I-RAMP³

Intelligent Network Devices for fast Ramp-up

NEWSLETTER

No.5

Content

Editorial

Dear Reader,

before Christmas holidays the consortium is proud to present the fifth issue of the **I-RAMP³** newsletter!

Meanwhile the **I-RAMP³** final phase has started. This phase now strongly focusses on the integration of the various developments into a comprehensive setup of three Demonstrators. The consortium can look back proudly on 26 months massive technical developments highlighted by the availability of the second prototype and on a smooth and fruitful collaboration among the partners. The avid consortium is looking forward to the upcoming tasks and will definitely keep up the great spirit!

In the fifth edition of the newsletter we will give you an insight into our 4th Hackfest which took place in the premises of our partner AWL Techniek from the Netherlands. Dive into the great collaboration and read about our 24 month partner meeting held at Critical Manufacturing in Porto, Portugal on page 2 and 3. Join the world of **I-RAMP³** and find out more about project's final phase, tasks and latest developments. **I-RAMP³** insights in this newsletter edition are provided by Bert van Ommen from AWL Techniek in our interview on page 4 and 5.

Get to know the Co-FACTOR cluster initiative about "smart components" where **I-RAMP³** is proud to be a part of on page 6 and last but not least get an impression on past events that our partners attended and be informed about upcoming events in the field (page 7).

And don`t forget to have a look on our LinkedIn profile to follow the most topical news.

We are looking forward to your feedback and now enjoy reading!

Your I-RAMP³ consortium

I-RAMP³ ID

Title
Intelligent Reconfigurable Machines for Smart Plug&Produce Production

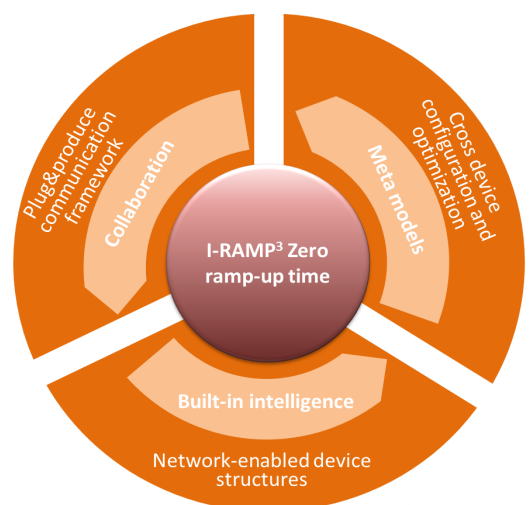**Project duration**
01/10/2012 – 30/09/2015

Main objective
I-RAMP³ aims at enabling the European manufacturing industry towards smart manufacturing systems in conventional production.
This goal will be reached by a novel concept for fast, optimized ramp-up and operation of production lines. Therefore **I-RAMP³** proposes the transformation of conventional production equipment into **Network-enabled Devices (NETDEVs)**.

Partner countries
Germany, Hungary, Portugal, France, Netherlands and Greece

I-RAMP³ Zero ramp-up time
- Plug&produce communication framework
- Collaboration
- Cross device configuration and optimization
- Meta models
- Built-in intelligence
- Network-enabled device structures

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I-RAMP³ - 4th "Hackfest" in Harderwijk, the Netherlands, from the 30th of September – 2nd of October 2014

4th I-RAMP³ Hackfest
All sorts of technical discussions by the software experts - with a successful outcome….

From the 30th of September - 2nd of October 2014 the I-RAMP³ partners (FEUP, IPA, INOS, CMF, FG, GAMAX, HWH, TECHNAX and IEF) met again for their popular and well-liked Hackfest. This time partner AWL Techniek hosted the Hackfest at their impressive premises in Harderwijk, the Netherlands.

The goal of this meeting was to discuss, present and test the software which has been developed during the past months by different I-RAMP³ partners. Furthermore, the overall strategy for the Demonstrator implementation and presentation has been discussed. Detailed planning of the Demonstrator's roadmap has been done and also several Story Boards for the presentation of the different show cases within the Demonstrators have been developed. Behind this background, the decision for meeting at AWLs premises had also strategic reasons: AWL is one of the system integrators who are responsible for the final integration of our developed components and sensors into an assembly line.

The NETDEV concept was further explored and the project coordinator, Michael Peschl, was very enthusiastic about the functionality which allowed for adapting infrastructure operation of a machine. For example, the team of FEUP and FG showed the dynamic composition of sensor nodes which allows for an easy access of data from various sensors in a huge network.

