

Focus on events

Past event: ARC INCASE CONFERENCE – ‘Usine du Futur’



ARC INCASE Conference

The cooperation between industry and the universities in the Interreg project led to the first thematic ARC INCASE Conference:

“Usine du Futur”.

The ARC France Company, which is a member of the French User Group, hosted on October 19th 2017 this conference on Industry 4.0.

The 70 attendants from different companies visited the ARC production facilities before attending the conference. Different themes were discussed such as digital transformation of companies, impacts of I4.0 on business models and technical topics as PROFinergy & ProfiCloud. Eric Bernamont, Director of Industrial Development and Hubert Willart, IT Project Manager spoke about their needs for the I4.0 transformation and how projects like INCASE could help them to find new solutions for e.g. their pallet tracking and factory automation.

UPCOMING EVENTS

All our upcoming events can be found on the website. This includes:

- Different workshops on PROFINET, EMC & HFPO, PLC, PoE and IOT,
- Evening lectures on PROFinergy and ProfiCloud technology, and other topics
- And hosted lectures in collaboration with guest companies

More information on these and other upcoming events can be found on our website. Go to www.incase2seas.eu/public-events

INCASE is a European Interregional project funded by the Interreg V 2 Seas Program 2014 – 2020. The project runs from September 2016 to August 2019.



INCASE

towards Industry 4.0 via Networked Control Applications and Sustainable Engineering

This first newsletter brings you a short view on the project objectives and project partners. As we are running more than one year there are too many activities to discuss in this short newsletter. For this reason, we will only focus on one past event as an example, but please consult our website to see the upcoming events. In this newsletter also a more technical topic and a course as 'demonstration action' are highlighted.



INDUSTRY 4.0

PROJECT OBJECTIVES

Industry 4.0 ("I4.0") is the next industrial revolution. Manufacturers are focusing on client centric flexible production and added-value products. The project main objective is to close the gap between the 2 Seas region and other leading countries.

INCASE develops knowledge, innovative applications and pilots on key enabling automation technologies for the future Industry 4.0 (I4.0).

INCASE will deliver 10 thematic demonstration trajectories on those key enabling automation technologies. The demonstration actions will inspire practicing engineers towards new products and new production methodologies.

Cross-border cooperation leads to a cross-pollination of ideas and technology.

The project is a cooperation between **11 partners**: Ghent University, KU Leuven, Yncréa-ISEN, Université de Lille, CITC, VOKA Oost-Vlaanderen, Impuls Zeeland, University of Kent, University of Essex, University of Applied Sciences Vlissingen.



The INCASE project partners at the kick-off event in Phoenix Contact, Bad Pyrmont, Germany.

The project is monitored by industry through user groups in every participating country. If you are interested to join, [contact us](#).



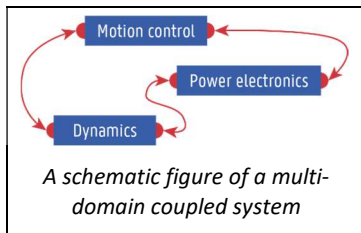
PROJECT OUTPUTS – The 10 thematic demonstrations trajectories are:

- PROFINET
- ProfiCloud
- Co-simulation
- PROFInergy
- Mobile HMI
- Power Line Communication – EMC & HFPQ
- Integrated design with low cost controllers
- High performance FPGA & Industrial hardware targets
- Smart home control, ergonomic HMI & IOT integration
- Smart home energy saving

The pilots and developed technologies are presented in several workshops and lectures. If you are interested in specific workshops, contact us!

Focus on COSIMULATION

When modeling and simulating an electromechanical driveline, a multi-domain approach is required. This is because the total driveline exists of subsystems that are coupled in a way that the state of each subsystem depends on the in- and output value of each other subsystem.

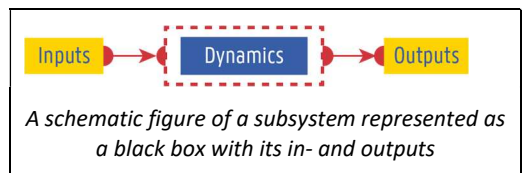


For each subsystem, domain specific simulation and modeling tools are used because they usually offer larger libraries of components and domain specific features than a multi-domain tool. This means that each subsystem can be modelled in another software-package and the in- and output data are stored differently.

As there is no standard way of coupling the different subsystems, problems concerning data-exchange can occur. On top of that, the model of a subsystem can be protected because of Intellectual Property.

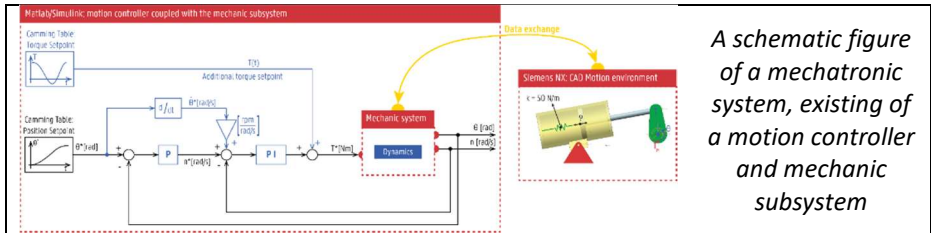
To solve the problems stated above, a co-simulation is needed. First, the modeling is done on the subsystem level without having the coupled system in mind.

The global simulation is then carried out by simulating the subsystems in a black-box manner. During the global simulation the in- and outputs of each subsystems are exchanged.



The Ghent University Campus Kortrijk co-simulations are mainly used for tuning motion controllers of mechatronic systems. The figure below shows that the total mechatronic system is modelled in MATLAB/Simulink and the mechanic system is modelled in Siemens NX. After obtaining a realistic model that describes the dynamics of the mechanic system, the developer can consider that subsystem as a reliable black-

box coupled with the motion controller. The input is a torque command at the drive shaft and the output is position and speed of that same shaft.



After implementing the subsystem in Simulink, the developer can focus on the motion controller and optimize it by tuning the settings of the position- and speed-controller and implementing feedforward-structures. In short, the developer is able to model any motion controller without having the mechanic system in mind.

Focus on PROFINET Training

PROFINET – an Ethernet based industrial network – is together with Ethernet IP worldwide the most used industrial network technology (*source: HMS*), and is in Europe by far the most dominant technology. Since 2 years, it passed PROFIBUS in number of yearly installed nodes, showing that industry is now quickly turning to Ethernet based networks (*source: PI International*).

It is clear that industry needs in-depth and hands-on training on Ethernet based networks: as most enterprises are now more or less familiar with PROFIBUS technology, troubleshooting and diagnostics, they are often hesitating to move to Ethernet based technology. Several project partners are working on different aspects of PROFINET, such as detailed diagnostics, permanent monitoring, networks combining legacy networks with PROFINET, and on high-end applications such as IRT, oversampling techniques, seamless redundancy, etc.

KU Leuven regularly organizes 4-day in-depth courses on this technology, traditionally finishing with troubleshooting exercises for the full group, as can be seen in this picture.

More information on this and other courses and events, can be found on the [website](#).

