Project Synopsis

Scalable Semantic Product Data Stream Management for Collaboration and Decision Making in Engineering

SMART VORTEX

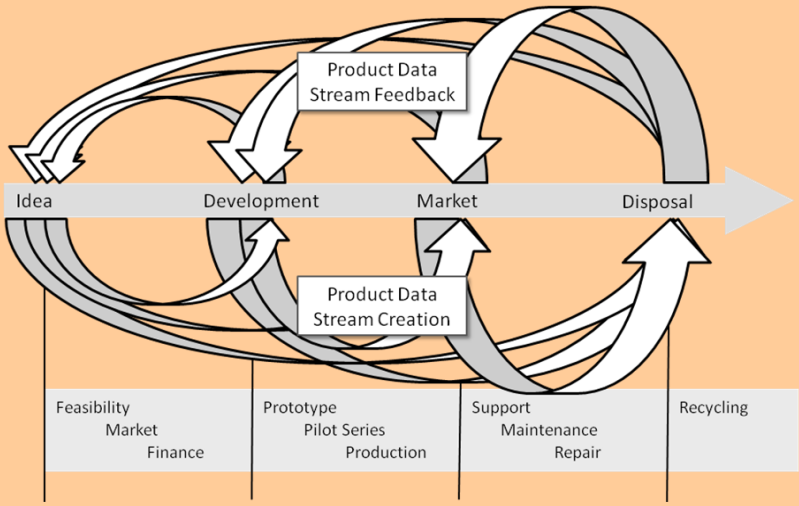
www.smartvortex.eu

Innovation through an intelligent analysis of massive data streams

SMART VORTEX Project aims at providing a technological infrastructure and interoperable methods, tools, and services that will support large-scale industrial innovation and collaborative engineering projects; making possible that information management will underpin an intelligent analysis of massive data streams and growth of business value and capabilities.

In this project, the union of all product data streams, both along the direction of the product lifecycle and the product and innovation process feedback, is called SMART VORTEX. It comprises amongst other, sensors` data, design, simulation, experimental, and testing data, multi-media collaboration data and data from higher level inferred events generated by analyses.

Project description



EU Industry Competitiveness requires knowledge-driven innovative business models covering the entire product lifecycle, to secure high customer satisfaction and loyalty; successful, market oriented products, domain-knowledge based decision processes and knowledge based leadership.

This is the particular case of Machining, Aerospace, Automotive, Consumer Electronics/Telecom industries working in complex collaborative scenarios, with similar data intensive processes and needs.

In industry, the volume of data stream is rapidly increasing and is already far too excessive for individual human processing. In practice, this leads to situations where the usage of this important data is either limited or even completely omitted.

The ability to capture this tractable information and to deliver the pertinent information hidden within these massive data streams at the right time to the right place will be a core competence in design and engineering endeavours. That is because decision making, engineering, and collaboration depend on the availability and accessibility of pertinent information.

SMART VORTEX will create a suite of innovative high-impact components.

The single most important outcome of SMART VORTEX is the integration of component results into an application solution platform infrastructure where its components are covering all target outcomes: capturing tractable information, delivering pertinent information for collaboration and decision support.

The SMART VORTEX Suite is an infrastructure containing architecture, methods for intelligent management and analysis of massive data streams, tools and services for supporting large-scale collaborative engineering projects.

SMART VORTEX could only be possible as a result of marrying two long standing collaboration networks around a common vision: 14 Partners from 5 EU member states, 7 scientific research institutions, 7 manufacturing and/or advanced services companies. SMART VORTEX Industrial Partners will be able to show the viability of implementing the resulting solutions, as well as actively start firstly internal outreach and take-up and then external outreach and take-up promotion activities.

SMART VORTEX is an ambitious market driven RTD initiative with an expected short Time-To Market of Project Results, as Early Adopters have an existing Demand and Take-up of outputs should be reached within the lifetime of the project. SMART VORTEX SME Partners will commercially exploit software results.

Technical details

SMART VORTEX workplan is organized in four overlapping cycles that comprise the development of all project processes:

1. *Inception &Elaboration* is the first cycle, aimed at creating "common ground" among all consortium participants. This cycle has started with the definition of requirements analysis, which comprised setting up the definition of the standard RTD workflow of requirements needed for the RTD cycle of the project.

2. *Requirements analysis and identification of user scenarios*, aimed at collecting the needs and expectations of end users and service providers for SMART VORTEX development.

3. *Suite modeling, data & system architecture* to create the technological framework

4. *Semantic data stream models and access language*; aimed at developing semantic models for sensors data streams and collaborative models.

Along 2011 efforts will be focused on consolidating the first and second cycles of the project. On the one hand, actions will be centred in securing the project roll-out and consolidating a shared vision for common understanding among partners on the operational details of the project. On the other hand efforts will pave the ground for the creation of SMART VORTEX infrastructures and services.

Main activities will comprise analysing how and for what needs SMART VORTEX can enhance business value and capabilities in large-scale engineering projects, developing the needed semantic models and languages for the SMART VORTEX suit and securing a proper dissemination of the project.

SMART VORTEX will produce demonstrators to be used for outreach and industrial take-up as public deliverables related to its Outreach and Take-up activities. This serves SMART VORTEX's dissemination and outreach interests and also protects the IPR of its Industry Partners.

General presentation attached

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