



Project Acronym

MyCar

Project Title:

Flexible Assembly Processes for the Car of the Third Millennium**Instrument:** Integrated Project (IP), **Thematic Priority:** Priority 3-NMP

Publishable Executive Summary

Period covered:

from 01/05/2007 to 30/4/2008Start date of project: **01/05/2006**

Date of preparation:

25/09/2008Duration: **60 months****Contract Number** : NMP2-CT-2006-026631**Project Start Date** : 1st May, 2006**MY-CAR Consortium** : **VOLVO TECHNOLOGY AB (VOLVO)-Project Coordinator****University of Patras (LMS-UniPATRAS)-Project Manager****Daimler AG (Daimler)****Ford Werke GmbH (FORD)****C.R.F. Societa' Consortile per Azioni (C.R.F.)****Comau S.p.A. (COMAU)****Prima Industrie S.p.A. (Prima)****Harms & Wende GmbH & Co KG (HWH)****CONSULTING AND SOFTWARE PRODUCTS S.A. (CASP)****CHALMERS TEKNISKA HOEGSKOLA AKTIEBOLAG (Chalmers)****HOEGSKOLAN I SKOEVDI (UniSkovde)****UNIVERSITAET KARLSRUHE (TECHNISCHE HOCHSCHULE) (UniKarl)****UNIVERSITAET DES SAARLANDES (UdS)****Siemens AG (Siemens)****EDAG Engineering + Design AG (EDAG)****Tunkers Maschinenbau GmbH (Tunkers)****EMPHASIS D. VENIZELOS KAI SIA OE (Emphasis)****CENIT AKTIENGESELLSCHAFT SYSTEMHAUS (CENIT)**

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1 PUBLISHABLE EXECUTIVE SUMMARY

1.1 Vision

The change from single model production line to multi-model production line and from traditional mass production plants to self adaptive production plant integrates the vision of MyCar project. MyCar vision is to Long term sustainability of EU vehicle manufacturing considering the customer as the core element, offering personalisation to achieve market differentiation against non-EU competitors.

Participant No	Participant name	Participant No	Participant name
1	Volvo Technology Corporation	10	Chalmers tekniska högskola AB
2	DaimlerChrysler AG, R&D	11	Högskolan Skövde
3	Ford Werke AG	12	Universitaet Karlsruhe – Institut fuer Rechneranwendung in Planung und Konstruktion
4	C.R.F Società Consortile per Azioni	13	Universität des Saarlandes
5	Comau S.p.A.	14	Siemens Automation and Drives
6	Prima Industrie S.p.A.	15	EDAG Engineering & Design AG
7	Harms & Wende GmbH & Co KG	16	Tünkers Maschinenbau GmbH
8	Consulting and Software Products S.A.	17	EMPHASIS TELEMATICS D. VENIZELOS KAI SIA OE
9	Laboratory for Manufacturing Systems and Automation-University of Patras	18	CENIT AG Systemhaus

1.2 Project objectives

Project objectives include developments in customer orientation products, production flexibility and industry sustainability. The development of customer orientation products will increase number of variants produced in an assembly line by 30% and increase ratio of custom orders volume to full production volume by 15%. Production flexibility will increase production flexibility, up to 8 models in the same body shop line, increase supply chain flexibility, will support operators in managing variation, and increase reconfigurability of assembly equipment. Industry sustainability developments aims to reduce assembly costs by 15% , decrease investment costs by 20%, decrease the number of undetected quality defects during assembly process 15%, shorten time to market by 15%, decrease in ramp-up time, 20% and increase utilization at plant level by 10-15%. Figure 1 explains the requirements for the achievement of the objectives.

