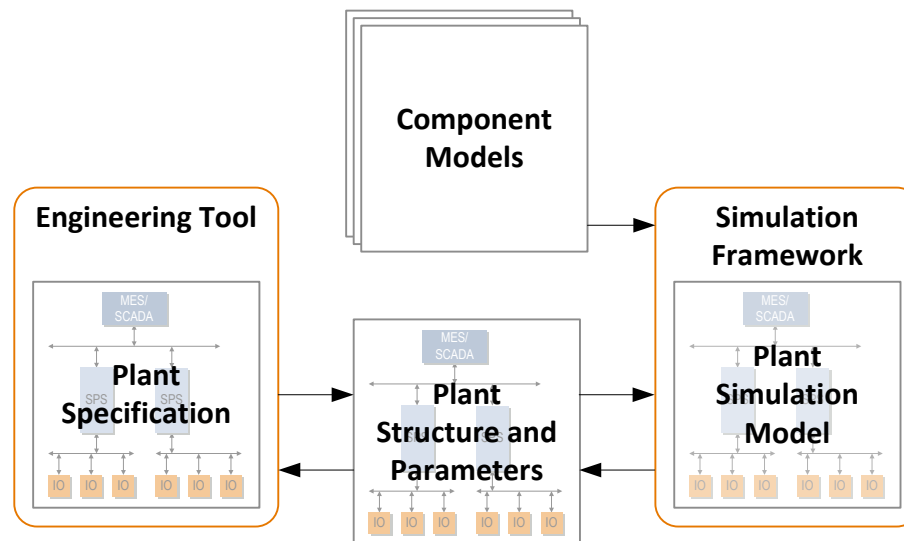
Thank you for your attention!

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