**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

**Ongoing projects within FP7**

**November 2012**

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KNOW4CAR
An Internet-based Collaborative Platform for Managing Manufacturing Knowledge

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 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 to form 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**
- **CADCAMATION**
- **ITIA-CNR**
- **Finn-Power**
- **GIGANT Robotics**
- **GIZELIS Robotics**
- **LMS**
- **NEW**
- **AMRC**
- **TEKS**
- **EXALCO**
- **IDEKO**
- **CASP**
- **VTT**
- **CRF**
- **IAM**
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
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

[List of partners logos]