

## Project Update

June 2012

### The ADVENTURE begins

Welcome to the first ADVENTURE newsletter. The project started on the 1<sup>st</sup> September 2011 and lasts for 3 years. The overall goal of ADVENTURE is the creation of a framework that provides tools to combine factories in a pluggable way to manufacture a particular product. This includes the creation of manufacturing processes, finding partners as well as real-time monitoring of the processes that are put into play.



**Kick-off meeting Family Photo**

### About ADVENTURE

ADVENTURE is a Research and Development project in the area of Virtual Factories and Enterprises sponsored under the European Commission's 7<sup>th</sup> Framework Programme as well as the project's partners. 10 partners are involved including technology providers, academics and user organisations. The partners are spread across Europe.

### What will ADVENTURE do?

The concept of combining the power of several independent factories to achieve complex manufacturing processes as so-called Virtual Factories is not new and has been addressed by several research projects in recent years. However, most of them are limited to create Virtual Factories at a business level and in many cases they concentrate on the partner-finding and factory-building processes.

Still, no proven tools and technologies exist in the market to provide valuable end-to-end integrated Information and Communication Technology (ICT) in such environments. ADVENTURE will help Virtual Factories and enterprises move beyond existing operational limitations by providing concrete tools and approaches for leveraging the information exchange between factories. Factory process optimization will be enabled by the integration of runtime factory selection, forecasting, monitoring, and on-the-fly collaboration. ADVENTURE aims at simplifying the establishment, management, adaptation, and monitoring of dynamic manufacturing processes in Virtual Factories by building on concepts and methods from the field of Service-oriented Computing and therefore benefitting from the progress that has been made in this domain over the last few years. Technologies from the field of Ubiquitous Computing and the Internet of Things, e.g. wireless sensors, will be adopted in order to support the monitoring and governance of processes, i.e. give information about the current status of manufacturing and delivery.

### Current status and next steps

After identifying the requirements, the Global Architecture of ADVENTURE was defined and the functionality specified. Currently the Technical Specification is in progress. The first draft of the document is already finished and the project partners are looking for suitable technologies for the ADVENTURE components. In the upcoming consortium meeting in Amsterdam the project partners will clarify the last questions to the process flow of the system. In the next 3 month the first prototypes of Message Routing, Cloud Storage, Data Provisioning and Discovery, Process Designer, Process Execution and Adaptation components will be created.



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## Deliverables

The following deliverables are available to download from the website:

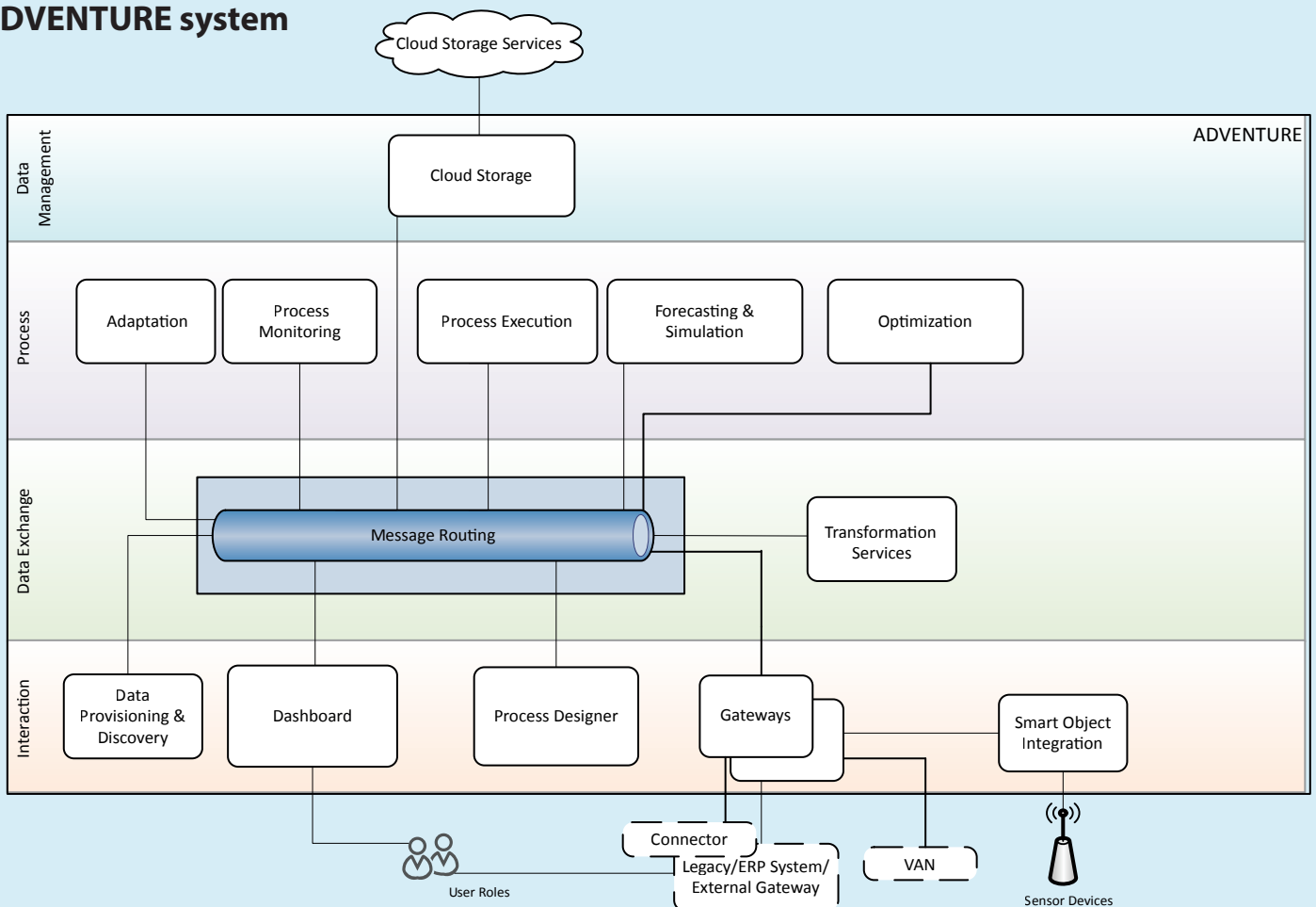
- ADVENTURE-Glossary
- Project Vision Consensus Document (D2.1)
- Target Market Sector Descriptor (D2.2)
- Requirement Analysis Report (D2.3)
- Global Architecture Definition (D3.1)
- Functional Specification (D3.2)
- User Interviews Feedback Report (D7.1.1)
- Use Case Specification (D7.1.2)

## Publications

The following publications were published by project members as part of the project. Further information can be found on the website:

- Virtual Enterprise Management to Enhance the Manufacturing Process Collaboration
- An 'Adventurous' Approach towards Virtual Entrepreneurship
- SPRINT- Responsibilities: Design and Development of Security Policies in Process-aware Information Systems

## Architecture of the ADVENTURE system



**ADVENTURE** consists of 13 components that are arranged in 4 layers. These layers are:

- **Interaction** layer contains the components that act as an interface to ADVENTURE. It includes user interfaces such as the Dashboard and components that allow to connect external systems such as Legacy ERP systems or smart objects.
- The **Data Exchange** layer consists of Message Routing, which provides the communication between all components and the Transformation Services that will be used to support different data formats and translate between them.
- The **Process** layer contains five components that allow to adapt, simulate, optimise, execute, monitor and forecast processes.
- **Data Management** layer consists of the Cloud Storage component, that offers the possibility to store data in the cloud.