Daedalus is a European project conceived to enable the full exploitation of the CPS (Cyber Physical System) concept of virtualized intelligence, through the adoption of a completely distributed automation platform based on IEC-61499 standard, fostering the creation of a Digital Ecosystem that could go beyond the current limits of manufacturing control systems and propose an ever-growing market of innovative solutions for the design, engineering, production and maintenance of plants’ automation.

Daedalus proposes the deployment of an Automation Ecosystem for a multi-sided market based on a new generation of distributed intelligent devices that, existing both in the real and in the cyber (simulated) world, can be aggregated, orchestrated and re-configured to exhibit complex manufacturing behaviours that optimize the performance of future shop floor.

The initiative focuses on key topics for the competitiveness of Europe and its companies, encompassing a variety of interdisciplinary tasks with the objective of deploying a digital platform and multi-sided ecosystem for industrial automation domain.

**Daedalus Ecosystem**

Applications simplify the development of equipment/machines and improve their functionalities

Developers are attracted by the overall installed basis

"Me too" effect due to support from competitors

The more plants use the technology, the more components need to be compatible

The more plants use technology, the more equipment/machines need to be compatible

Network effects:

Cross-side

Same-side

When components, equipment/machines and applications exist, plants are automatically drawn to adopt the platform

More information

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Daedalus exploits the already existing features of the IEC-61499 international standard for distributed automation to propose a functional model for CPS that blends coherently real-time coordination of its automation tasks with the “anytime” provision of services to other elements of the automation pyramid. Adopting IEC-61499 standard and the corresponding development language brings the engineering of automation CPS to the same level of technical opportunities that already characterize current IT world, with modularity, aggregation, inheritance, etc. finally becoming tools of the automation engineer. Future shop floors application development will be based on a much more distributed and concerted effort among the different stakeholders of this market, paving the way for a digital marketplace, where a new generation of Automation Complementors will jointly contribute to the creation of added value for the end-user, within the context of sustainable business models.

A Competence Centre to incubate and foster the Ecosystem

Understanding and accepting the major issue in deploying a Digital Marketplace for a multisided ecosystem – attracting users into the 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 catalyster to accelerate a widespread acceptance of the platform at European level, hosting and incubating its Digital Marketplace. The Competence Centre will have a three-fold role:
1. Hosting the technologies developed during Daedalus in a reference implementation that will demonstrate the effectiveness of the platform;
2. Supporting the deployment of multiple showcases of the technology, in order to bring to the market concrete examples of how it can be used;
3. Incubating the Multi-Sided Platform and the corresponding Digital Marketplace, while providing advanced services to Technology suppliers and Technology users in order to guarantee wide acceptance of Daedalus concepts.