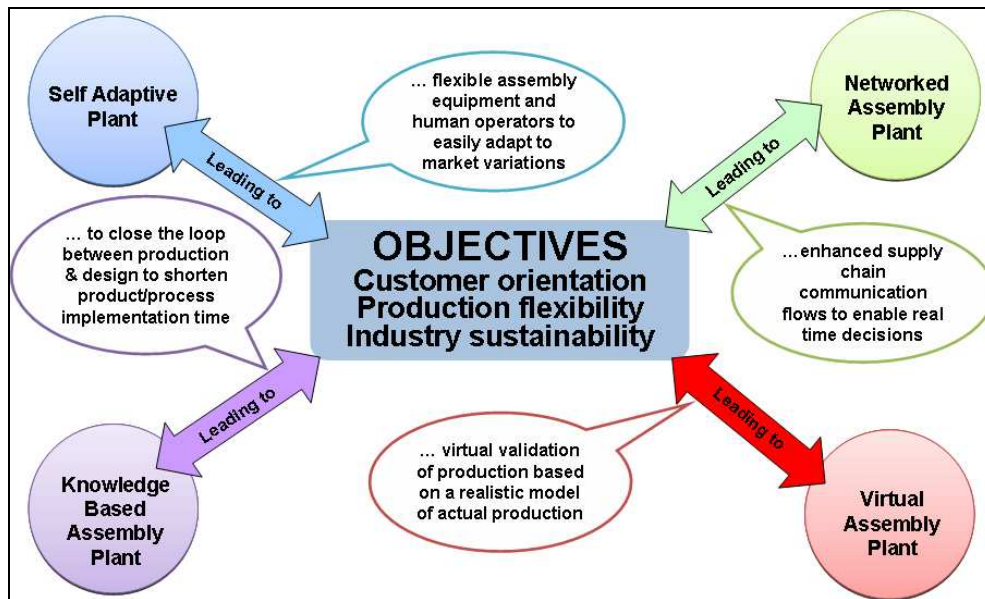


Figure 1: Requirements to achieve objectives.

The developments in SP2 can be summarized in:

1. Adaptation To Market Demand - Intelligent tool for adaptable assembly line design and operation: self adaptive plant design, and self adaptive plant operation.
2. Highly reconfigurable solutions for flexible assembly: innovative bodyshop floor concept, clamping heads, NC brackets, adaptable modular structures, flexible fixtures for laser cutting, cooperating robots remote laser welding system, and welding controls algorithms.
3. Human Based Assembly-Integrated Operator Support System: integrated operator support system, and dynamic job rotation tool.
4. Equipment Maintenance– Equipment maintenance monitoring software: equipment maintenance process, and equipment maintenance prototype.

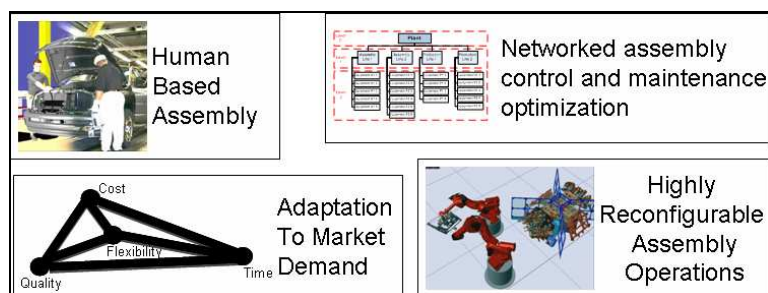


Figure 2: SP2 R&D activities.

The main activities in SP3 include the development and implementation of.

- Transparency on production process times of desired product configurations or specific customer orders, as base for determination of production cost,
- Methods and environment for a complete virtual validation of real production as base for integration of new product versions or options in running production (e.g. additional sun roof integration of a second model in running production (e.g. X204 integrated in W204 line), and
- Integrated methods and environment for virtual commissioning to achieve fast ramp up curve to avoid a loss of vehicles.

