

**KNOW4CAR– An Internet-based Collaborative
Platform for Managing Manufacturing Knowledge**

Funded under 7th FWP-2011-NMP-ICT-FoF



ENEPLAN– Energy Efficient Process pLanning system

Funded under 7th FWP-2011-NMP-ICT-FoF



**EVOLUTION - The Electric Vehicle revOLUTION
enabled by advanced materials highly hybridized
into lightweight components easy to be integrated
and dismantled in a reduced life cycle cost logic**

Funded under 7th FWP-2012-NMP-GC-2



**CONVENIENT – Complete Vehicle Energy-
saving Technologies for Heavy Trucks**

Funded under 7th FWP-2012-SST-GC-2.2



Soc. Cons. Innovazione Automotive Metalmeccanica a r.l.

Via Nazionale SNC – 66030 Santa Maria Imbaro

Contact:

E-mail

Website

Tel.

polo@innovazioneautomotive.eu

www.innovazioneautomotive.eu

+390872660341

KNOW4CAR

An Internet-based Collaborative Platform for Managing Manufacturing Knowledge

www.know4car.eu

| | |
|-----------------|-------------|
| Consortium | 11 partners |
| Duration | 51 months |
| EU contribution | ~6,2 M€ |

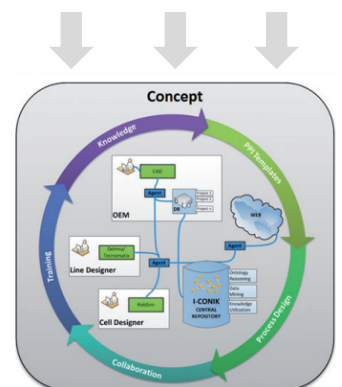
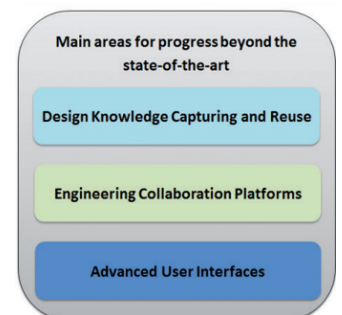
KNOW4CAR aims at delivering a state-of-the-art **web-based ICT platform for managing manufacturing knowledge to support collaborative development of product and/or manufacturing systems** in a structured way, comprising the following key characteristics :

- A **more efficient knowledge management** and **collaboration** throughout the product lifecycle in the context of the **extended enterprise**
- **Revolutionized UI context** in the engineering office and the shop floor
- **Autonomous SW agent to support everyday work of engineers**

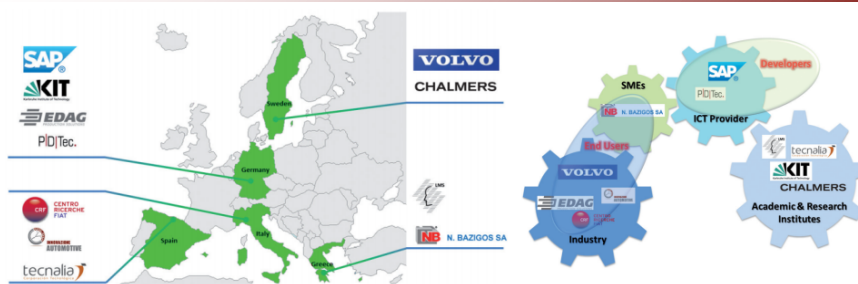
Objectives

Know4Car will develop and integrate the following 4 components:

- **Manufacturing Process Knowledge:** an ontology-based database through which knowledge related to process design may be structured and organized, so that it may be managed more efficiently
- **Agent-based Engineering: an agent-based platform which is able to plan and simulate possible solutions** on basis of and extending the manufacturing process knowledge, and interacting with the extended engineering component.
- **Extended Engineering: provide** support for an efficient collaboration across organizations in terms of data sharing, enabling organizations to share relevant data over a data repository, and process sharing, providing pro-active coordination of engineering and data management processes for projects across the engineering supply chain.



Partners



ENEPLAN

Energy Efficient Process pLanning system

www.eneplan.eu

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|-----------------|-------------|
| Consortium | 17 partners |
| Duration | 36 months |
| EU contribution | ~5 M€ |

