



Holistic, extensible, scalable and standard Virtual Factory Framework

**Conference name ddmmyyy**

**VIRTUAL FACTORY FRAMEWORK**



**Companies are required to increase the level of flexibility and respond to market quickly. improving the level of productivity and quality through process improvement and integration into the various activities of the factory, both at the cellular level or at all.**



VIRTUAL FACTORY FRAMEWORK

# Context

The virtual factory proposes solutions of highly complex tasks increasing:

scalability



security



reliability



durability

cost reduction



virtual mock-up



efficiency



adaptability





**DURATION:** 42 months

**STARTING DATE:** 1st September 2009

**PROJECT N° :** FP7-NMP-2008-3.4-1; 228595

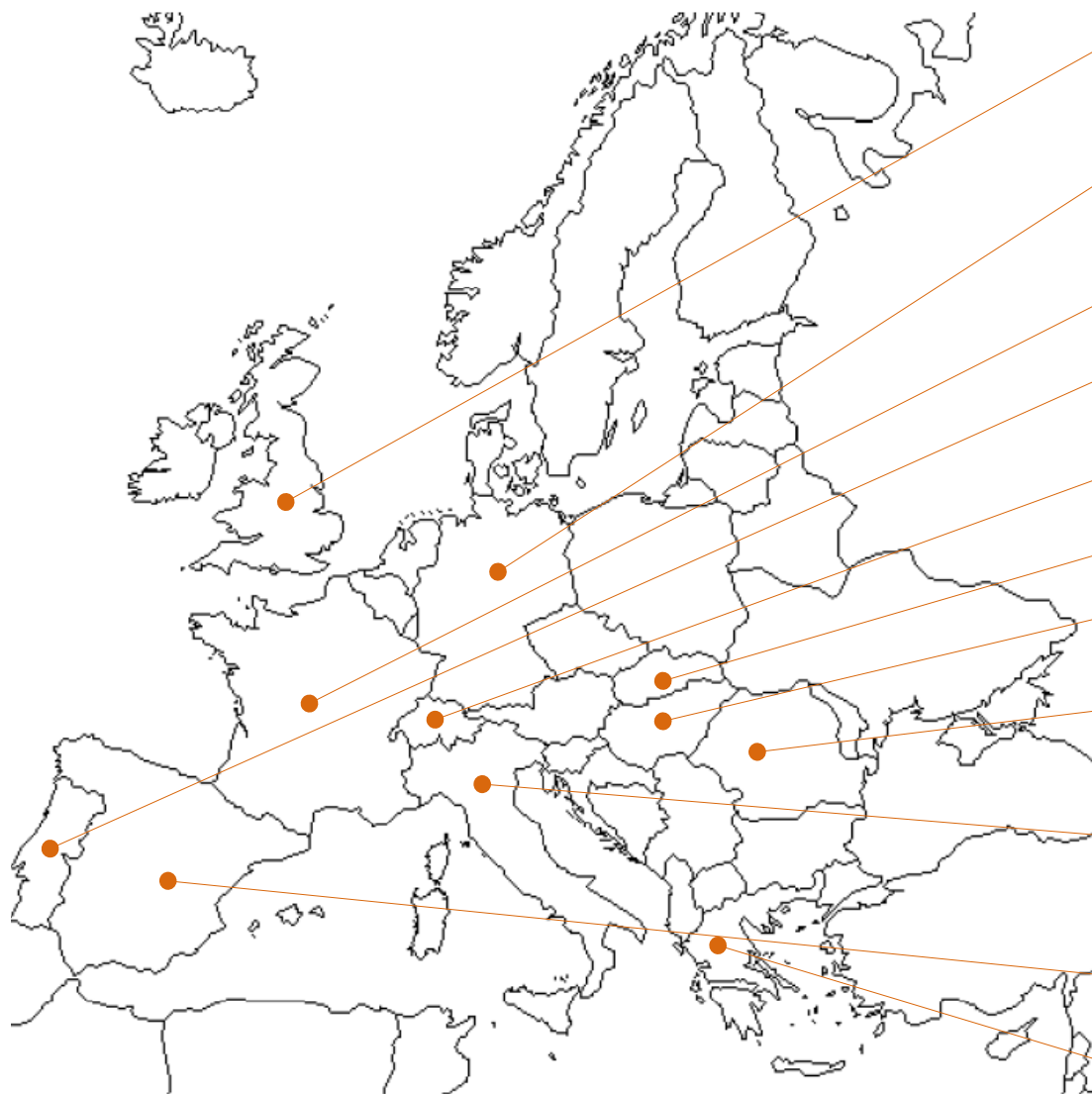
**STRATEGIC OBJECTIVE:** Theme 4 – NMP –  
Nanosciences, Nanotechnologies, Materials and  
new Production Technologies

