ProSEco

Newsletter

Newsletter 1 – March 2014

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Message from the Coordinator

The scenarios on the Future of Manufacturing in Europe 2015-2020 (FutMan) offer imaginative pictures about potential socio-economic developments and future technologies that are likely to shape the European manufacturing sector over the coming years. The sector will be confronted with an increasingly competitive economic climate, global competition and the European strategy for sustainable development. The pressure on industry to successfully compete in globalised markets will require rapid responses to continuously changing business environments.

Challenges that need to be addressed in those scenarios are increase supply chain efficiency, minimise the environmental burden of production and consumption, integrate new knowledge from customers and product use patterns and improve workforce skills, anticipate new **market** and societal needs.

It´s a pleasure to introduce ProSEco project, a four year project started in October 2013, and a really high level Consortium with six Research partners, one industrial association, one technology transfer SME and one ICT vendor in technological areas as Ambient Intelligent solutions, Collaborative Environments for Meta Products and process design, Eco-design rules and Life Cycle Analysis techniques. It is led by five industrial partners from automotive sector, machine construction, machine tool builder and home appliances.

ProSEco will allow manufacturers to effectively design Meta Products embedding more and more knowledge in products by cost effective creation of services and production processes in order **to meet dynamically changing needs of customers** as well as **optimise environmental impact** of their products and processes.

Enjoy this first ProSEco Newsletter!

Contact via the **Project Coordinator Tecnalia**

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Objectives

A novel methodology and a comprehensive ICT solution to support industries in the areas of collaborative design of product-services and production processes, using Ambient Intelligence (AmI) technology, lean and eco-design principles and applying Life Cycle Assessment techniques, will be provided to allow for effective extensions of products of manufacturers in different sectors and for enhancement of the products-services and their production processes in the direction of eco-innovation.

Manufacturing industry nowadays needs to move towards a new concept of Meta Product, extending their products with different novel, personalised and context sensitive product and customer support services. Meta Products integrate Product Extension Services (PES) needed in wide range of applications, as in e.g. services to support adaptation of the product design to personal needs to, among others, be able to cost effectively provide these services to customers distributed world-wide.

The ProSEco project will result in a set of ICT tools and methodologies which enable the collaborative building of new eco-innovative product-services or Meta Products, which integrate highly personalised innovative functions with minimal environment footprint impact along the overall Life Cycle.
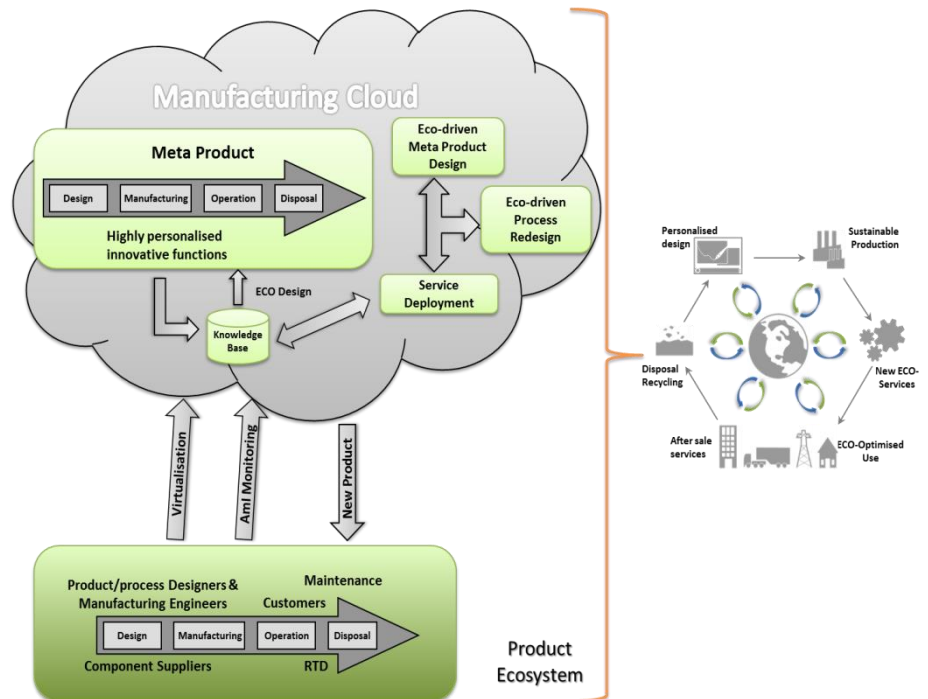
Targeted results

The ProSEco project is split into a Business Case specific part, which deals with the specific technology needs of the respective industrial partners, and a generic part which comprises the following components:

- **Collaborative Eco-Innovating Design Methodology**

- **A set of engineering tools** including Knowledge Management and base, Collaboration tools, Simulation of Meta-Products, Context modelling tool, Eco-design rules and metrics using Life Cycle Assessment (LCA) techniques, Security tools, Configuration tools, Tools for definition /design of AmI solutions, Customer and supplier behaviour (data mining) and Product/process evolution

- **Meta-product process development Platform**

- **Product Extension Services (PES) deployment platform**

- **Configurable Service Broker based on Cloud Manufacturing approach**

- **A set of core generic services**, including in a first step, Ambient Intelligence (AmI) based monitoring, Context monitoring services, Knowledge Provision Services for customer and Environmental (impact) monitoring and optimisation services

Project realisation

The approach will be driven by four application scenarios (Business Cases) in the areas of automotive (VW), home appliances (Electrolux) and automation equipment (DESMA, ONA and Alberdi).

