

Multi-Domain Model-Driven Design of Industrial Automation and Control Systems

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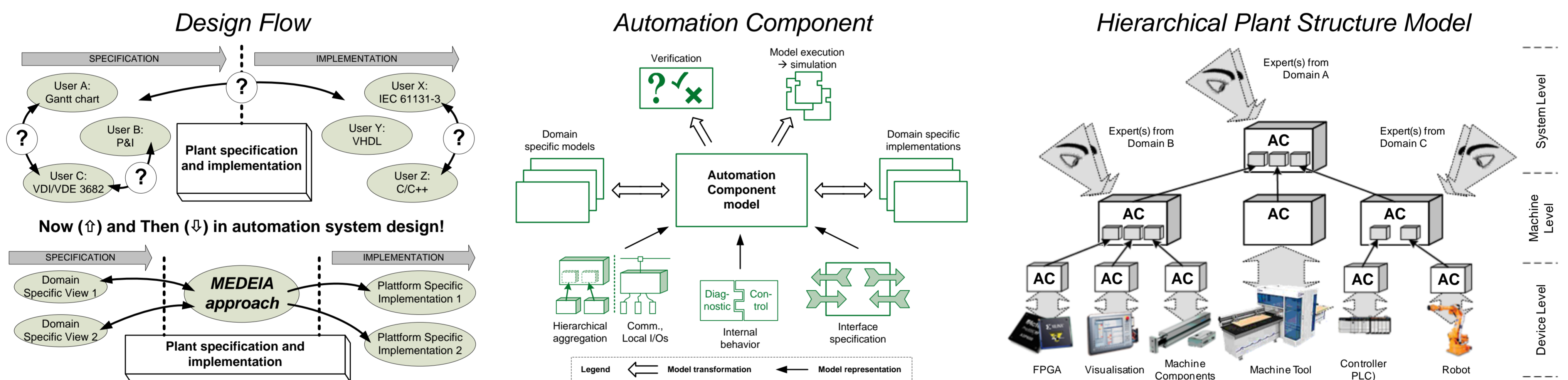
Motivation and Vision

- The level of automation and system complexity in factories and plants increases steadily which results in difficult and less-productive system engineering
- A lot of (intelligent) sensors or actuators have to be combined via automation and control systems
- The vision of the MEDEIA project is to radically improve the development productivity of embedded control systems for the European industrial automation sector
- The project results will reduce their system design time significantly

