



Cloud Collaborative Manufacturing Networks

Editorial

The C2NET project is arriving to its closing stages, thus development activities are coming to its end, focusing just in solving issues identified during pilot validation activities. At the same time, validation activities replace completely the core role played by development activities up to the moment. But looking backwards, development activities in C2NET project have represented a major challenge from a coordination perspective: many involved partners with different background and expertise, which at the same time are geographically distributed, many different mother tongues, many software component interdependencies, and development and integration activities taking place in different WPs and tasks. This situation is not new, and research has been already performed under the distributed software development field in order to overcome these problems. Problems that can be summarized on how to ensure project awareness among all involved people. And believe us, we confirm this.

In this context, the Integration Camps have revealed as one of the most valuable practices in order to coordinate the different working teams, especially, the development and integration teams in order to foster the generation of C2NET solution. Those Integration Camps have served as a synchronization point for all the different development teams, which usually worked at their own –remotely–, using mail and on-line meetings to coordinate their activities among themselves. Unfortunately, mail or online conferences are not the best mechanisms for discussing about complex topics being necessary in some occasions more time than the initially expected, losing then efficiency. Therefore, organizing those Integration Camps from time to time, with a duration from 3 to 5 days, have permitted the different teams to meet together for solving pending issues and fostering the development activities. And last but not least, those Integration Camps have also served to create camaraderie among participants.

In this way, in C2NET project have been already organized 4 Integration Camps: Valencia (June-2016), Valencia (October-2016), Albi (March-2017) and Valencia (May-2017). Each one of them has had different goals that have evolved according to the evolution of the needs and status of project developments. A final Integration Camp will take place in Tampere, September-2017, whose goal would be to tune the C2NET solution. We expect it to be as successful as all previous ones. Details of the two formers are available in previous newsletters, while more details about the two latter ones are included in this newsletter. We kindly invite you to get some insights about them reading this newsletter, where you will also gain knowledge about the C2NET presence in the ICE conference and other dissemination actions performed by C2NET project.

Wael Mohammed (WP6 Leader) and Rubén de Juan (ITI representative)



CONTENTS

3 rd & 4 th Integration Camp.....	2
C2NET CONFERENCE & ICE CONFERENCE....	3
Publications & Events.....	4



Horizon 2020 is the biggest EU Research and Innovation programme ever with nearly €80 billion of funding available over 7 years (2014 to 2020) – in addition to the private investment that this money will attract. It promises more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market.

More information on the H2020 programme

<http://ec.europa.eu/programmes/horizon2020/en/what-horizon-2020>

C2NET is a H2020 project

Starting date: 01/01/2015

Duration: 36 months

Partners: 20

Total costs: 7.126.494 €

EC funding: 100 %

Call: H2020-FoF-01-2014 Process Optimisation of Manufacturing Assets

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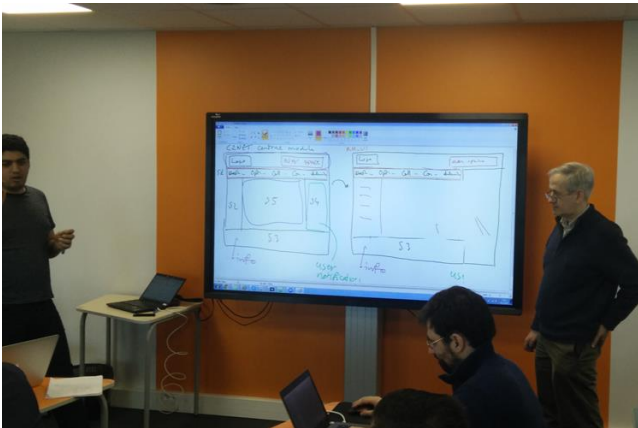
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C2NET Third and Fourth Integration Camp

During 2017 have taken place up to the moment two more Integration Camps: the third (Mines-Albi) and the fourth (Valencia). The third one was mainly devoted to tackle with graphic user interface development, while the fourth one had as main goal the integration of the latest developments of the main C2NET modules (Data Collection Framework, Optimizers and Collaboration Tools).

