



European Competence Centre for IEC-61499

Launch event, 18-19 October 2016, Lomazzo-Milan

Building a digital platform to foster a European ecosystem for distributed automation.

Program

Tuesday 18 October: technological enablers for a distributed automation digital platform

08:30 – 09:00 Registration

09:00 – 09:30 Welcome and opening

09:30 – 10:00 **European Competence Centre for IEC-61499: what and why?**

Creating an ecosystem for industrial automation, based on the new ICT technologies, means being capable of bringing into the market the awareness of how such solutions can foster opportunities for revolutionary applications.

Understanding and accepting the major issue of attracting users into a digital platform, Daedalus' answer is the creation of a European Competence Centre to push the envelope of IEC61499-based CPS as a disruptive innovation and become the catalyst to accelerate its widespread acceptance at European level, hosting and incubating its Digital Marketplace.

10:00 – 12:30 **Panel on “Distributed and scalable control solutions for flexible and reconfigurable manufacturing systems”**

The core conceptual idea launched at European level by the German “Industrie 4.0” initiative is that embedding intelligence into computational systems distributed throughout the factory should enable vertical networking with business process at management level, and horizontal connection among dispersed value networks. But how should the transition from legacy PLCs be managed? How the IEC-61131 language are evolving? In distributing intelligence within shop floors, can real-time become an issue? What about cyber-security?

The discussion will cross the main topics of relevance for deploying reconfigurable manufacturing systems based on distributed automation, explaining the choice of Daedalus in focusing on IEC-61499.

12:30 – 14:00 Networking lunch

14:00 – 15:30 **Panel on “Role of simulation in developing automation for CPS”**

It is common understanding that the full adoption of the CPS paradigm relies on how its connection and, most of all, extension into the cyber-world is managed and exploited to augment the overall functionalities of that manufacturing system. Enabling seamless integration between the automation

platform and external modelling and simulation tools is therefore essential to facilitate model-based design, testing and validation of CPS.

This panel will focus its discussion on how an appropriate usage of modelling simulation in developing distributed automation can lead to a new generation of “self-aware” devices and systems.

15:30 – 17:00

Panel on “Optimal control design in hierarchical Systems of CPS”

Closed-loop control systems have been traditionally implemented to improve resource utilization and efficiency of manufacturing equipment, typically focusing on local, system-specific goals, such as increasing machine uptimes. When dealing with the hierarchies of aggregated CPS envisioned by Industrie 4.0, locally focused and “greedy” controls fail to achieve the full utilization benefits that they could enable if conceived under the more effective concept of optimizing the overall behaviour of the plant.

The discussion of the panel will explore how to unlock this opportunity, by proposing – in a shop floor governed by a CPS-based distribution of intelligence – the deployment of an orchestrating intelligence implementing multidisciplinary optimization algorithms.

17:00 – 17:45

Daedalus scientific committee and IEC-61499 standardization effort

Ensuring success of Daedalus initiative is not just a matter of scientific excellence, but requires comparability of project results with what is already on the market, as much as broad applicability of its outcomes thanks to a wide comprehension of industry-driven requirements.

By involving explicitly an interest group of scientific and technical experts, both from the research and the industrial world, as external committee to the project and through active support to standardization efforts of IEC-61499, Daedalus will push forwards at European level its platform as one of the reference.

17:45 – 18:00

Summary and closure of Day-1

18:00 – 19:00

Networking aperitif

Wednesday 19 October: Competence Centre, showcases and ecosystem

09:00 – 09:30

Registration and welcome

09:30 – 10:00

The issues of technology transfer, the reasons for a Competence Centre

“Industry 4.0”, independently from where it originated as a definition, means that we are on the verge of a new industrial revolution, where manufacturing paradigms will be reshaped thanks to the chances offered by ICT technologies. Daedalus proposes a technological platform, based on IEC-61499, that has required many years of innovation effort, but now its uptake depends on the effectiveness in fostering ideas directly within the market.

How can this be reached? Which role should the Competence Centre play? How does this relate to the technological foundation of Daedalus?

10:00 – 12:30

Five Daedalus showcases to incubate reference application scenarios

One of the main strengths of Daedalus is that it will not only propose the implementation of the Digital Platform, but it will support an embryonal stage of the Automation Ecosystem it envisions, involving explicitly future Complementors through the deployment of five proof-of-concepts applications of the platform.

The rationale for the selection of these testbeds has taken into account the need of covering a sufficiently wide diversity of use-cases of industrial automation applications development,

representative of a significant spectrum of dynamics of involvement of the corresponding Complementors.

12:30 – 14:00 Networking lunch

14:00 – 17:00 **Daedalus ecosystem: fostering innovation within the market**

In being a disruptive innovation, IEC-61499 solutions for distributed automation are but a technological enabler, they are powerful tools which need to be used to propose revolutionary application within the industry. Only this acceptance will really bring forward the “Industry 4.0”. Achieving this result, creating a digital marketplace and a European ecosystem for industrial automation requires companies to start using these technologies, progressively attracting new users through their own successful examples.
This session will explore, with the support of industrial partners, the opportunity that distributed automation enables to reshape the way of developing manufacturing systems.

17:00 – 17:30 **“Call for ideas” and creation of an industrial interest group**

The explicit involvement of companies, developers, research centres and other potential market innovators is essential to guarantee the success of Daedalus platform for distributed automation. If providing access to the project showcases with a completely open philosophy is a first step in the right direction, other initiatives must follow to generate interest around the platform and foster relevant opportunities.

The two-day event therefore paves the way for the incoming proposals of the Competence Centre, towards an ever increasing market presence of IEC-61499.

17:30 – 18:30 Conference closure and networking aperitif