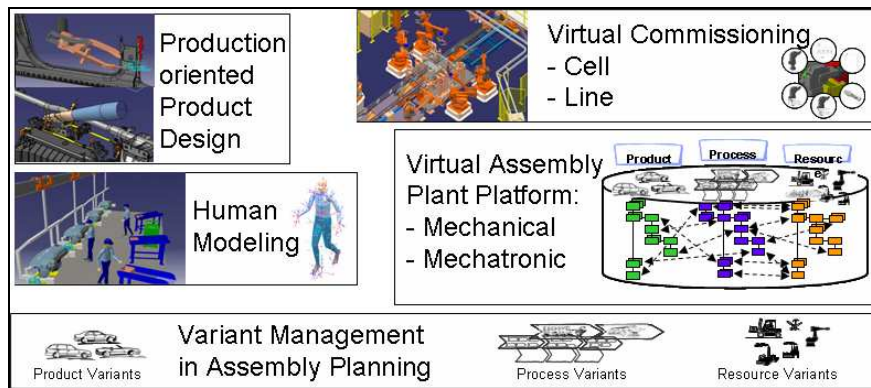


Figure 3: SP3 R&D activities.

The main activities in SP4 include the development and implementation of.

- A simulation tool to test the feasibility of changing the specification of vehicles within the lock in period,
- A concept applying low cost, universal RFID technology to enable the real time visibility of components in the supply chain and the automatic population of the data in the simulation tool,
- A 2-way IT communication flows within the supply chain to the n^{th} tier supplier to increase the level of information available that enables decision making via the simulation tool, and
- The use of buyer behavior modeling to assist with decision making.

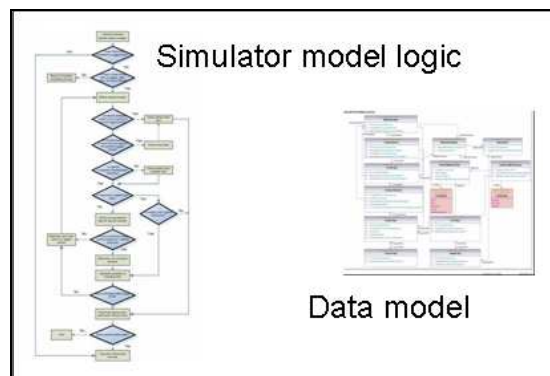


Figure 4: SP4 R&D activities.

The main activities in SP5 provide simple but effective methods that take advantage of the Past Knowledge, pertaining to the design and operation of assembly lines in the Automotive Industry. These include the development and implementation of a:

- Performance Estimation Model for the calculation of production key factors such as cost, weight, and cycle time of a new product based on data from past projects,
- Knowledge – Based Decision Support Tool to help (for instance a project manager) decide where the production of a new car or a subassembly should be placed, taking into consideration different market demand scenarios, and
- Product and Process Template Selector which categorizes past solutions in terms of performances, development time, and costs.

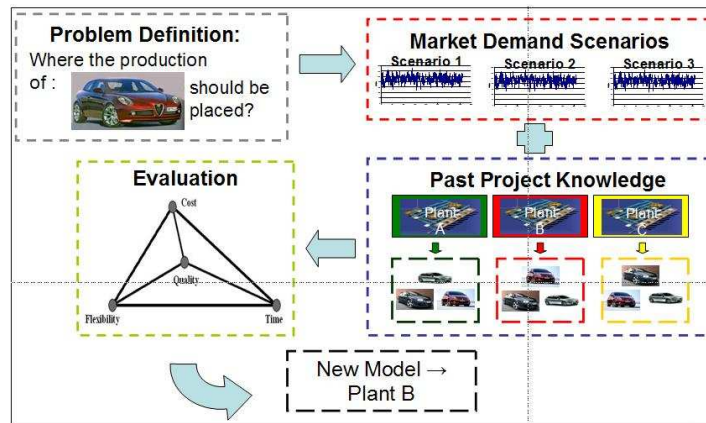


Figure 5: SP5 R&D activities.

1.3 Reference to the project public website

The project web site was built on May 2006, and is accessible on the following URL:

<http://www.mycar-project.eu>

The content of MyCar portal is separated in two major sections, the public one and the internal space. Public website includes pages accessible by the wider audience and includes the following pages:

- Home page.
- Consortium.
- Contact us.
- News.

To get more information for the project please contact as follows.

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