In this way, the Third Integration Camp of the C2NET project was hosted by Mines Albi partner from the 28th until the 30th of March). During, those three days, around 20 software developers from 10 partners were working together in order to solve identified integration issues putting special focus to graphic user interface development aspects.



In order to achieve those goals, four parallel tracks were organized during the three days. The first one, Track 1, was devoted to integration of User Interface modules in the User Collaborative Portal component. The second and the third tracks – Track 2 and 3 – focused on other User Collaborative Portal (UCP) issues like permissions, roles and general aspects related with service integration. While the fourth track, Track 4, was devoted for evolving the different software pieces, allowing also discussions about pending implementation details and features.



Those three days were very productive allowing to push up the integration of UI modules in the User Collaborative Portal, and reaching agreements about screen layout and

roles. This has set-up the basis for going on with those works off-line, in order to solve identified issues and developing and integrating pending features. The newer obtained versions of the modules have been moreover incorporated in the User Collaborative Portal and had let to the generation of newer releases of the C2NET cloud service.



Later on, the Fourth Integration Camp of the C2NET project took place in Valencia (from the 29th of May until the 2nd of June). During this week, software developers from all project beneficiaries contributing to software pieces for the C2NET solution have been working in integrating the ultimate versions. Around 22 people have participated in this event.

This integration week was oriented to solve the integration issues identified when releasing new versions of components and integrating them for composing the modules and the C2NET cloud service from last integration camp. Thus, during the integration camp, partners worked together solving those issues, generating new versions of the components in an incremental and iterative way, leading to new releases of the C2NET cloud. Moreover, the integration between hubs (that will be located in company facilities) and the C2NET Cloud service was also revisited.

In order to achieve those goals, three parallel tracks were organized during the whole week. The first one, Track 1, was devoted to evolving the C2NET cloud service. The second track, Track 2, was used for working in User Interface aspects. While the third track, Track 3 was devoted for evolving the different software pieces, allowing also discussions about pending implementation details and features.

At the end of the week a new C2NET cloud service was released, where most of the issues were solved, and a review of the status of the development was done, checking pending features, not yet solved issues, proposing a plan and checking it was aligned with pilot needs.



ICE CONFERENCE / C2NET CONFERENCE

C2NET Project was widely represented at the 23rd ICE/ITMC International Technology Management Conference that was held from the 27th to the 29th of June at Funchal, Madeira, Portugal. The 23rd ICE/IEEE ITMC Conference whose theme was "Engineering, Technology & Innovation Management Beyond 2020: New Challenges, New Approaches" promoted the discussion of the strategy that should be followed by research projects after 2020 at the same time it promote the presentation of innovative solutions that are being applied to solve technological and management problems. Xx paper related with C2NET Projects were presented in the conference divided by several workshops and special sessions. In the special session "Industrial Applications: Theory and Practice" C2NET team presented 8 papers and was able to present challenges faced by industry and how to solve them with innovative solutions that promote collaboration as a key success for the improvement of business opportunities putting itself in the front line of development of



ICE CONFERENCE / C2NET WORKSHOP



**23rd ICE/ITMC
Conference
27 - 29 June 2017
Madeira Island, Portugal**

Last 27th and 28th June 2017, C2NET has participated in the workshop "Factories of the Future: Engineering, Technology & Innovation Management beyond 2020" organised within the 23rd ICE/IEEE International Technology Management Conference (www.ice-conference.org) as a result of an initiative of the vf-OS Project (www.vf-OS.eu).

The main goal of this event was to engage FoF EU projects in order to boost collaboration amongst them. This is a first step of a structured and coordinated process to be introduced to discuss and share information about technical and business topics of common interest along the whole projects duration.

The workshop was well attended with around 50 unique participants from 15 countries representing in a balanced manner the RTD community, manufacturing and services companies as well as institutions and associations. Also, 13 FoF projects which address a common thematic focused on Digital Automation and, more specifically, on collaborative manufacturing and logistics and novel architectures for factory automation based on CPS and IoT were represented. Highlighted is the presence of Arian Zwegers

from the EC (DG CONNECT - Unit A2) and Chris Decubber from EFFRA and coordinator of the Connected Factories CSA project contributing to create the appropriate scenario for having a productive workshop.