Harms & Wende demonstrated a prototype of their NETDEV which allows for a very fast set-up of devices after a device breakdown. By this, defect devices can be exchanged within minutes without losing any data. Further Technax and IPA showed their approaches for production and machine configuration and diagnosis. In the end Gamax demonstrated a software tool which allows for scanning the network for NETDEVs and their functionality. Further it enables very fast identification of devices and for the elaboration of device capabilities.

....and these are only a few examples of the new significant features which have been realized during the meeting….

At the end of the Hackfest, all partner committed their interest for an early demonstration of the latest developments. The first opportunity for this is the 24 month partner meeting in Porto. After that, everybody is enthusiastically looking forward to integrate everything in the final setups of the Demonstrators.

Finally, we want to thank the guys from AWL Techniek and especially Bert for hosting us and for a perfect organization for all of the Hackers!

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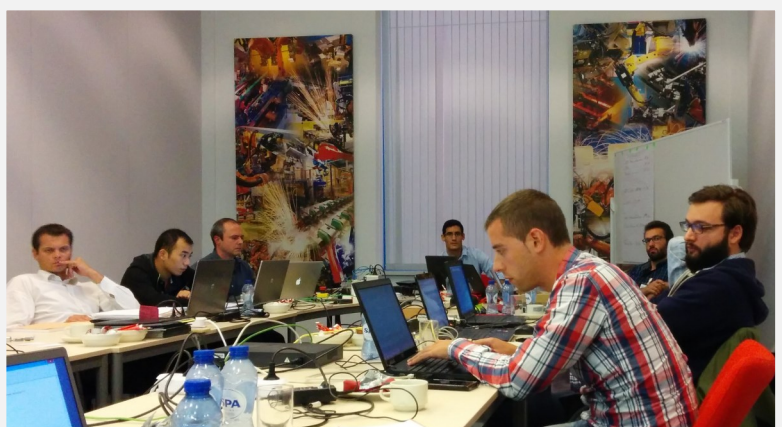
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I-RAMP³ partner meeting in Porto, Portugal, 14th - 15th of October 2014

I-RAMP³ M24 partner meeting successfully completed! But no time for hibernation - there are still objectives to be achieved and goals to be met where our highly motivated consortium is looking forward to!

On the 14th and 15th of October 2014 the I-RAMP³ consortium came together for the M24 meeting in Porto, Portugal hosted by our partner Critical Manufacturing. The meeting strongly focused on the last third year of the project which is on the demonstration of the developments and the dissemination and exploitation of the new technology.

After welcoming all participants and providing an overview of the agenda for the upcoming two days by the coordinator Michael Peschl (HWH) and the host, the first day started with an interactive dissemination session led by SEZ with the goal to review, set-up and plan activities for the upcoming period.

The exploitation strategy seminar was led by SEZ as well. This time the seminar strongly focused on the in-depth characterization of those results with highest commercial potential. The characterization has been done in form of interactive exercises. The session was very fruitful and completed the all around successful first day of the partner meeting!

The second day was completely dedicated to work package presentations by the work package leaders in order to present projects progress and results, clarification of all technological aspects and the demonstration of the prototypes.

Overall the projects progress is impressive and all work package leaders achieved the progress level until the M24 meeting where they planned to be.

The whole consortium acknowledged that the project was making good progress and promising results were already at hand. Yet, all partners know that there are still objectives to be achieved, goals to be met and for that now that the demonstration phase will start it is necessary to maintain the same motivation and work pace!

Once again many thanks to Critical Manufacturing for providing an excellent framework to the meeting and to all participants for their great spirit and impressive work efforts!

Keep up the good work!

Interview with Bert van Ommen (AWL)

Profile Bert van Ommen

Bert van Ommen is a project manager at AWL and responsible for managing the construction, deployment and commissioning of automatic welding equipment to customers pre-dominantly in the automotive business. Bert is an electrical engineer with a software and data communication specialization master, he had R&D and management assignments in Telecom equipment supplier and operator environments. Since 2.5 years Bert is working for AWL and for the project I-RAMP³ he was assigned to AWL's R&D department.

Bert, first of all thank you very much for taking some time to do the interview with us! Let's start with the first question: Which is AWL`s main area of activities?

