

# I-RAMP<sup>3</sup>

Intelligent Network Devices for fast Ramp-up



## NEWSLETTER

Nr. 1

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### Editorial

Dear Reader,

The I-RAMP<sup>3</sup> consortium is proud to present the first issue of the project newsletter. The newsletter will frequently provide interesting facts on the project's research and development activities. Furthermore, the newsletters will also collect and present information on relevant events within and outside of I-RAMP<sup>3</sup>.

The European Industry is currently facing various challenges. For instance, decreasing lot sizes as a result of an increasing number of product variants force the manufacturing industry to run flexible and adaptable manufacturing systems. Under such circumstances the ramp-up of production becomes very important. Only if the ramp-up time can be decreased while at the same time the quality of the products reaches an optimal level at a very early state, an economic and profitable production can be realized. Thus, fast production ramp-up is directly linked with the future competitiveness of the manufacturing sector in Europe.

I-RAMP<sup>3</sup> tackles these issues by the developing specific technologies for a fast ramp-up of manufacturing systems. The consortium is composed of experts from industry and the scientific community. With this strong, complementary combination we are sure to reach the sophisticated goals of the I-RAMP<sup>3</sup> project in order to strengthen Europe's position in global competition.

Welcome to I-RAMP<sup>3</sup>! We hope you'll enjoy reading our Newsletter and look forward to your feedback!

Yours sincerely,

I-RAMP<sup>3</sup> consortium

Moreover, we kindly invite you to also regularly consult our website:

[www.i-ramp3.eu](http://www.i-ramp3.eu)

### I-RAMP<sup>3</sup> ID

#### Title

Intelligent Reconfigurable Machines for Smart Plug&Produce Production

#### Programme

Seventh Framework Programme, Collaborative Project, Theme FoF.NMP.2012-3 – Factories of the Future in the Nanosciences and Nanotechnologies, Materials and New Production Technologies (NMP) Programme

#### Project duration

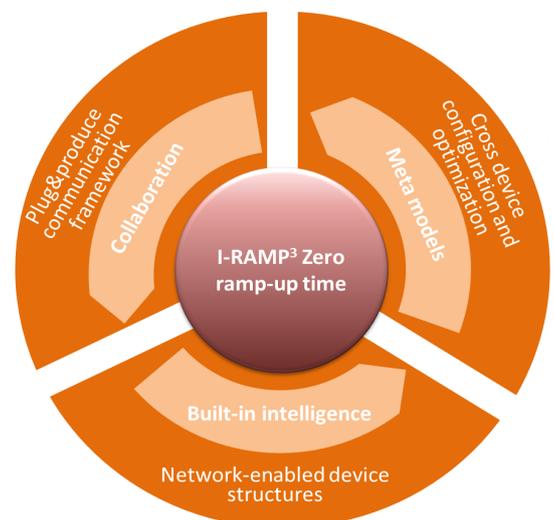
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#### Main objective

I-RAMP<sup>3</sup> 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-RAMP<sup>3</sup> proposes the transformation of conventional production equipment into **Network-enabled Devices (NETDEVs)**.

#### Partner countries

Germany, Hungary, Portugal, France, Netherlands and Greece



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### I-RAMP<sup>3</sup> progress and future developments

#### Kickoff Meeting Hamburg, October 2012

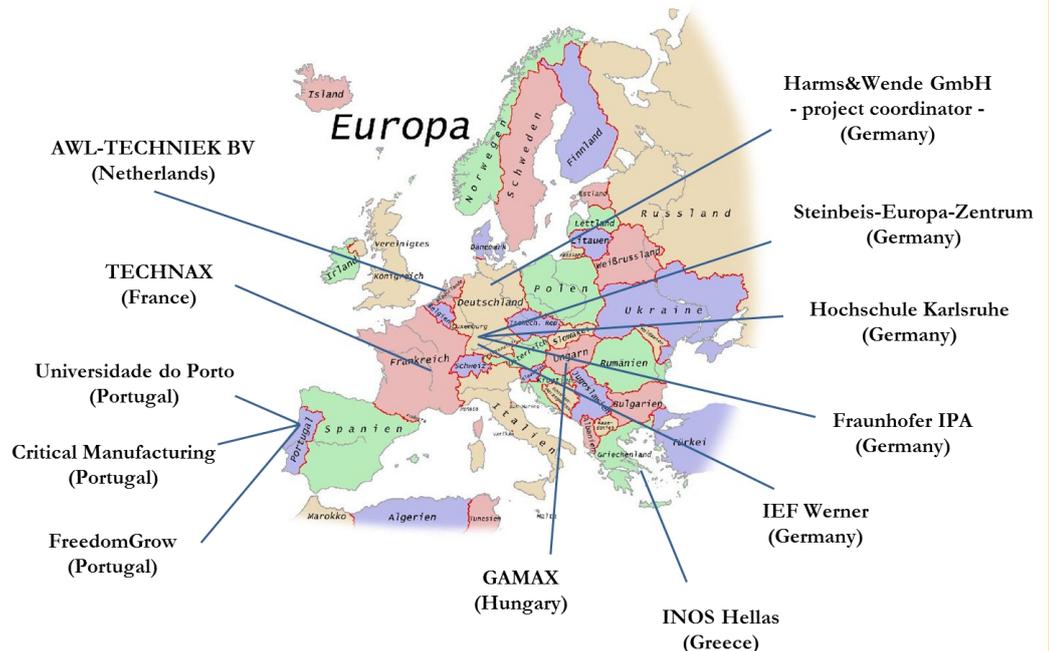
The European Project **I-RAMP<sup>3</sup>** started on the 1<sup>st</sup> October 2012. The overall goal of **I-RAMP<sup>3</sup>** is the drastic reduction of ramp-up time for production systems. Furthermore, the rapid adaption of manufacturing systems on new production demands and the fast ramp-up after component exchange or maintenance is in focus.