**BUDGET:** 12.075.455€

**COORDINATOR:** ITIA-CNR



# VFF consortium



SimX	SME	GB
Homag	IND	D
PSI	IND	
FhG-IPA	RTD	
RWTH-WZL	RTD	
Steel-projects	SME	F
Volkswagen	IND	P
ATEC	SME	
INESC-Porto	RTD	
Nova	SME	CH
ICIMSI	RTD	
ETHZ	RTD	
CEIT	SME	SK
AudiMotors	IND	H
SZTAKI	RTD	
Compa	IND	RO
ROPARDO	SME	
Cluj-napoca	RTD	
Comau	IND	I
Alenia	IND	
Ficep	IND	
TTS	SME	
ITIA	RTD	
M&LGROUP	SME	E
EUVE	RTD	
Fatronik	RTD	
Frigoglass	IND	GR
CASP	SME	
LMS UniPatras	RTD	

VFF supports the deployment of a next generation Virtual Factory promoting the EU manufacturing competitiveness.

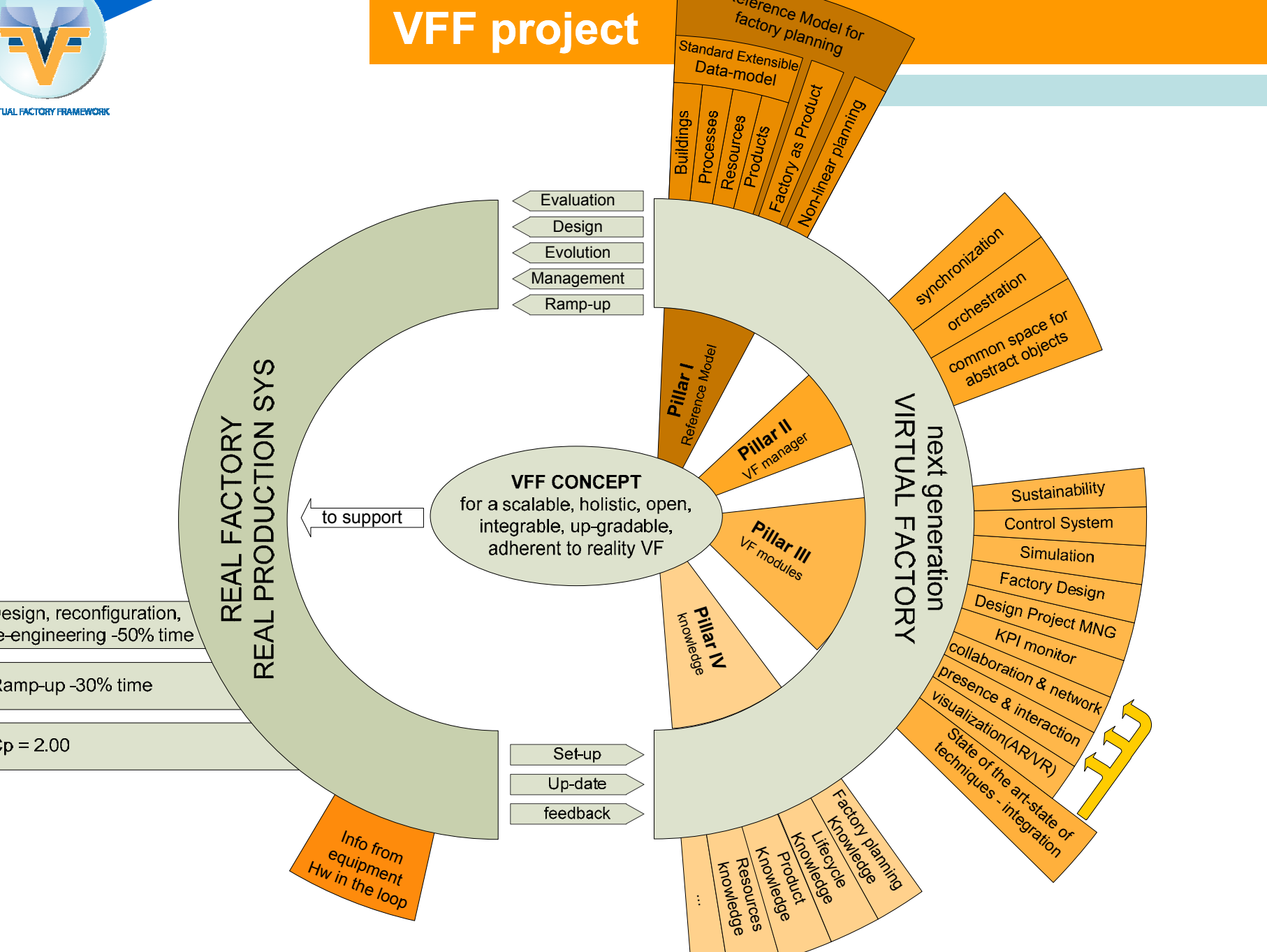


It's based on four pillars which collaboration leads to the realization of the Virtual Factory concepts.



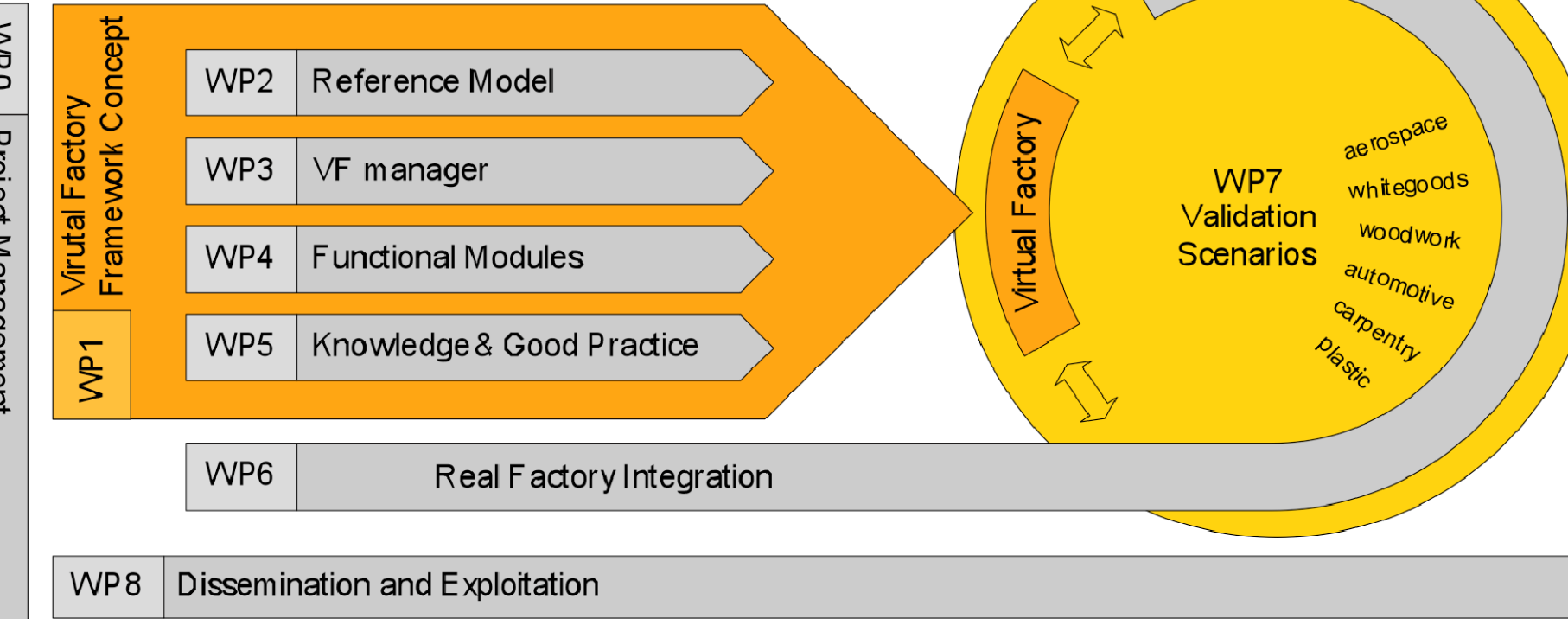
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# VFF project

