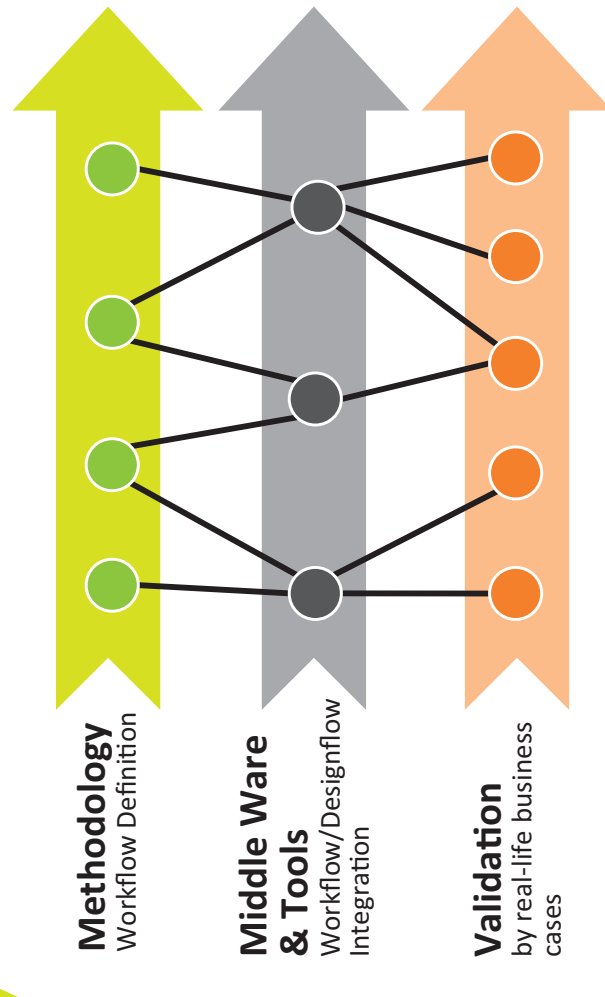


Workflow in CORONA



CORONA covers the development of a dedicated product engineering methodology, the middleware and tools as well as the real life validation.



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Software Tools and Services

for Product Engineering in Micro- and Nanotechnologies

www.corona-mnt.eu

A NMP project in FP7 funded by the European Commission
 NMP2-SL-2008-213969



Current situation

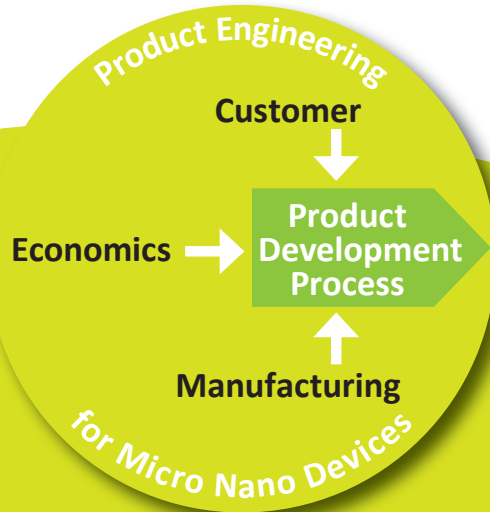
Development and manufacturing of micro and nano devices (referred to as product engineering) are strongly interdependent. The design affects the appropriate technology and the fabrication processes have an impact to design issues vice versa.

Further more micro- and nanotechnologies often go along with a distributed value chain with development and manufacturing at different locations. Generally a variety of business models exists to cover this value chain. Frequently small and medium-sized enterprises (SME) are involved and a strong customer orientation is the basis of the business.

Product engineering in this environment is a complex task and means inter alia to manage the relationships:

- customer/producer,
- design/manufacturing,
- cost/time-to-market.

This task requires appropriate and adapted methods and procedures as well as software support to be developed to cope with technical constraints and business models.



Project results: Methodology

A dedicated product engineering methodology was established by CORONA to take these requirements into account.

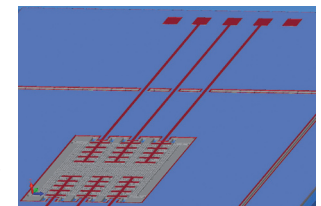
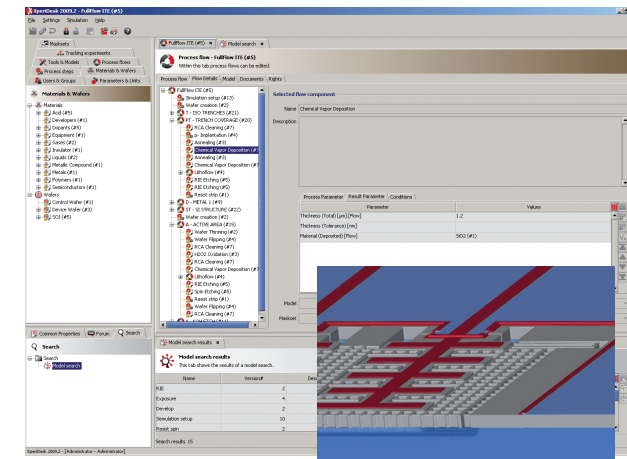
A software architecture concept was then deduced from the methodology including the common standards for CORONA.

The methodology is based on an interwoven approach taking standards in product engineering (e.g. Stage-Gate™) into account as well as experiences in classic project management (e.g. PRINCE2™).

Project results: Software tools and services

3D Fully Parametric Schematic Editor	Coventor Sarl
Process and Material Editors	Coventor Sarl
Cross-Section Editor	Universität Siegen
Physical Layer Analyser	Universität Siegen
Process Recommender	Universität Siegen
Interface to TCAD Simulations	Universität Siegen
Interface to Manufacturing Execution System	Process Relations
Heterogeneous Device Oriented Simulation System	Instytut Technologii Elektronowej
Links for Virtual Manufacturing with SEMulator3D	Coventor Sarl
Process Design Kits	Coventor Sarl
Generic Reporting and Search Framework in Xperidesk	Process Relations
Exports of PDKs from XperiDesk	Process Relations
Imports of PDKs into XperiDesk	Process Relations
Extensions to the Electronic Development Flow	ELMOS
Integration with MEMS and EDA	Coventor Sarl
Electronic Product Engineering Flow	ELMOS
Distributed Project Binder	Universität Siegen
Interface to Measurement and Analysis Equipment	Process Relations

An aspect of major concern handled during the product engineering process is IPR protection. One important goal of CORONA is to provide a distributed software and knowledge environment that makes process knowledge available to possible users all over Europe. Nevertheless it is crucial to make technology data accessible only in the most controlled manner, so that only authorized business partners will have access to any particular information of interest.



Simulations by different tools driven from a single source and environment.

Details on the extended and innovative software tools of CORONA are described on the website: www.corona-mnt.eu/Project/Software