For the kickoff meeting on the 17<sup>th</sup> and 18<sup>th</sup> October 2012, participants of all 12 partners and Jan Ramboer, the responsible project officer of the European Commission, came to Hamburg, Germany. The kickoff meeting aimed to get a common understanding on the project's goals and the roles and responsibilities of the project partners. During the first meeting day, presentations on the general project focus and organization as well as on the content of the various workpackages have been performed. By this, a common understanding on the various aspects of the **I-RAMP<sup>3</sup>** developments and goal has been reached. The visit of Harms&Wende's facilities, the visit of the "Miniatür Wunderland" (the largest model railway in the world) and a joined dinner concluded the first day of the kickoff meeting.

The second day started with a phone conference with the Project Technical Adviser Dimitrios Karadimas who presented important aspects on the project's implementation. After that, Jan Ramboer informed the consortium on the administrative issues for a smooth project execution. The meeting continued with presentations of each partner about their organization and the expected benefits. In order to guarantee a smooth

take-up of the **I-RAMP<sup>3</sup>** activities, the meeting ended with a workshop on the specification of industrial requirements and the related activities.

The kickoff meeting marked a very successful project start. All partners expressed their common understanding on the project's general goals and activities. **I-RAMP<sup>3</sup>** combines the research activities in sophisticated scientific areas with the urgent needs of the involved industries.





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### Workpackage 3,4,5, and 6 Kickoff Meeting, Stuttgart, January 2013

On the 1<sup>st</sup> January 2013 the four main workpackages related to the **I-RAMP<sup>3</sup>** research & development activities have officially started. In order to set forth a detailed action plan together with all involved partners, those workpackages were kicked-off in a common meeting organized from 15<sup>th</sup> to 17<sup>th</sup> January at partner Fraunhofer IPA in Stuttgart, Germany.

The meetings started with a review of the results on industrial requirements obtained in WP1 during the previous months. These results are a critical basis for the meaningful and expedient alignment of the R&D activities. The rest of day 1 was dedicated to the workshop of workpackage 3 “Communication framework for heterogeneous devices” led by partner Gamax (Hungary). In this workpackage the general communication and collaboration mechanisms for the NETDEVs (the **I-RAMP<sup>3</sup>** intelligent devices and sensors) will be defined and implemented.

On the second day, parallel sessions for kicking off the workpackages 5 “Plug&Produce sensors for fast ramp-up and flexible production” and workpackage 6 “Manufacturing execution system enhancement for fast ramp-up and flexible production” have been performed. In workpackage 5, the embedding of sensors, sensor grids and actuators in the **I-RAMP<sup>3</sup>** architecture will be developed, while workpackage 6 aims at the optimization of the workflow management within Manufacturing Execution Systems by the analysis of relevant production data. The sessions have been moderated by the responsible workpackage leaders Critical Manufacturing (Portugal) for WP 6 and the Faculty of Engineering of the University Porto, Portugal for WP 5 respectively.

The final day saw the workshop on workpackage 4

“Plug&Produce devices for fast ramp-up and flexible production” in which the **I-RAMP<sup>3</sup>** NETDEVs will be developed. This workpackage is led by the project’s coordinator Harms & Wende, Germany.

In all kickoff meetings, the requirements and expectations of the partners have been discussed. Furthermore, the focus of the first implementation steps has been defined by the development of several application scenarios. In order to guarantee a seamless start of the workpackages activities by all involved partners, action plans and responsibilities for the various activities have been specified. We’re looking forward to the upcoming results!





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### Interview with coordinator Michael Peschl (HWH)

#### Which is HWH main area of activities?

The parent company Harms&Wende supplies resistance welding equipment in form of control devices, quality assurance systems and also complete packages. Harms&Wende customers are automotive manufacturers such as Mercedes, Bentley and BMW, Volvo, Faurecia and CITROEN as well as customers in the areas industrial solutions and micro welding.

#### What is exactly the role of your department at HWH?

Harms & Wende Karlsruhe has two main areas of activities. First, it is specialized in software development for user interfaces of the entire HWH welding equipment portfolio, but also delivers custom specific software. On the other hand, HWH Karlsruhe coordinates the company's research and innovation projects. This is partly due to the long-lasting relationship and the proximity to the University of Applied Sciences in Karlsruhe, at which the subsidiary is located. Currently, the company is involved in two FP7 projects, TRANSPARENCY and I-RAMP<sup>3</sup>, which started recently.