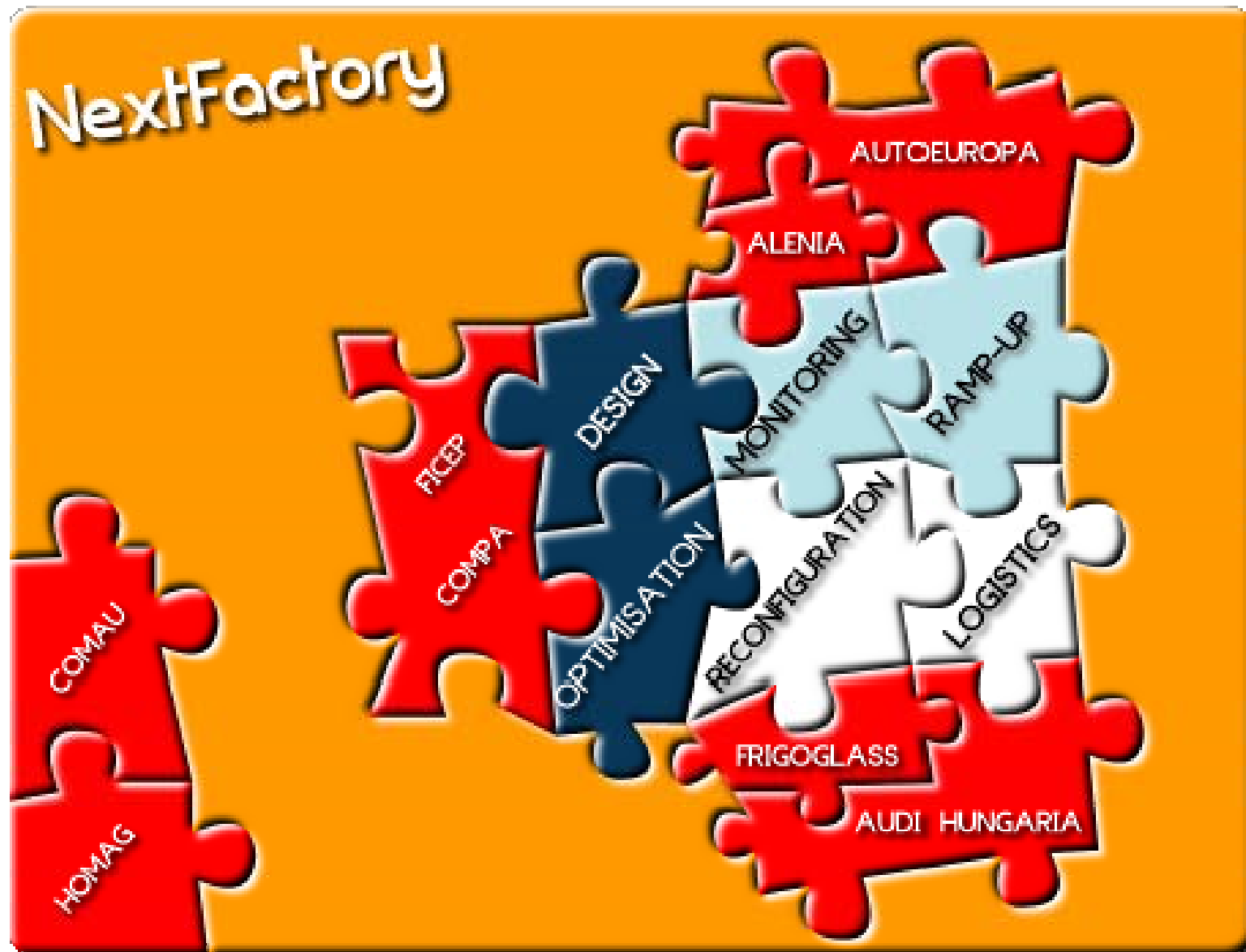




# VFF WPs







# NextFactory

COMAU  
HOMAG

FICEP  
COMPA

DESIGN  
OPTIMISATION

ALENIA  
AUTOEUROPA  
MONITORING  
RAMP-UP  
RECONFIGURATION  
LOGISTICS  
FRIGOGLASS  
AUDI HUNGARIA



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# Scenario 1: Design and Optimization



## Description:

The VFF tools will be used to design (or re-design) the factory, aiming at higher solution efficiency and effectiveness, and to optimise the configuration of the production systems.

## Main Goals:

- Reduce development time and costs and improve quality of product and processes;
- Reduce factory recycling due a successful original planning;
- Standardize processes;
- Increase performance levels;
- Decrease implementation costs;

## Scope:

Technical, Logistical, Quality departments.





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# Scenario 2: Ramp Up & Monitoring



## Description:

The VFF tools will enhance the capability to monitor the real factory and improve the set-up activities during the ramp-up phase.

## Main Goals:

- Achieve rigorous and expedite methods and tools to measure and analyse the performance of the factory;
- Identify significant failures in production processes;
- Evaluate the impact of the continuous improvement actions;
- Compare the real performance with the required performance to achieve the targets and budget and even perform benchmark with other factories of the same industrial sector.

## Scope:

Manpower performance monitoring.





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# Scenario 3: Reconfiguration & Logistics

## Description:

The factory reconfiguration decisions can be supported by simulation and optimization tools, whereas logistics decisions need VFF tools to efficiently face variable demand by means of flexible networked operations.

## Main Goals:

- Support the planning procedure of layout and control changes;
- Decrease planning / reconfiguration time and costs;
- On-line connect the real control system with the simulation and allow faster and easier analysis for reconfiguration;
- Decrease failure probability;
- Reduce inventory, work in progress and scrap costs.

## Scope:

To support the pearl chain delivery of the finished products but also includes some minor layout and organization changes in the engine delivery logistic system. Factory Planning, the product Handling and Logistics Department are be involved in the scenario.



Audi  
Hungaria





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# Scenario 4: Next Factory



## Description:

The purpose of the next factory scenario is to demonstrate the possibilities, limitations and benefits of an integrated holistic planning and engineering process for a new factory.

## Main Goals:

- Reduction of efforts for planning, engineering and ramp-up of new factories;
- Avoidance of mistakes in productivity planning;
- Set up safe processes in order to meet customer's requirements;
- Build up an integrated planning network
- Agile planning processes to handle order and engineering plans

## Scope:

The scenario comprises the technical and organizational planning processes, the simulation based configuration and engineering of production lines, the ramp-up of the lines and the monitoring of the factory operation.





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# Project contacts



Visit VFF web site: [www.vff-project.eu](http://www.vff-project.eu)

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