Intersted to participate in CloudiFacturing project?

CloudiFacturing is a project, which is open to new (teams of) participants (3rd parties). We would like to draw your attention to our upcoming Call / Request for Proposals to initiate the creative process of generating ideas for Application Experiments. Application Experiments are dedicated sub-projects with one-year duration that are executed within the scope of CloudiFacturing.

Our Open Call will allow you to propose such an Application Experiment!

In CloudiFacturing, minimum 21 cross-border application experiments will be conducted in three waves. Seven experiments comprising the first wave are already defined, while the participation in the second and third waves will be via Open Calls. All experiments bring together different expertise: technical knowledge from Cloud/HPC, data analytics, simulation, modelling, security, etc. and also business modelling expertise.

If you are interested in our Open Call or you have questions, please contact one of our local Digital Innovation Hubs (DIHs) spread all over Europe. The DIHs will help you to prepare a high-quality proposal well suited to the Open Call.

For southwest Europe:
- Elena Femenia: efemenia@insomniaconsulting.es, Insomnia, Spain

For south of Europe:
- Marco Barbagelata: m.barbagelata@stamtech.com, Stam, Italy

For southeast and northeast Europe:
- Gabor Vicze: gabor.vicze@innomine.com, Innomine, Hungary or
- Tomáš Karásek: tomas.karasek@vsb.cz, Technical University of Ostrava, Czech Republic

For northwest and north Europe:
- Simon Bergweiler: Simon.Bergweiler@dfki.de, SmartFactory KL / DFKI, Germany

Announcement of the 1st Open Call

If you are interested in participating or you have questions how to participate, please have a look at CloudiFacturing.eu – you can also contact us at: contact@CloudiFacturing.eu.

The CloudiFacturing consortium will publish more information (e.g. Guide for Applicants, FAQ, webinar) on CloudiFacturing.eu about its 1st Open Call between now and the 1st of July 2018. Please register to receive our newsletter – it will keep you on track.

Cloudification of Production Engineering for Predictive Digital Manufacturing

Advanced ICT solutions for manufacturing and engineering

The mission of CloudiFacturing is to optimize production processes and producibility using Cloud/HPC-based modelling and simulation, leveraging online factory data and advanced data analytics, thus contributing to the competitiveness and resource efficiency of manufacturing SMEs, ultimately fostering the vision of Factories 4.0 and the circular economy.

If you are interested in participating or you have questions, please contact one of our local Digital Innovation Hubs (DIHs) spread all over Europe. The DIHs will help you to prepare a high-quality proposal well suited to the Open Call.

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Cloudification of Production Engineering for Predictive Digital Manufacturing
Our vision - to build a Marketplace for advanced ICT solutions and workflows

The core partners of CloudFlow and CloudSME are joining forces to leverage factory data with cloud-based engineering tools:

- scaling the way to manufacturing analytics,
- enriching the manufacturing engineering process with on-line data, and
- simulating and optimizing producibility and production processes with the vision to support it in real-time.

The consolidated platform between CloudFlow and CloudSME will be extended with capabilities to process factory data and enriched by additional manufacturing process simulation tools. It is going to be accessed through a central interface, enabling the stakeholders to interact, and collaborate.

The protection of stakeholder’s data is going to be safeguarded with a proven security and privacy framework. In addition to the technological aspects, the start-ups founded by CloudFlow (Isagis) and CloudSME (CloudSME UG) are establishing a strategic alliance to adopt a common sustainable commercial model for the holistic solution. Three waves of application experiments are going to validate the applicability of the results, by providing

Success Story & experiment example: Optimizing Heat Exchanger Design of Biomass Boilers through CFD Simulation

Partners
BioCurve, S.L. (End user, Spain), nablaDot S.L. (ISV, Spain), Universidad de Zaragoza (HPC provider, Spain)

Experiment Description
The design of biomass boilers is currently based on the experience of the Biocurve technical staff. The challenge of this experiment has been the introduction of computational fluid dynamics (CFD) tools, integrated in a cloud environment.

Technical Impact
• Development of a virtual model of the current 25 kW boiler model in which the number of pipes has been reduced from 10 to 3.
• The reduction of the number of pipes in this model represents a saving of 18 kg of stainless steel (a 32 percent of the original weight of the pipes of this boiler). The total cost saved estimated for this model is around € 400 per unit.
• The volume of the 25 kW boiler model has been reduced by 30 percent. This reduction saves material costs and allows the installation in a greater number of houses.

Economic Impact
• The Cloud application allows Biocurve to increase its turnover by up to 5 percent of its sales in the first model through this experiment, and to increase the number of potential customers.
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Success Story & experiment example: Optimizing design and production of electric drives

Partners
Hanninger Elektro-Werke (Germany), Linz Center of Mechatronics (Austria) and the German Research Center for Artificial Intelligence (DFKI)

Experiment Description
In this Experiment LCM sets up simulation models for prototype electric motors including electromagnetic, thermal, mechanic, and other aspects using LCM’s system modeler SyMSpace, which is running in a cloud environment. SyMSpace then finds the best-suited motor configuration using its genetic multi-objective optimizer. At the end of this process, the necessary production data is automatically generated from the model.

Technical Impact
• Using SyMSpace in the cloud environment provides the user with sufficient calculation power even for extensive models and deep optimization runs (up to 15,000 individual simulation cycles) – on demand and on pay-per-use basis.
• Due to the streamlined process without human data handover, Hanninger can process a prototype request from design to optimization to production data in very short time. The target is to get the finished prototype within 5 working days.
• The challenge for the ISV is to improve the simulation models for interfacing with the manufacturing processes including the external suppliers of the prototype materials.

Economic Impact
• Greatly improve customer satisfaction by being able to provide a prototype from the discussed design in extremely short period of time.
• Bringing down the design to production time in order to decrease development costs and time by up to 80%.

The project ‘Cloudification of Production Engineering for Predictive Digital Manufacturing’ – is a European Innovation Action (IA) in the framework of Factories of the Future (FoF) with the mission of optimizing production processes and productivity using Cloud-based modeling and simulation, and leveraging online factory data with advanced data analytics; thus, contributing to the competitiveness and resource efficiency of manufacturing companies, especially SMEs.

To pursue this mission, computationally demanding production engineering and simulation as well as data analytics tools are to be provided as Cloud services to ease accessibility and make their use more affordable.