The workshops sessions consisted of interesting presentations with many interventions, mainly from the projects representatives, that contributed to have very interesting discussions about the topics covered in the sessions. Key common areas and an initial plan for collaboration among projects were also met. A very positive outcome was in establishing several working groups, assigning projects for driving each of them, and agreeing the way to start working.

It can be stated that the workshop was successful having met the main objectives pursued when this event was devised. Attending FoF projects had the possibility to make new contacts with other projects and a window has opened for introducing a new process for collaborating in a regular and structured way. This represents a great opportunity for all those projects which wish to participate for increasing the performance of their respective projects outcomes through a more effective collaboration.



Events and Publications

- **Workshop “Apoyando la Transformación Digital de las empresas. Primeros pasos hacia la Industria 4.0”** (ITI), 25/01/2017, Valencia, Spain
- **MOD4SIM17** (UNINOVA), 23-26/04/2017, Virginia Beach, VA, USA
- **EDSYS Congress** (ARMINES), 17/05/2017, Toulouse, France
- **FIWARE Summit** (ATOS), 29-31/05/2017, Utrecht, Netherlands
- **INTEROP-VLab General Assembly** (INTEROP-VLab), 12-16/06/2017, Brussels, Belgium
- **ICE Conference 2017** (UNINOVA), 27-28/06/2017, Madeira Island, Portugal



ICE Conference 2017, Madeira Island, Portugal

Articles

- **MODELSWARD 2017:** paper “*Model Driven Implementation of Security Management Process*” (UNINOVA), 19-21 Feb 2017 (Porto, Portugal)
- **11th annual International Technology, Education and Development Conference:** paper “*Tools for managing references in class projects and scientific works*” (UPV), 6-8/03/2017, Valencia, Spain
- **11th annual International Technology, Education and Development Conference:** paper “*Storyboard tools for university and education research projects*” (UPV), 6-8/03/2017, Valencia, Spain
- **MOD4SIM17:** paper “*Reconfigurable and Updatable Product-Service Systems: The Path for Sustainability and Personalization*” (UNINOVA) 23-26/04/2017, Virginia Beach, USA
- **MOD4SIM17:** paper “*Fault Tolerant Sensing Model for Cyber-Physical Systems*” (UNINOVA) 23-26/04/2017, Virginia Beach, USA
- **International Journal of Production Management and Engineering:** paper “*Integrated production-distribution planning optimization models: A review in collaborative networks context*” (UPV), 2017
- **21st CSCS:** paper “*Management of IoT Devices in a Physical Network*” (UNINOVA), 2017
- **ICE 2017:** paper “*Processes Orchestration for Preventing and Managing Shortages in a Supply Chain: A dermo-cosmetics use case*” (ARMINES), June 2017
- **ICE 2017:** paper “*Distributed Software Development of a Cloud Solution for Collaborative Manufacturing Networks*” (ITI), June 2017
- **ICE 2017:** paper “*Metalworking SMEs Network Resources Optimization: C2NET Cases*” (UNINOVA, Tecminho), June 2017
- **ICE 2017:** paper “*Configuring and Visualizing The Data Resources in a Cloud-based Data Collection Framework*” (UNINOVA, TUT), June 2017
- **ICE 2017:** paper “*A Multi-agent Approach for Processing Industrial Enterprise Data*” (UNINOVA, TUT, UPV), June 2017
- **ICE 2017:** paper “*Situation Awareness in the Internet of Things*” (UNINOVA), June 2017
- **ICE 2017:** paper “*A Multi-Criteria Decision Model for the Selection of a more Suitable Internet-of-Things Device*” (UNINOVA), June 2017
- **IFAC 2017** “*A monitoring Framework of Collaborative Supply Chain for Agility*” (ARMINES) July 2017



Workshop “Apoyando la Transformación Digital de las empresas. Primeros pasos hacia la Industria 4.0”



INTEROP-VLab General Assembly, Brussels, Belgium



IFAC 2017, Toulouse, France



C2NET Partners

