Vienna University of Technology
Distributed Systems Group
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http://www.infosys.tuwien.ac.at/

COMPASS
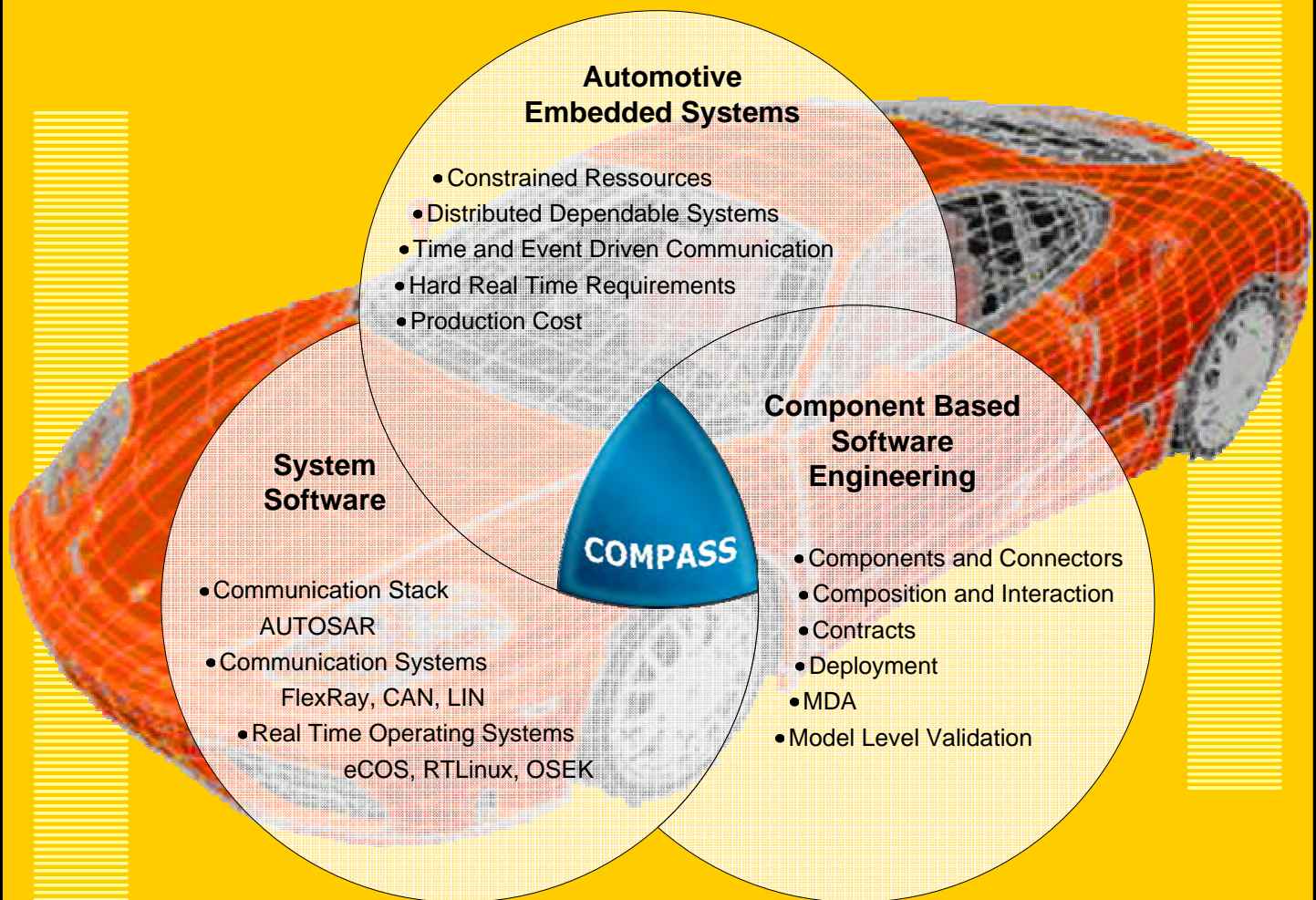## Component Based Automotive System Software

The Mission
Today's vehicle networks are transforming automotive components into highly distributed, embedded dependable systems. Replacing rigid mechanical components with dynamically configurable electronic elements triggers an almost organic, system wide level of integration. COMPASS is intended to develop a component based hardware/software architecture to meet the requirements arising by future applications.

The Players
- DECOMSYS GmbH (Project Coordination)
- UAS Technikum Vienna
- Vienna University of Technology

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Automotive Embedded Systems
- Constrained Ressources
- Distributed Dependable Systems
- Time and Event Driven Communication
- Hard Real Time Requirements
- Production Cost

System Software
- Communication Stack
  AUTOSAR
- Communication Systems
  FlexRay, CAN, LIN
- Real Time Operating Systems
  eCOS, RTLinux, OSEK

COMPASS

Component Based Software Engineering
- Components and Connectors
- Composition and Interaction
- Contracts
- Deployment
- MDA
- Model Level Validation

The Tasks

- When building a component based application for distributed embedded systems, its overall behavior depends not only on the properties of each individual component, but even more so on the components' relation and interaction. We aim at a methodology that simplifies the development of distributed embedded applications. It also allows a model level validation of composed component structures according to implicit and explicit contracts.
- Component based software engineering in COMPASS also refers to exchangeable hardware/software components. We envisage metrics and a hardware/software partitioning architecture to assess costs, performance, and dependability aspects for automotive embedded system applications.

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