#### Is HWH actively seeking innovative developments? Do you have an internal R&D department?

Indeed, there is a demand for research and innovation. HWH has an internal development department, whereas research is mostly conducted in the research project we participate in. The latter allows us on the one hand, to continuously follow ongoing research efforts in the area

#### Short profile Michael Peschl

**Michael Peschl is an experienced manager and a leading member of the research and development department of Harms&Wende with extensive knowledge in the field of software development. He obtained his degree in ICT from the University of Applied Science, Karlsruhe. Since January 2009 he is the branch manager of Harms & Wende Karlsruhe and responsible for the coordination of all international research projects.**

and, on the other hand to make new interesting and strategic contacts through the consortia. From a middle and long-term perspective, it is, of course, essential to also be able to implement such innovative developments. This can be challenging sometimes, since customers of the respective sectors tend to be rather traditional and low-risk oriented.

#### How did the idea of I-RAMP<sup>3</sup> emerge? Was it a particular "need for innovation" of HWH? What are the advantages provided by the solutions proposed by I-RAMP<sup>3</sup> for HWH?

As I said before, there is a need for innovation, not only for HWH, but for the entire sector in order to respond to customers' demands and the global competition. The tendency on the customers' side goes towards specialized, tailored products. The customizations include, for instance, product specific changes, energy efficiency

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improvements or quality related improvements. Consequently, batch sizes of an ordered product drop considerably and current lines need to be adapted. This is where the idea of **I-RAMP<sup>3</sup>** comes in: the ramp-up time for installing or modifying a product line can take several months. If many and frequent changes are necessary, such times are not acceptable and, simply, not feasible for a manufacturer. Providing a flexible, quickly adaptable system would, indeed, boost the manufacturers' competitiveness.

**Is the I-RAMP<sup>3</sup> project really strategic for HWH? According to your opinion, how long would it take to implement the project's expected results within a company?**

Yes, it is. This goes back to the middle and long-term perspective I mentioned before. As an entire system it might become relevant once the developments can be implemented in the day-to-day production cycles. This should happen within, let's say, five years after the end of the project. However, we are, of course, interested to take up the emerging results as soon as possible.

**Do you think that the I-RAMP<sup>3</sup> concept will be easily accepted and adopted by the manufacturing industry? As the project coordinator, what could the consortium do to enhance the uptake of I-RAMP<sup>3</sup>'s results?**

In fact, there's a great potential for savings. If the system will show an outstanding performance, it will convince and, hence, will be assimilated. So this is the

biggest incentive. The consortium has to push this awareness, and it does so. For example, one work package is dedicated to collect industrial requirements, on which all developments will be based. The idea is to involve industry and customers at a very early stage already in order to truly meet their needs. Therefore, **I-RAMP<sup>3</sup>** also involves an Industrial Advisory group. Additionally, two partners from the consortium are direct, relevant end-users and can provide us input already during the course of the project. These are, of course, also potential customers.

**What is your long term vision concerning the I-RAMP<sup>3</sup> concept?**

A 100% implementation of the **I-RAMP<sup>3</sup>** concept would of course bring the best benefit. Realistically, it would be a great success if at least parts of the developed components would find their way into the daily manufacturing. Sharing and using the experience and best practices from the partners and their network should really enable the sector to be innovative and progressive.

**Many thanks, Michael!**

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### European initiatives

#### CECIMO - Where manufacturing begins



CECIMO is the European Association of the Machine Tool Industries, it brings together 15 national Associations of Machine Tool Builders, which represent approximately 1500 industrial enterprises in Europe, over 80% of which are SMEs. CECIMO defends the common in-

terests of its members, particularly in relation to authorities and associations. CECIMO also promotes the European Machine Tool Industries and their development in the fields of economy, technology and science. CECIMO covers more than 97% of total Machine Tool production in Europe and more than one third worldwide. It accounts for almost 150,000 employees and a turnover of nearly €21 Billion in 2011.

Further info: <http://www.cecimo.eu/site/about-us/>

### Upcoming events

**20th CIRP Conference on Life Cycle Engineering, 17.-19.04.2013, Singapore, Singapore**

The Singapore Institute of Manufacture Technology (SIMTech), a research institute of the Agency for Science, Technology and Research (A\*STAR), will co-organise this conference with the National University of Singapore (NUS).

The theme for the 20th CIRP International Conference will be **'Re-engineering Manufacturing for Sustainability'** – moving our manufacturing towards zero environmental burdens.

Further info: <http://www.cirplce2013.sg/>

**46th CIRP Conference on Manufacturing Systems, 29.- 31.5.2013, Setubal Portugal**

The topic of this conference will be "Economic Development and Wealth through Globally Competitive Manufacturing Systems". They will discuss and highlight the relevance of manufacturing systems for a sustainable development of societies in different regions in the world, supplying added value products, creating employment and improving the people standard of living.

Further info: <http://cms2013.ceni.pt/>