ITEA 3

Project Profile

ENTOC

Engineering Tool Chain for Efficient and Iterative Development of Smart Factories

The ITEA 3 project ENTOC focuses on the engineering of smart factories as they are established in different domains with the goal of developing standardised modelling strategies and optimising the engineering tool chains used for complex production plants. An important criteria is the minimisation of the necessary engineering time and effort coupled with the maximisation of reliability to achieve the intended production performance and integrity of documentation information.

ADDRESSING THE CHALLENGE

Short time-to-market of innovative products is a key success factor for industrial companies. Virtual engineering and virtual commissioning as parts of systems engineering shorten the time for real plant or factory commissioning. But those technologies involve additional engineering efforts. The main goal of the ENTOC project is to reduce those efforts by introducing multi-vendor model repositories for easy access to equipment component models, by integrating feedback information from operation and maintenance phases into planning processes and by specifying and interpreting standards-based interoperable models and interfaces.

Marriage station

PROPOSED SOLUTIONS

The approach involves developing extensions to existing engineering tools (like CAD, ECAD and control programming tools), simulation tools and the development of server-based model distribution systems. The main goals will be achieved by addressing innovation aspects like:
a) modelling component packages addressing all the relevant component aspects (like mechanics, electronics, software, behaviour) in a standardised way;
b) model transformation between standards used for modelling;
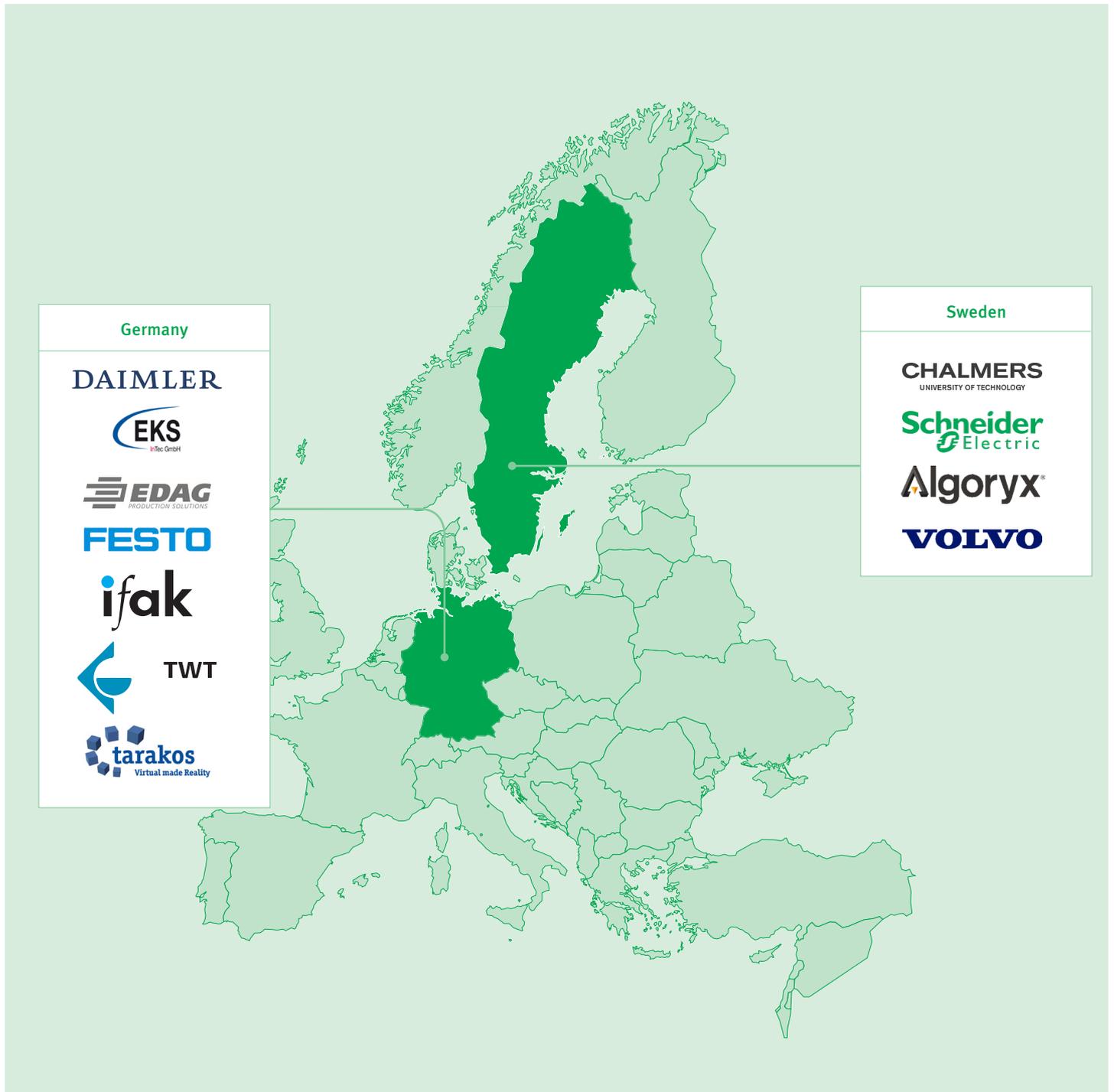c) identification and extension of missing standards;

d) definition of model libraries in an App-store like manner;
e) enhancing App-store concept by bi-directional version management with standardised ID's;
f) management of component intellectual properties; and
g) interoperability of models across the engineering tool chain.

PROJECTED RESULTS AND IMPACT

ENTOC will generate a formalised specification of requirements that will enable the automatic creation of proposals for which mechatronic components fulfil the expectations and thereby greatly improve

the engineering, commissioning, operation and maintenance process of the complete car/truck manufacturing or machine building applications. Seamless access to engineering data will dramatically reduce the training effort of maintenance personnel and provide best practice experiences while the flexible extension of systems engineering approaches will dramatically increase the number and the variety of applications available in engineering addressing the car/truck manufacturing and machine building. In turn, engineering tool providers will come up with enhanced model transformation and interface functions that support ENTOC concepts.

ENTOC

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Germany

DAIMLER

EKS InTec GmbH

EDAG PRODUCTION SOLUTIONS

FESTO

ifak

TWT

tarakos
Virtual made Reality

Sweden

CHALMERS
UNIVERSITY OF TECHNOLOGY

Schneider Electric

Algoryx

VOLVO

Project start
September 2016

Project leader
Thomas Bär, Daimler AG

Project website
http://entoc.eu/

Project end
August 2019

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