

# Sense&React Newsletter



## Preface

Dear Reader,

We are glad to introduce you the first Newsletter of the Sense&React IP project. Sense&React is a European Union funded Research & Development Project under the 7<sup>th</sup> Framework Program (FP7). The project has started on 1<sup>st</sup> October 2012 and will last until the 30<sup>th</sup> September 2015. The project engages 12 organizations from various EU countries and the consortium is coordinated by the Laboratory for Manufacturing Systems and Automation (LMS) of the University of Patras, Greece.

Sense&React will deliver an information distribution system that will support the work activities of shop-floor personnel. It will use customized, role-specific user interfaces, through mobile or static displays to support the shop-floor personnel with the adequate amount of information by considering the context and cognitive load.

The research activities of Sense&React are strongly driven and are related to the requirements of the European Industry. The first phase of the project has focused on the definition of a set of industrial pilot cases based on the needs of the project industry namely Volvo, Electrolux and ENP. An additional pilot case has been defined by research partner FIR. The definition of the pilot cases have provided the basis for the definition and consolidation of a set of generic use cases and system requirements so as to broaden the application scope of the Sense&React technology.

The main goal of this newsletter is to provide an overview of the industrial pilots as well as an overview of next steps. Finally, recent project activities and future events are presented.

Sincerely,

The Sense&React project consortium

## The project

Sense&React – The context-aware and user-centric information distribution system for manufacturing (FoF-ICT-2011.7.1, Grant agreement no: 314350) is a European Union funded Research & Development Project.

The project started on **1<sup>st</sup> October 2012**. The overall work plan is divided into work packages and their sub and covers **36 months** of industrial driven requirements, research, development and realization of final demonstrators.

- **Phase 1: Industrial requirements and system specification.**
- Phase 2: Modules development
- Phase 3: Integration
- Phase 4: Pilot cases execution and assessment



## Industrial Pilot Cases

The research activities of Sense&React are strongly driven and are related to the requirements of the European Industry. During the first four months of the project a series of workshops in industrial sites took place in order to identify, analyze current processes and procedures adopted by the three main project end users (VOLVO, ELUX and ENP) and identify points of improvement in which the Sense&React approach looks promising. The Electrolux Porcia Plant, Italy, which is one of the biggest factories for washing machines manufacturing in Europe, was visited in mid-December 2012. In Porcia plant a large number of products and product variants are produced. This product variability introduces a lot of complexity in assembly operations, increased materials handling and higher variability in assembly tasks for workstation operators. Assembly workstation operators as well as line supervisors need support in their everyday assembly and maintenance operations.

*Sense&React represents a strong opportunity for the company to improve factory efficiency, especially supporting assembly and maintenance operations at the factory floor, by providing the proper information the right person at the right time*

### Industrial Pilot Cases

Four industrial demonstrators will be setup:

- ✓ **Automotive – Foundry (Volvo Group):** Support of shop floor personnel operators and engineers to handle maintenance requests and reduce wastage during cores assembly process.
- ✓ **White goods – Assembly line (Electrolux):** Support assembly workstation operators and supervisors by providing customized assembly process information and maintenance support.
- ✓ **Shipbuilding – Metal sheet workshop (ENP):** Support shipyard operators with information on process steps.
- ✓ **Energy efficiency (FIR):** Factory-wide energy efficient production.

Sense&React represents a strong opportunity for the company to improve factory efficiency, especially supporting assembly and maintenance operations at the factory floor, by providing information to the right person at the right time. In early January 2013 a workshop at ENP shipyard in Peniche, Portugal, took place. The workers in the steel workshop should have adequate information on the technical specifications and assembly instructions of the on-going block (plates, profiles and panels) to help them in their work activities. The Volvo Group's plant in Skövde, Sweden, produces some 300 heavy-duty 13- and 16-litre engines a day that are delivered to assembly plants. A Sense&React workshop at Volvo powertrain foundry in Skövde, Sweden, took place in late January 2013. The need for support of shop floor operators and engineers to handle maintenance requests and reduce wastage during cores assembly process was highlighted. Last, but not least, Forschungs Institut Fuer Rationalisierung (FIR) has defined and will implement the "factory-wide energy efficient production" pilot case within the scope of the RWTH Campus Cluster Logistics in Aachen, Germany. Goal of the campus cluster logistics is to make complex interconnections in logistics, production and services visible and researchable.

## Next Steps

Following the definition of the use cases and the system requirements the project is in its second phase. During this phase the initial step is to define the modules that are required to support the requirements and then to implement those modules. The modules will materialize the R&D objectives of the project and will form user applications/demonstrators that can be tested and validated upon the industrial pilot cases. A system architecture has been defined that will enable the coupling (both tight and loose) of the system modules and will enable the deployment of specific applications. Key challenge of Sense&React demonstrations will be the installation of relevant HW (sensors, ICT infrastructure, display devices) and SW (data collection/analysis/synthesis/distribution/display) to support the different roles operating in industrial environments.

## Events

- On 11-12 March 2013, the workshop on the “Impact of the Factories of the Future PPP” took place in Brussels, Belgium. LMS presented Sense&React and technical/non-technical cross cutting issues with other FoF projects was discussed.
- On 4 and 5 April 2013 the 2nd Consortium Meeting and General Assembly took place in Gothenburg/Sweden. The focus of the meeting was to finalize the definition of the industrial pilot and to prepare the approach to meet the research objectives of the project.
- On 7<sup>th</sup> June 2013 the EFFRA ([www.effra.eu](http://www.effra.eu)) Assembly workshop on “Human-centred Manufacturing” took place in Brussels. LMS had the opportunity to discuss the challenges of applying the project demonstrator in real industrial environment with other experts on the field.
- On 12-14 June 2013 the imagineFOF2020@Geneva took place (<http://www.innolab-swiss.eu/cde.html>) and LMS presented Sense&React. The goal of the event was to initiate synergies and convergences between several respective FP7-FoF projects

## Upcoming events

- The next Sense&React consortium meeting will take place on 3-4 September 2013 in Lisbon hosted by the Instituto Superior Tecnico (IST).

### Follow us



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*Context-aware and user-centric  
 information distribution system for  
 manufacturing*

Find us on the Web:  
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## Consortium



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