Personalised support to drivers to optimise energy use (on classical, hybrid and electrical cars) - VW intends to introduce new product and customer support services and business models through the new ProSEco solutions. By using the AmI infrastructure and extracting/identifying the driver current context, VW can provide highly personalised services.

Services to support remote condition based maintenance of household appliances - The idea is to develop and install electronic devices/sensors, suitable for different types of appliances and based on a common software interface, remotely accessible, where all information on connected appliances are quickly available in order to detect, identify and solve problems. This capability should permit remote predictive maintenance and guarantee a better organization and optimization of the Service Support.

Services for personalised design and manufacturing of new shoes - To support the introduction of PES in DESMA in cooperation with the shoe manufacturers and other suppliers within product ecosystem (by provision of data needed for collaborative work with geographically distributed teams) and in order to allow customer driven shoe production and so called "urban manufacturing", DESMA intends to apply intelligent PES services and will make intensive use of information from AmI integrated in their machines.

Lean-based design of eco-driven services around machines – This BC involves ONA, for their whole life cycle of machines, and their value chain supplier Alberdi. With the ProSEco platforms, services and tools, both partners foresee development of services for collaborative design and remote maintenance. For this, ProSEco proposes to install intelligent PES to services and make intensive use of AmI sensor information for monitoring in order to identify customer's patterns of use to redesign machines or parts, focusing on those elements with more environmental impact.

Research and software vendor partners

The four application scenarios will be supported by further nine Research, University and software vendor partners.

The main role of Tecnalia is to coordinate the project. Furthermore it will lead the activities on the overall ProSEco concept definition and the work package on Lean-based eco-driven product and process design.

The role of ATB is to lead the work on AmI based & context sensitive product-services and the tasks on dissemination and business case analysis and requirements collection.

The role of Uninova is to lead the Integration, Collaborative Design Platform, Service Deployment Platform & Infrastructure work package and is furthermore responsible for the update of the State of the Art.

The role of VTT is to lead the specification and implementation of the Simulation Tools for Product/Process Design. Furthermore, VTT is responsible for the Training task.

The role of CNU is to lead the methodology task of the AmI based & context sensitive product-service and support the specification and implementation tasks. Furthermore they contribute to the Integration, Collaborative Design Platform, Service Deployment Platform & Infrastructure work package.

The role of USAL is to lead the Collaborative product services & process design work package and the task regarding the elaboration of a methodology and specification and the implementation of the Collaborative development platform, KM services & configuration management services.

The role of LEI is to contribute to Dissemination task and will support the disseminating and transferring results to Central European countries and will also mainly contribute to the Test & Assessment work package.

The role of The Open Group is to lead the dissemination, exploitation, standardisation & training work package and the standardisation task. Also, they contribute to the collaborative product services & process design and integration, collaborative design platform, service deployment platform & infrastructure work package.

The role of Semantic Systems is to be the ICT vendor of the ProSEco project and lead the activities for Infrastructure as well as Exploitation. Main contribution is the specification and development of the Infrastructure and more specifically in the modellisation and configuration management tools.

Past Events

ProSEco was presented in the Impact workshop of the Factories of the Future PPP 24-25 March 2014, Brussels, Belgium. ProSEco has been clustered in Session 2.1: Simulation, Modelling and Forecasting in Digital Factories; Area 2: Innovative Design of Personalised Product-Services and of their Production Processes Based on Collaborative Environments with the projects USE-IT-WISELY (http://www.use-it-wisely.eu/) and EASY-IMP (http://easy-imp.dfki.de/). The Project Officer rapporteur from this session track provided a list of clustering activities proposed by organisations attendees related to the impact. The list vary from "Joint Standardisation efforts interoperability, ontologies, etc." to "Develop jointly exploitation concepts in view of new innovation support projects in H2020" or " Joint demos".

In this framework we would like to invite all projects that are related to the ProSEco topics to contact us (see contact on the Newsletter's first page) for joint Newsletter articles or other joint activities.

Upcoming Events

- **April 2014:** Industrial Technologies 2014, Smart Growth through Research and Innovation, Athens Greece

- **April 2014:** European Conference on Computer Systems (EuroSys) 2014, Amsterdam, The Netherlands

- **June 2014:** 20th ICE Conference – IEEE TMC Europe Conference, Bergamo, Italy

- **July 2014**: INDIN'2014: International Conference on Industrial Informatics, Porto Alegre, Brazil

- **July 2014:** SysInt 2014: 2nd International Conference on System-Integrated Intelligence, Bremen, Germany.