

ImportNET

The Ontology Integration Tool is used in the set-up phase to configure semi-automatically, the collaboration ontology. The collaboration ontology provides the terms of reference which are valid in a specific cooperation between companies engaging in the design of a new mechatronic product.

The Intelligent Adapter Generator Tool is a support tool for IT integrators to semi-automatically construct the source code of an adapter which connects the SAS with an external system.

MDET, SAS, OIT and IAGT make up the integration environment which is responsible for the semantic integration of external systems.

Benefits from ImportNET solution for the potential market

Estimates say that 80% of the IT costs of non-software enterprises are related to integration topics. ImportNET offers service oriented solutions for "real life" problems in cross-domain engineering and a promising approach for efficient semantic integration of applications and processes. A large part of the software modules developed within ImportNET will be open source and published at the end of the project. The remaining modules will be offered by the ImportNET exploitation partners at a reasonable price. Thus, IT consulting companies may use the software for their own business (see also ImportNET open source community).

ImportNET community

The ImportNET project invites interested enterprises to participate in the ImportNET community. There are two community groups:

- | ImportNET open source community and
- | ImportNET validation group

You can visit us at community.importnet-project.org

ImportNET conference

The ImportNET conference will take place on 24/25 May 2009 in Salzburg, bringing together practitioners and researchers from the fields of engineering design and collaboration of networked enterprises. <http://iccme.salzburgresearch.at>

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Salzburg Research Forschungs-
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SIASUN robotics



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Prolon Control Systems

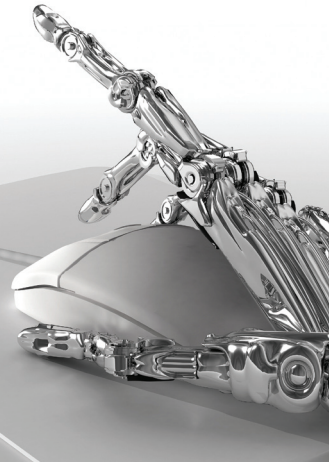
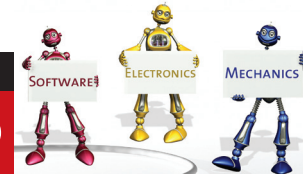


Facility and Management



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www.importnet-project.org

ImportNET

Intelligent modular open
source platform for inter-
cultural and cross-domain
SME Networks

Cross-domain engineering with ImportNET

Until now, engineering tasks have been carried out in their separate domains (mechanics, electronics, and embedded software design) using specific development methods and applications that are established and trusted within each domain. Each domain is characterized by its own ways of thinking, conceptual models and engineering experiences. However, the integration of heterogeneous components into a single and coherent mechatronic product requires more! It requires cross-domain communication and cooperation between the technical disciplines.

ImportNET enhances existing domain applications (like ECAD, MCAD systems) by providing software supported bridges between the domains thus delivering a semantically coherent solution for cross-domain engineering services.

ImportNET Vision

ImportNET – Connecting engineers across different domains and cultures for efficient collaborative product development
 ImportNET – Providing an open-source environment and operative models for mechatronic engineering

Objectives of ImportNET

The objectives of ImportNET are to provide:

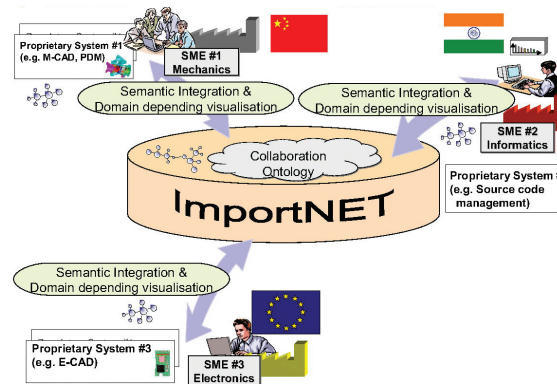
- | An integration framework for efficient and customized collaboration setup and
- | An advanced ready-to-use solution for cross-domain engineering tasks.

The integration framework will enable fast and highly customized semantic integration of existing domain applications and processes. The target customer group of ImportNET are IT integrators and consulting enterprises. ImportNET supports the cross-domain engineering tasks by providing an advanced service-based ready-to-use solution (e.g. ECAD-MCAD collaboration). The existing systems will be integrated into the solution using the integration framework.

ImportNET engineering support (Use Cases)

In order to bridge between domains it is necessary to integrate existing applications in these domains. About 80% of the IT costs of (non-software developing) enterprises are related to integration topics. Thus, one of the main targets of ImportNET is to provide an integration framework which allows to significantly reduce such costs. With the MDET/SAS integration modules ImportNET provides advanced software which supports engineers in their daily work. The ImportNET engineering support addresses the following four major use cases:

- | Providing a versioned and consistent integrated view of all information (e.g. design documents) related to the mechatronic product
- | Generating a bill of materials containing mechanical, electronic and software components
- | Performing an engineering change process based on standard reference processes
- | Supporting online ECAD / MCAD collaboration such as negotiation of the collaborative redesign of a PCB board with respect to a late change in customer requirements

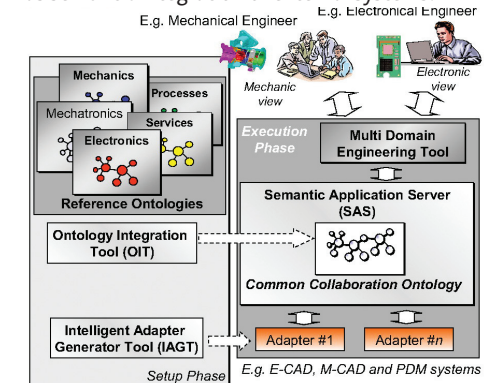


Semantic integration and domain oriented visualisation

ImportNET technical approach and solution

ImportNET addresses short-termed and dynamic intercultural cross-domain collaborations by a software solution that bridges the different engineering domains. This is achieved through an ontology-based methodology which will allow for a fast and

flexible semantic integration of proprietary systems. Therefore, the key challenge of ImportNET is to analyse, conceive, and develop mechanisms for semi-automatic ontology-based filtering and domain-related visualisation of engineering data, as well as semantic integration of external systems.



ImportNET framework

The main issues addressed in ImportNET are the integration on a semantic level and cross-domain collaboration. In order to reach this objective, it is necessary to establish a common understanding of data, services and processes between collaborating enterprises to answer intercultural problems. In order to realise these requirements, the ImportNET framework incorporates (see Figure above):

- | Multi Domain Engineering Tool (MDET).
- | Semantic Application Server (SAS)
- | Ontology Integration Tool (OIT),
- | Intelligent Adapter Generator Tool (IAGT),

The Multi Domain Engineering Tool supports the cross domain engineering process by providing a domain dependent yet semantically integrated view on otherwise heterogeneous engineering data.

The Semantic Application Server is an ontology-based programming platform for business applications. The SAS manages distributed data sources and provides ontology-based access to the data. It is the backend server for the Multi Domain Engineering Tool.