AWL Techniek is a SME which has remarkable experience in welding techniques. AWL is also a system integrator which designs and produces industrial production installations for many different markets. The company cares about innovative and functional solutions tailored to customers' requirements. AWL`s core competence is performance management, quality control and reliability. It has acquired a lot of experience in designing and building installations used for producing parts of car bodies (such as bumpers, bumper supports, columns/pillars, fire walls,

tunnels, wheel casings and roofs) and seating systems (among others, complete front and rear seats), head rests and front-seat underframes. This also applies to developing machines for making fuel tanks, gearshift sticks, doors, exhausts and airbag retainers. AWL Techniek applies a variety of control units for joining processes, such as spot welding, projection welding, laser welding, MIG welding, self-pierced riveting and gluing.

What is exactly the role of your department at AWL?
In the AWL R&D department we are responsible for exploring and validating new technologies and processes for our applications. In our technical roadmap we are focusing on: robot technologies, laser welding, advanced controls, vision, logistics handling and modular design.

How did AWL become involved in the I-RAMP³ project? Are you involved in other European R&D projects, too? In case this is a "new experience" for AWL, how do you feel about it after 26 months of run time?
Before the I-RAMP³ project we have been involved in another European R&D project called "XPRESS" together with a number of partners which are currently active in I-RAMP³, for instance Harms & Wende who is now the co-ordinator of I-RAMP³, Fraunhofer IPA, CMF, GMX FEUP, TECHNAX, IAF and SEZ. Through this project we were able to gain experience with European projects and we got really enthusiastic and enjoyed the work within such a project. Now within I-RAMP³ it is still the same very positive feeling.

Interview with Bert van Ommen (AWL)

…..now, talking about your expectations on the output for you…. how strategic is the I-RAMP³ project really for AWL?

This project is very strategic for us because the project's objectives totally correspond to AWLs objectives which are primarily zero ramp-up time integration. We as a system integrator pursue the same objective in any installation we deliver.

Now, the demonstration phase will start soon, which has to be planned carefully and AWL is responsible for it. So from your perspective, what are the most important things which have to be considered in the demo phase?

For me it is important that the roles of all involved partners in the demonstration phase are clearly defined and everybody knows what to do. Further, it is important to focus on demonstration of scenarios and the main benefits of I-RAMP³. This benefit is the speed of integration through the use of the technology, although the technology core maybe quite complex itself. The biggest risk at this stage would be to lose our focus, which is to show the essence of I-RAMP³ and not a complete application.

I picked up a statement of yours about one aspect of your role within the I-RAMP³ project…."AWL provides the stage, all other partners are the actors". Can you explain what it means concretely? What do you expect from your partners?

AWL as a system integrator is able to provide the infrastructure meaning robots, machines for welding, software and many other things. The partners should use our "stage" to implement their demonstrators and to do their "show". Additionally, we support them and help to coordinate the overall setup.

Let's take another perspective and zoom out: Can you explain how these prototypes fit into a real industry setting?

The prototypes fit very well into real-world industry setting! You can say it is a one-on-one correspondence because the demonstration will be based on a real-life scenario. We tried to be as close to the industrial setting as possible and we have to prove relevant and viability. Oth-

erwise it would be almost impossible to convince potential customers of the I-RAMP³ technology and its benefits.

Do you expect to be able to implement the project developments seamlessly into your current processes? Who are your direct commercial customers for a product that could potentially emerge from the project?

Yes, we definitely expect to implement the developments seamlessly into our current processes and the improvements will be very significant for us! We see our direct commercial customers for the product in the field of laser technology. We are planning to implement the laser welding parameter optimization function we are currently working with Hochschule Karlsruhe on our own processes and we also want to make it available to our customers.

Last question: If you look again on current activities, when do you expect the demonstrators to be ready for the show case?

The whole consortium is really looking forward to finalize the demonstrators in the upcoming year. I think we will be ready with our "pre-release" in spring 2015 and it will be presented to the public during the show case in September close to the end of the project. We are absolutely convinced that the people will be enthusiastic about the I-RAMP³ technology and our demonstration performance.

Thank you very much for sharing your opinion with us. We're looking forward to another period and fruitful collaboration with you in I-RAMP³ !

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News from the field

I-RAMP³ participation in Co-FACTOR

Smart devices with innovative capabilities, machines with built-in intelligence, computer assisted and advanced manufacturing …sound familiar to you?

Then Co-FACTOR is your topic! Co-FACTOR is a new action supported by the European Commission under its Research & Innovation Program Horizon2020 to bring together all those players who feel that they are part of a "smart components" community. Whatever role you have in the supply chain, whether you develop new technologies or look for smarter solutions for your enterprise, smart components are the "magnetic" core for all.

