



Cloud Collaborative Manufacturing Networks

Editorial

Welcome to a new edition of C2NET Newsletter,

In January 2015 the fascinating C2NET project organised its Kick-Off-Meeting; several months before, we had involved ourselves in the preparation of a different proposal, something that would really knocked the existing technologies and the way manufacturing SMEs would face their daily routine.

Today, now that more than two years have passed, the initial C2NET proposal starts becoming real. The different modules which compose the platform have been almost completely developed and tested. Now is the moment to integrate all of them together with the aim of giving form to the main objective for which this proposal was born: to create C2NET cloud platform.

In parallel, it is the moment for our SMEs to evaluate the solution. In other words, to asses our two years' work in a real manufacturing context. From now on and until the end of the project, pilots will provide the different scenarios where they consider that their daily work will be benefit by the use of C2NET. Hopefully, with the correct support and training materials, pilots will not only gain an advantage in their daily labour, they will also help to enhance C2NET results providing their experience using the tool from a final user perspective.

Today, we have eight months more to continue taking this enormous boat to a safe harbour. We are almost there, as we are in the final stages. Nevertheless, we would say that these are the most exciting moments: 'fruits' are going to be picked from the hard work done during more than two years.

Please do not hesitate to visit our website, subscribe to C2NET Newsletter, follow us in Twitter and contact us if you wish to have further information about the project outcomes and benefits of the C2NET project developments.

*Manufacturing & Retail Team
Atos Research and Innovation*



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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

Project contacts

ATOS IT (Project Coordinator)

roman.behul@atos.net

ATOS (Project Manager)

diego.esteban@atos.net

CIGIP (Technical Manager)

rpoler@cigip.upv.es

ITI (Web Manager)

rjuan@iti.es

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C2NET Second Integration Camp

The Second Integration Camp of the C2NET project took place in Valencia (from the 17th until the 21st of October). During this week, software developers from all project beneficiaries contributing to software pieces for the C2NET solution have been working in integrating them. Around 22 people have participated in this event.

This integration week has focused specially on generating an initial version of the Cloud service, using the different pieces that the beneficiaries have been preparing since the First Integration Camp. Later on, this initial version will be evolved in an incremental and iterative way, adding new components and updating components with newer versions that provide new features and solve detected issues in the performed tests. In parallel to this Cloud service integration works, the Integration Camp has also addressed the integration from hubs (that will be located in company facilities) for sending information to the C2NET Cloud service.



The next Integration camp will be held in Valencia, Spain, the 29-31/05/2017.



In order to achieve those goals, four parallel tracks were organized during the whole week. The first one, Track 1, was devoted to building the Cloud service. In its initial session, a preliminary service was created with a set of core pieces that later on, in the following Track 1 sessions, was extended by integrating pieces previously prepared in the second and third tracks. In this way, the second and the third tracks – Track 2 and 3 – were used to prepare pieces for their integration in the Cloud service – that also included solving detected issues –. While the fourth track, Track 4 was devoted for evolving the different software pieces, allowing also discussions about pending implementation details and features.

As in the First Integration Camp, in this one, the piloting work package leader was also present. Her participation was focused to ensure the proper alignment of the development and integration works with the needs identified on the selected validation scenarios for each pilot.

After a very productive week, a draft version of the Cloud service has been obtained, which will be evolved in the upcoming weeks with new component versions in order to solve detected issues and incorporate new features. In this way, in this Integration Camp, the areas that still need further improvement in order to achieve a completely cloud operational service have been detected, next steps for going on its evolution have been established, and a calendar of intermediate milestones has been agreed.





CREMA / C2NET workshop

This Industrial workshop was a joint initiative of CREMA and C2NET H2020 EU projects to give the European Industry a general overview about current and future trends related to digitalisation technologies applied to manufacturing. During the day before the event there was a rehearsal workshop in which first in individual sessions and then in a joint session, both projects made the presentations for the following day gathering opinions and suggestions from the participants to improve the message to be transmitted to the audience.

Although the presentations were mainly focused on an industrial audience, particular approaches of each project related to scientific aspects such as respective Cloud platforms, data collection, storage and analytics, data monitoring, optimisation algorithms or collaboration processes management. Interesting discussions to clarify concepts, approaches and doubts took place facilitating the mutual understanding of both projects by the attendees.

In addition to having recognised speakers belong to the industry sector, both projects had the opportunity to present their objectives, scope of application and main findings generated until the date. Presentations and practical demonstrations will be made by partners of both projects to present their own solutions based on respective industrial use cases. Apart from increasing visibility, the main goal of this action was to collect first-hand feedback from companies regarding the clarity and applicability of solutions presented to solve problems addressed by both projects.