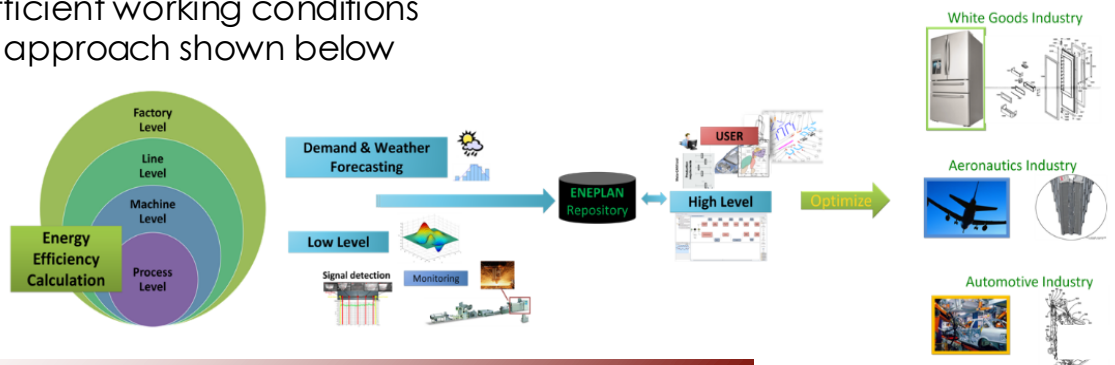
ENEPLAN will develop a **digital & real, energy-efficient, multi-process, networked, Meta-CAM tool** for **optimum process planning** from a given set of production requirements, adapted to the functional specifications of metal formed or machined parts for *automotive, aeronautic and domestic appliances* and that will be able to be used from the conceptual phase of the product to the final dispatch of the product to the customer, following the approach of **Green Manufacturing**, intended as

- **Energy efficiency**
- **Environmental friendliness**
- **Quick respond to market demands**

Objectives

- **Environmental footprint reduction** for metal formed parts
Target : - 40% of lifecycle energy consumption (from cradle to grave)
- **Energy efficiency improvement in working conditions**
Target : - 30% energy consumption
- **Multi-process, multi-company distributed control**
Target: Use of the same control along the supply chain, possibility to use the system to adapt work sequences, process routes and machines 'behavior' to the most efficient working conditions

following the approach shown below



Partners

- PRIMA INDUSTRIE
- GIGANT
- LMS
- EXALCO
- VTT
- CADCAMATION
- GIZELIS Robotics
- NEW
- IDEKO
- CRF
- ITIA-CNR
- GORENJE
- AMRC
- TEKS
- IAM
- Finn-Power
- CASP

EVolution!

www.evolutionproject.eu

The Electric Vehicle revOLUTION enabled by advanced materials highly hybridized into lightweight components easy to be integrated and dismantled in a reduced life cycle cost logic

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|-----------------|-------------|
| Consortium | 26 partners |
| Duration | 48 Months |
| EU contribution | ~9 M€ |

The EVolution project aims at reducing the weight of electric vehicles through

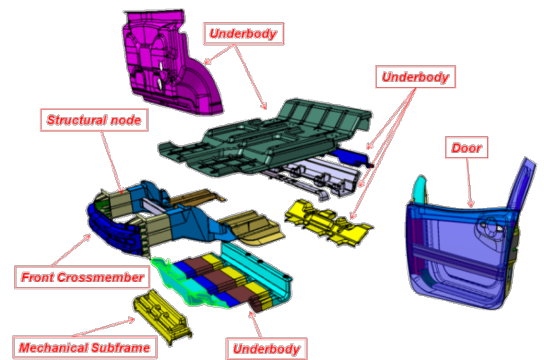
1. innovation of materials and enabling manufacturing technologies to conceive components of superior performances
2. the improvement and the optimization of materials properties by focusing on the technological scale-up
3. the development of new concepts for material integration and end-of-life dismantling of hybrid components
4. the tailoring of material properties to minimize the material classes employed in the single components

focusing on **selected vehicle systems, named demonstrators**. The main target is to **demonstrate the sustainable production of 600 kg weight full vehicle by 2016**.

Objectives

The EVolution project will achieve the above mentioned innovation contents by:

- delivering a **new structural and modular FEV-optimized MRC concept**
- **developing and improving innovative joining technologies for hybrid structures** taking into account **dismantling and recycling aspects**;
- developing and improving **new advanced process technologies and materials**
- giving proof of concept on **5 selected technological demonstrators**



in order to enable the **penetration of electrification**.

IAM is in charge of the underbody demonstrator and related technologies.

Partners



CONVENIENT

Complete Vehicle Energy-saving Technologies for Heavy Trucks

| | |
|-----------------|-------------|
| Consortium | 22 partners |
| Duration | 42 months |
| EU contribution | ~10 M€ |

The main objective of the project is to develop a **new long distance truck archetype** enabling a fuel consumption reduction of about -30% reduction in real-usage application

This target will be achieved by adopting a **holistic energy management approach** that includes both the tractor and the semi-trailer. It will focus on the development and integration of **innovative energy efficient hardware, energy harvesting** as well as **active and passive aerodynamics solutions** in order to reduce the complete vehicle drag.

Objectives

The aims of CONVENIENT are :

- to investigate the integration of existing energy recovery/harvesting technology;
- to investigate holistic energy management algorithms;
- design tools for optimizing energy production, distribution, consumption and storage of a complete heavy-duty vehicle;
- exploration of multiple energy domains.

Partners

