Project Results

InValue

Implementing the “boundless enterprise” paradigm

EXECUTIVE SUMMARY
Consistent and end-to-end data management throughout the whole production process – the ITEA project InValue (Industrial Enterprise Asset Value Enablers) enables companies to build specific applications on a shared information architecture and finally implement the “boundless enterprise” paradigm.

PROJECT ORIGINS
Global competition, technology trends, digitalisation, development costs, product life cycles … these are all factors that constantly shift and shape the industrial landscape. As a result, industrial processes have to be remodelled, new partnerships formed, new business models adopted and the use of information and knowledge intensified. What is needed is a service platform to support these new paradigms, relying on existing standards while combining novel and integrated solutions for the content and knowledge management of heterogeneous information derived from various sources.

InValue addressed these needs by developing such a service platform. It includes information acquisition and aggregation, representation, analysis and exchange between smart devices, automation systems, information systems and respective stakeholders, such as technical and management staff, as well as suppliers and customer organisations. The development and prototypical implementation of a distributed data acquisition infrastructure means that smart objects, enterprise data stores and sensor data can be integrated. Also, by realising a semantically enhanced data processing backbone and defining data delivery interfaces, the acquired data can be interpreted and homogeneously transferred to downstream business analytics services and operational service components.

TECHNOLOGY APPLIED
Bearing these integration features in mind, the service platform capabilities developed by the InValue project were explored through a number of demonstrations from different industrial domains in order to reveal the economic and societal potential of the solution. In the Belgian use case, Barco investigated predictive end-of-life and maintenance models in a projection light lease set-up whereby light is sold at a fixed price per projection hour. This included real-time monitoring of lamp performance, predictive alerts to replace lamps before they fail along with purchase, selection, supply and warranty claim management of lamps. In Spain, the focus lay on manufacturing and quality control through virtual metrology for EPC’s camshaft production lines including system integration, real-time information, traceability enhancement and knowledge generation.

Neighbouring Portugal concentrated its efforts on proactive maintenance approaches in which Facort, a metallurgic company specialising in precision parts, wanted to reduce machine downtime and prevent and diagnose failures. The current prototype contains an acquisition system for collecting real-time data at Facort and transforming the data with Big Data analytics to generate meaningful information as well as a dimensionality reduction. This information is then presented to users on the basis of their access rights. The InValue Cloud Platform for collecting data from the production machines, ERP and
MAJOR PROJECT OUTCOMES

Dissemination
- 4 publications (e.g. ISAMI, WorldCist)
- 8 presentations at Conferences
- 1 press Release
- 7 end user Presentation
- 3 workshops (e.g. ITEA Digital Transformation Masterclass)

Standardisation
- 2 contributions to standardisation bodies (e.g. QIF standard for quality related information sharing and Integration of 3D optical sensor with robotics)

Products/Services
- 1 new product (Quality information sharing tool)
- 3 new services (Manufacturing monitoring at part and system, Statistical analysis for manufacturing assess, On-line integration of 3D optical systems)

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