

Flexible Assembly Processes for the Car of the Third Millennium

From single model production line

.... to multi-model production line

Long term sustainability of EU vehicle manufacturing considering the customer as the core element, offering personalisation to achieve market differentiation against non-EU competitors

From traditional mass production plants ...

... to self-adaptive plant



The “Flexible Assembly Processes for the Car of the Third Millennium” project (MyCar) began in May 2006. The overall objective of the project is to increase the competitiveness of European vehicle manufacturers by improving flexibility in assembly plants. This will allow for increased vehicle customization, while maintaining or improving plant efficiency, and help auto manufacturers adapt to variations in market demand. The core concept in the project is the self-adaptive assembly plant.

The integrated project (IP) is funded in part by the European Commission under the Sixth EU Framework Programme for Research and Technological Development (FP6). The IP’s Consortium includes 18 partners, comprising major stakeholders of the European automotive industry, namely a Core Users Group, a group of production system suppliers, a group of ICT providers, and a group of R&D performers, including academic and research institutes.

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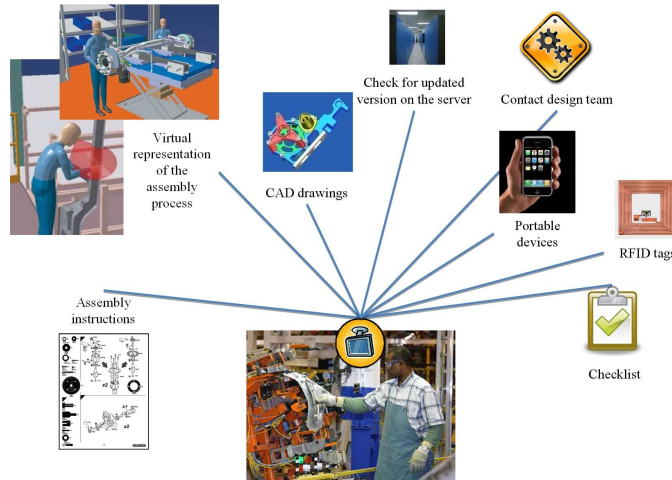
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Self-adaptive plant

...flexible assembly equipment and human operators to easily adapt to market variations

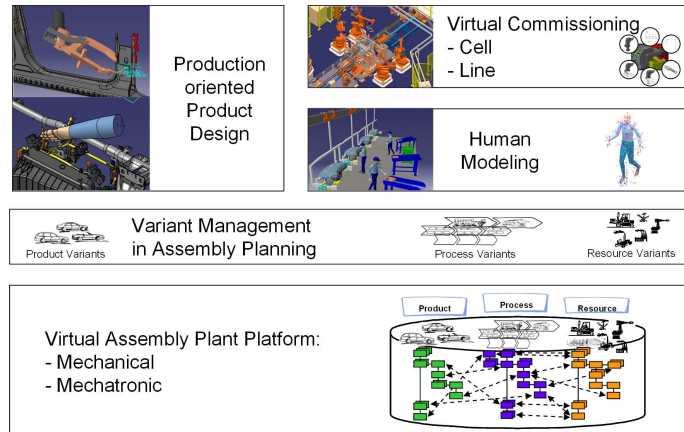
- Scalable reconfigurable production system where modules are dedicated to functions
- Information system and in-line instructions which facilitate operations and improve quality
- RFID Technology will be incorporated to specify operations and update information
- Simulation of the influence on the production process by the implementation of innovative information system



Virtual assembly plant

... virtual validation of production based on a realistic model of actual production

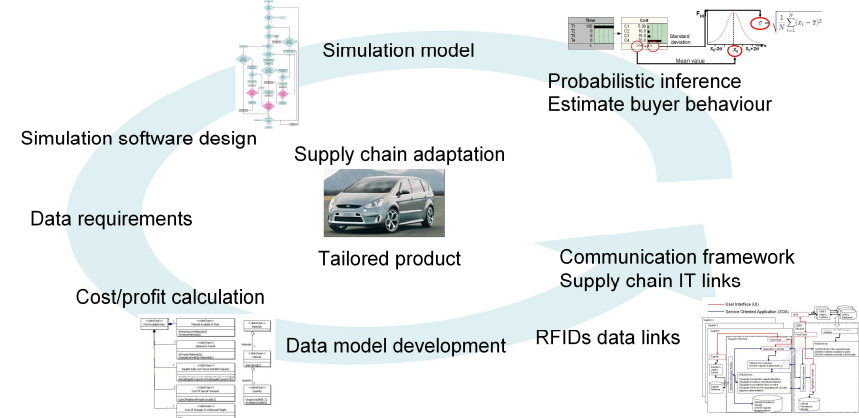
- Create transparency on production process times of desired product configurations or specific customer orders, as base for determination of production cost.
- Methods and environment for a complete virtual validation of real production as base for
 - integration of new product versions or options in running production
 - integration of a second model in running production
- Integrated methods and environment for virtual commissioning to achieve fast ramp up curve to avoid a loss of vehicles



Network assembly plant

... enhanced supply chain communication flows to enable real time decisions

- Simulation tool to test the feasibility of changing the specification of vehicles within the lock in period
- Low cost, universal RFID technology to enable the real time, IT-independent visibility of components in the supply chain and the automatic population of data in the simulation tool
- 2-way IT communication flows within the supply chain to nth tier to increase the level of supply chain information available to support decision making via the simulation tool
- Use of buyer behaviour modelling to assist with decision making



Knowledge based assembly plant

... to close the loop between production & design to shorten product/process implementation time

- To organize, classify and analyze data from previous production and manufacturing activities as well as different product lifecycle phases utilizing sophisticated data analysis methods.
- The development of advanced product and process template in order to integrate the acquired knowledge in a suitable way to be used in the development process of design and process.
- Changes in design and feedback to design engineering teams

