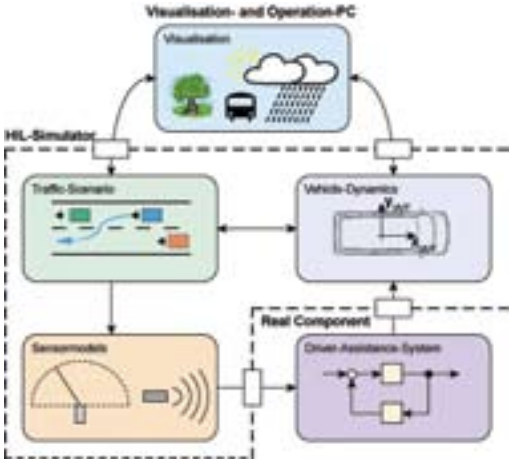
Information Society Technologies

DECOS

Application Demonstrators



Automotive

Applications

- Traffic jam assistant
- Door control system
- Heading control
- Adaptive lightning

Simulated environment

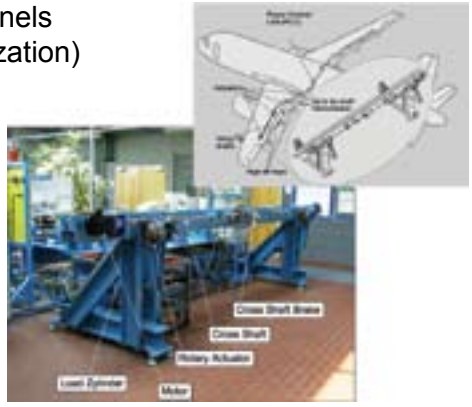
- Simulation and visualisation of the traffic environment
- Generation of the traffic scenarios
- Generation of sensor data for radar and laser
- Modelling of vehicle and driver behaviour

Industrial Control

- Suppression of **critical vibrations** in high-end nano-imprinting machines for next-generation sensors, micro-optics, bio- and nanotechnology
- **Other application areas:** machinery, construction engineering, automotive (national Austrian FIT-IT project VIBE-LESS - vibration suppression in cars (Magna Steyr, Profactor, ARC, LKR))

Aerospace

- **State of the art:** Central hydraulic motor drives all flap panels via a mechanical shaft transmission (mechanic synchronization)
- **New challenge:** pure electronic synchronization
  - A (time-triggered) bus system (TTA) is used between the flap panels
  - A system control unit (SCU) controls the time-triggered communication
  - Each flap panel is powered by two motors (redundancy)
  - Cross shaft brake holds system in case of a failure (broken shaft)
  - New smart sensors, interfaces and gateways



DECOS Partner Team: Austrian Research Centers (co-ordinator), Airbus, Audi Electronics Venture, Budapest University of Technology and Economics, Centro Ricerche Fiat, EADS, Esterel Technologies, Hella, Infineon, Liebherr Aerospace, Profactor, SP Technical Research Institute of Sweden, Technical University of Darmstadt, Technical University of Hamburg-Harburg, Thales Avionics, TTTech Computertechnik, University of Kassel, University of Kiel, Vienna University of Technology

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Dependable Embedded Components and Systems

DECOS aims at alleviating the identified five key obstacles to the deployment of advanced electronic functions in critical embedded systems.

- Electronic Hardware Cost
- Diagnosis and Maintenance
- Dependability
- Development Cost
- Intellectual Property Protection

Application Areas:

- Automotive
- Aerospace
- Railways
- Industrial Control
- Medical Systems
- Mechatronics
- Autonomous Systems and Robotics

Expected Results:

- Tools for Design, Development, Deployment, Validation & Verification
- Diagnostics infrastructure
- Prevalidated hardware and software components
- Basic software building blocks
- Cost reduction for system development, integration, maintenance and certification

Project Facts:

Budget:	Total cost:	14,3 Mio Euro
	Funding:	9 Mio Euro
Timetable:	Starting date:	1. July 2004
Duration:	36 Months	

Project Manager:

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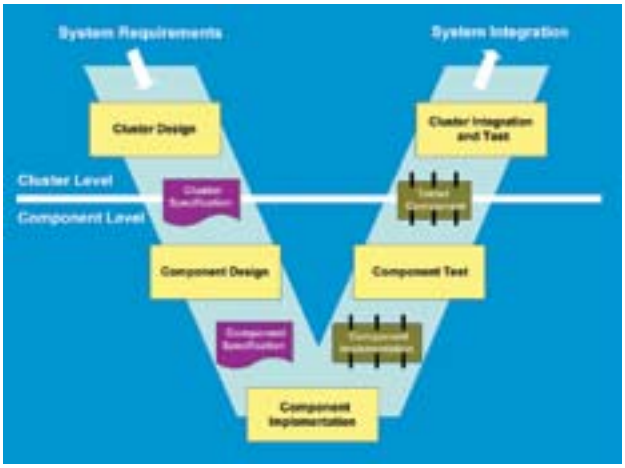
Exploitation of DECOS Results: Software Products from TTTech (www.tttech.com)

From Rapid Prototyping to Production Code



From Functional Design to Automatic Code Generation

Network Development Tool Chain for Reusable Embedded Software

- Design tool integration with MATLAB®/Simulink®
- Communication schedule for time-triggered embedded systems
- Solutions for TTP® from TTTech and FlexRay™ from TTAutomotive
- Calibration directly within Simulink model
- Fully automatic code generation
- Highly efficient and safe real-time operating system

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