



eScop

Embedded systems for Service-based control of Open Manufacturing and Process Automation

EXECUTIVE summary

eScop develops a core of the Manufacturing Execution System that overcomes current problems of system integration from shop-floor control to factory management levels by merging the power of knowledge representation, service orientation and embedded systems.

RELEVANCE CALL objectives

eScop addresses the ARTEMIS sub programme ASP4: Embedded Systems for manufacturing and process automation. It focuses on two fundamental industrial priorities:

- > reference designs & architectures, and
- > seamless connectivity and semantic interoperability.

MARKET innovation

eScop project results will impact entire value chain of the production and process automation industries, creating new market opportunities for end-user SMEs. The role of stakeholders is being shifted towards knowledge users/creators.

Utilization of the open standards in eScop will significantly reduce the cost and knowledge thresholds for SMEs. Open standards will provide an access to sophisticated production solutions without a need to abolish own developments.

Moreover the project will allow new actors to be introduced to the production value chain, where each stakeholder will be able to encapsulate specialised know-how as an application which can be easily integrated using a semantic-based approach.

TECHNICAL innovation

eScop methodology assumes representation of production-related knowledge in self-descriptive form of ontologies. Collaboration of semantically rich services requires less coordination efforts at the moment of development enabling more flexible and dynamic integration. Embedded systems can enable such services on shop-floor device level seamlessly including them to factory ecosystem. The methodology also considers outsourcing of the computational processes to public/private clouds.

eScop will result in an distributed and semantically annotated solution, which includes visualisation whereby the visualisation agents can also become key components of the reasoning loops with the ability to provide feedbacks and to allow knowledge capture hiding complexity from the end users.

eScop provides a reference architecture and core elements, which allow to discover, to evaluate system needs and capabilities and to integrate service applications for supervision and control of production systems.



eScop

PROJECT COORDINATOR	START
Prof. Jose L. Martinez Lastra	March 2013
INSTITUTION	DURATION
Tampere University of Technology	36 months
EMAIL	TOTAL INVESTMENT
jose.lastra@tut.fi	€5.82M
WEBSITE	PARTICIPATING ORGANISATIONS
www.escop-project.eu	10
	NUMBER OF COUNTRIES
	4



FINLAND

Fluid HOUSE

TAMPERE UNIVERSITY OF TECHNOLOGY

ithicontrol

POLAND

espeo SOFTWARE

Warsaw University of Technology

ITALY

POLITECNICO DI MILANO

incas supply chain automation

scmgroup

CZECH REPUBLIC

UNIVERSITY OF WEST BOHEMIA

iconics Visualize Your Enterprise™