As previously mentioned, the target audience for this event was European industrial companies although participation was also open to research and education organizations as well as associations or authorities. This has required international collaboration starting with C2NET and CREMA partners' involvement led by IKERLAN and continuing with recognised European speakers belonging to the industrial sector as well as contacted EU projects, associations and industrial companies that could be interesting in attending the event.



CREMA aims at simplifying the establishment, management, adaptation, and monitoring of dynamic, cross-organisational manufacturing processes following Cloud manufacturing principles. CREMA will develop the means to model, configure, execute, and monitor manufacturing processes, providing end-to-end support for Cloud manufacturing by implementing real systems and testing and demonstrating them in real manufacturing environments.

More information on <http://www.crema-project.eu/>

Cloud Collaborative Manufacturing Networks

Four industrial pilots cover the value chain from the component supply to the product delivery

AUTOMOTIVE (Spain)
Optimisation of the production sequencing plan, considering unforeseen changes in the customer demand plans.
lvillar.salazar@leurecia.com

DERMO-COSMETICS (France)
Prevent and manage replenishment shortages in a collaborative process using on-line production and deliveries data.
frederic.hauser@pierre-fabre.com

METALWORKING SME NETWORK (Portugal)
Production costs optimization through collaborative logistics and raw material purchases.
acunha@tecninho.uminho.pt

OEM OF HYDRAULIC AND LUBRICATION SYSTEMS (Finland)
Production planning with increased transparency to customers and suppliers.
roberto.camp@fluhouse.fi

www.c2net-project.eu

01/01/2015 - 01/01/2016
Duration: 36 months
Total Budget: 7,125,454 ME
EU Funding: 100 %
H2020-FoF-1-2014
Process Optimisation of Manufacturing Assets

Pilots development:
www.c2net-project.eu

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Events and Publications

- **8th IEEE International Conference on Intelligent Systems IS'16** (UNINOVA, UMINHO), 04-06/09/2016, Sofia, Bulgaria
- **Factories of the Future Conference 2016 - Materialising Factories 4.0** (ATOS), 15-16/09/2016, Brussels, Belgium
- **Conferencia de la Asociación Española para la Inteligencia Artificial (CAEPIA)** (UPV), 14-16/09/2016, Salamanca, Spain
- **IoT Solutions World Congress 2016 (ATOS)**, 25-27/10/2016 Barcelona, Spain
- **World Cultural Heritage Conference 2016** (UNINOVA), 31/10-05/11/2016, Cyprus



8th IEEE International Conference on Intelligent Systems IS'16, Sofia - Bulgaria

Articles

- **INDIN:** paper "Cloud based solution enabling collaborative supply network optimization for an Original Equipment Manufacturer" (TUT), 18-21/07/2016, Futuroscope, Poitiers, France
- **INDIN:** paper "Implementation of an Industrial Visualization Model for Collaborative Networks" (TUT), 18-21/07/2016, Futuroscope, Poitiers, France
- **INDIN:** paper "An approach for integrating legacy systems in the manufacturing industry" (TUT), 18-21/07/2016, Futuroscope, Poitiers, France
- **CIO-ICIEOM-IIE-AIM** "Combined models for production and distribution planning in a supply chain" (UPV, VTT, Mines Albi, Pierre Fabre) July 2016
- **CIO-ICIEOM-IIE-AIM** "Optimization models to support decisionmaking in collaborative networks: A review" (UPV, VTT...) July 2016
- **CIO-ICIEOM-IIE-AIM** "Capacitated lot-sizing and scheduling problem for second-tier suppliers in the automotive sector" (UPV...) July 2016
- **CIO-ICIEOM-IIE-AIM** "An overview of optimization models for integrated replenishment and production planning decisions" (UPV, Linagora...) July 2016
- **IECON 2016** "A solution for processing supply chain events within ontology-based descriptions" (TUT), 24-27/10/2016, Florence, Italy
- **IECON 2016** "A web-based simulator for a discrete manufacturing system" (TUT), 24-27/10/2016, Florence, Italy
- **ASME 16** "Case-based support to sustainable Interoperability and decision in Enterprise Networks" (UNINOVA), 11-17/11/2016
- **ASME 16** "Automated Reengineering of Industrial Service-based Systems"



Factories of the Future Conference 2016, Brussels - Belgium



Conferencia de la Asociación Española para la Inteligencia Artificial, Salamanca - Spain



C2NET Partners