Project Objectives and Goals

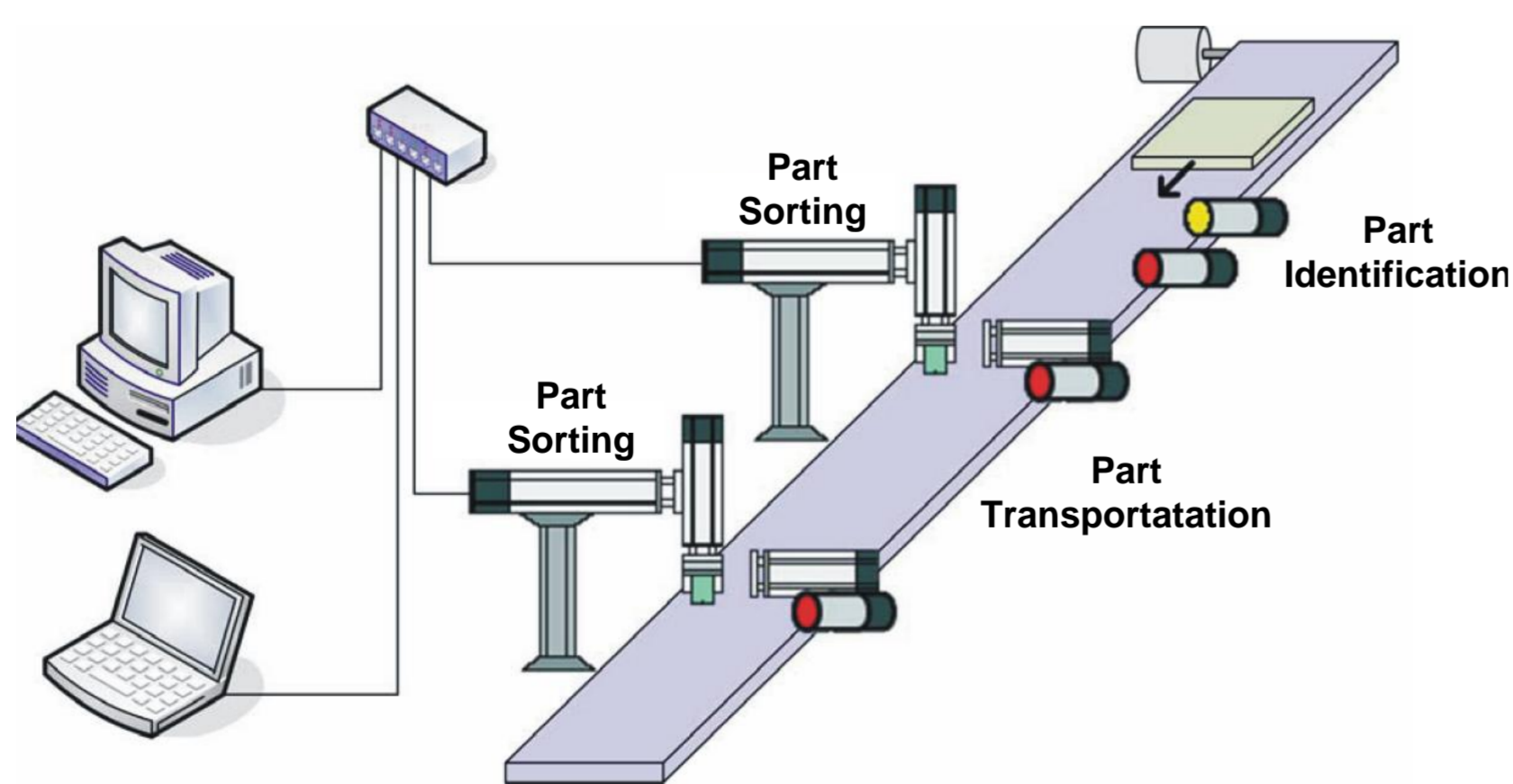
- MEDIEA aims to build an environment within which various specialists can work together seamlessly to develop complete solutions without necessarily being aware of each and every specialisation
- MEDEIA will do this by developing a framework supporting a more formal and flexible design approach, including:
 - Integrated design of diagnostics
 - Integration of simulation and verification of control applications
 - Automatic code generation for different hardware platforms

Multi-Domain Model Driven Design



MEDEIA Modelling Example

- Sorting Application

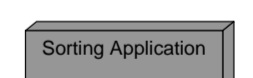


High Level Planning – Functional

DSV – Gantt Chart

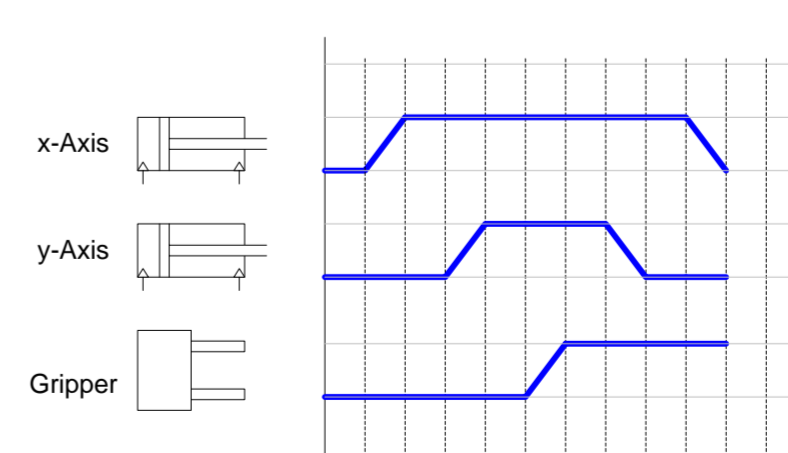
ID	Task Name	2008	2009
1	Sorting Application	04 01 02 03 04 01 02 03 04 01	
2	Part Transportation		
3	Input Transport		
4	Intermediate Transport		
5	Output Transport		
6	Part Recognition / Identification		
7	Part Sorting		
8	Grasping		
9	Deposit		

AC-Model



Detailed Planning – Handling Unit

DSV – Step Sequence



AC-Model