Meet the developers of latest technologies for a smart production, learn how you can benefit from recent "Factories of the Future" projects and their output, meet experts in the field, discuss and shape future needs and roadmaps. The project will officially start in January 2015.

Soon, the initiative's website and presence on social media will give you the chance to keep on track about Co-FACTOR and its activities. Our I-RAMP³ internet posts we will notify our followers once Co-FACTOR goes online.

If you want to learn more about Co-FACTOR right away, you're welcome to contact:

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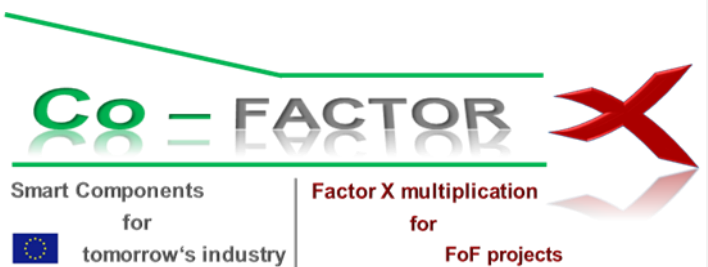
Factories of the Future and SPIRE Call topics 2015

The **"Factories of the Future"** 2015 call is now open for proposals and is supported by a budget of over €143 million from the European Commission. Through the Horizon 2020 Participant Portal proposals can be submitted by the **4th of February 2015** latest.

For further information, please click on each topic:

FoF-08-2015:ICT-enabled modelling, simulation, analytics and forecasting technologies

FoF-09-2015:ICT Innovation for Manufacturing SMEs (I4MS)

FoF-10-2015:Manufacturing of custom made parts for personalised products

FoF-11-2015:Flexible production systems based on integrated tools for rapid reconfiguration of machinery and robots

FoF-12-2015:Industrial technologies for advanced joining and assembly processes for multi-materials

FoF-13-2015:Re-use and remanufacturing technologies and equipment for sustainable product life-cycle management

FoF-14-2015: Integrated design and management of production machinery and processes

On http://www.effra.eu/fluxBB/index.php organisations can express their interest in a call topic. Potential project partners can also be found through this portal. Access to the EFFRA Innovation Portal is free of charge and open to everybody.

Further the **SPIRE** 2015 calls (Sustainable Process Industries through Resource & Energy Efficiency) are open as well and funded with a budget of more than €75 million. Deadline for submission is the **4th of February 2015**. For more information, please click on the link below.

http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/h2020-spire-2015.html

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Past events (partners at fairs and events)

Maschinenbaudialog July 2014 in Stuttgart:
HWH and SEZ attended this networking event with a company booth and promotional material on I-RAMP³.

34th Motek October 2014 in Stuttgart– International trade fair for automation in production and assembly
I-RAMP³ partners IEF Werner, Technax and IPA were present as exhibitors on Motek 2014 and intensively promoted I-RAMP³ and its developments. (See pictures below and on the right side)

Semicon Europa October 2014 in Grenoble
Critical Manufacturing was present as an exhibitor, where they have presented their main product, cmNavigo and the I-RAMP³ project as well.

SPS IPC Drives November 2014 in Nüremberg
SPS IPC Drives is one of Europe's leading exhibitions for electric automation. Therefore several I-RAMP³ partners such as SEZ, HWH and Fraunhofer IPA were present and did a lot of networking and promotion for I-RAMP³.

Future events

Horizon 2020 Calls Info Day on the 17th of December 2014 in Brussels (Belgium)
The event aims on informing the participants about the H2020 calls on Low Power Computing (ICT 4), Internet of Things and Platforms for Connected Smart Objects (ICT 30), ICT-enabled modelling, simulation, analytics and forecasting technologies in Factories of the Future (FoF 8) and ICT Innovation for Manufacturing SMEs (FoF 9). All participants will get the occasion to present their proposal ideas and to network with other participants or ask questions to Commission staff about their proposal idea.

Further info: http://www.effra.eu/index.php?
option=com_content&view=article&id=158&Itemid=56

Intec, 24th-27th of February 2015, Leipzig (Germany)
Intec focuses on innovations and proven technology over the entire spectrum of manufacturing technology for the metal processing industry. Application-oriented automation solutions for the machinery and vehicle construction industries are as much an integral part of trade fair's offering as assembly and material handling technology for industrial production processes.

Further info: http://www.messe-intec.com/

Industry Lyon 2015, 7th-10th of April 2015, Lyon (France)
The fair belongs to the leading events in France for production equipment, consumables and industrial services and gathers all professionals of the industry.

Further info: http://industrie-expo.com/