

Introduction: VECOM (Vehicle Concept Modeling)

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VECOM Suppliers Workshop: Vehicle Concept Modeling in the Automotive Sector
Brussels, Belgium, June 6-7, 2011



VECOM

Vehicle Concept Modeling

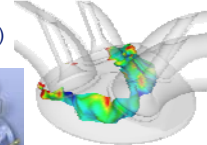


- EC FP7 Marie Curie ITN 213543 "Vehicle Concept Modeling" (VECOM)
- Initial Training Network (ITN) → focus on training young researchers
- Originates from EARPA Task Force "Modeling & Simulation" (<http://www.earpa.org>)

<http://www.vecom.org>

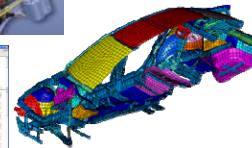
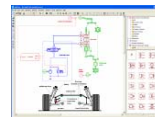
- **Main R&D Topic: Vehicle Concept Modeling**

- Improved initial CAD design → Shorter development cycle
- Increased feasibility to balance multiple attributes
- Multi-level simulation (1D - 3D)



- **Project Partners:**

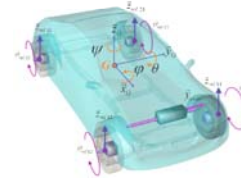
- Universities (6): UPVLC (coordinator), AUTH, K.U.Leuven, POLITO, CVUT Prague, UNIFI
- Research Centres (4): AIT, FhG-LBF, IDMEC, IFP
- Industry (4): LMS, AVL, BMW, CRF



- **Industrial Stakeholder Board:** CLEPA, Abarth, DAF, Pirelli, PSA, Renault, Ricardo, Skoda, Tenneco Automotive, VW

- **VECOM ITN Main Focus: Training through Research & Mobility**

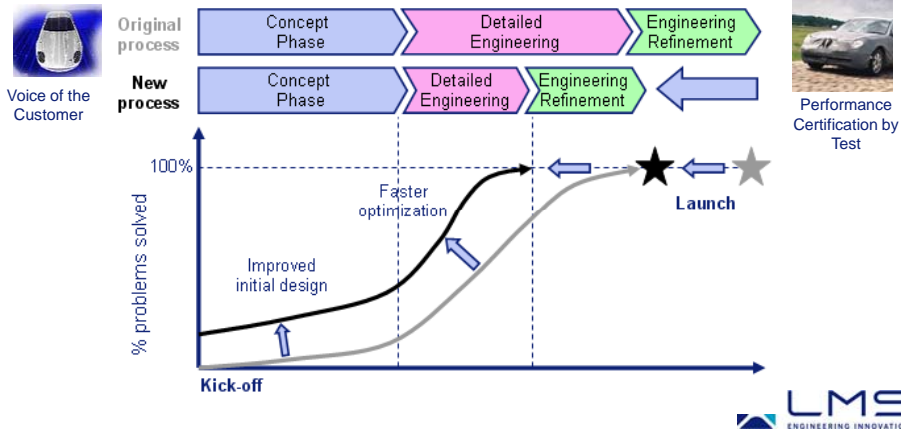
- **Early Stage Researchers** (504 person months, 17 persons)
- **Experienced Researchers** (84 person months, 9 persons)
- Visiting Scientists (14 person months, 7 persons)



Vehicle Concept Modeling: Outline

- Analysis Leads Design !

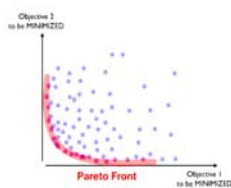
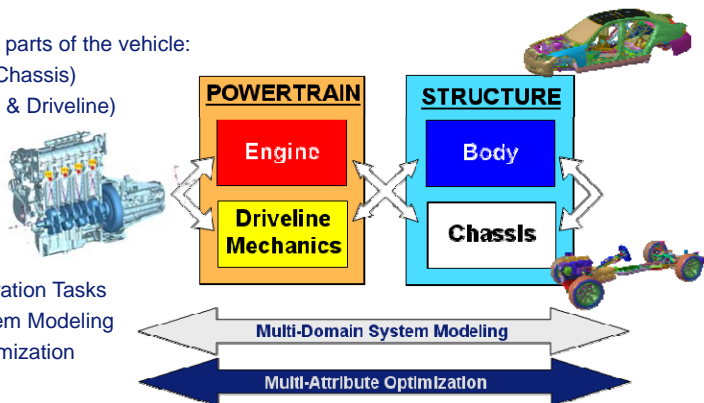
- Improved initial CAD design → Shorter development cycle
- Increased feasibility to balance multiple (possibly conflicting) attributes: NVH, crashworthiness, handling & ride, durability, fuel efficiency, ...



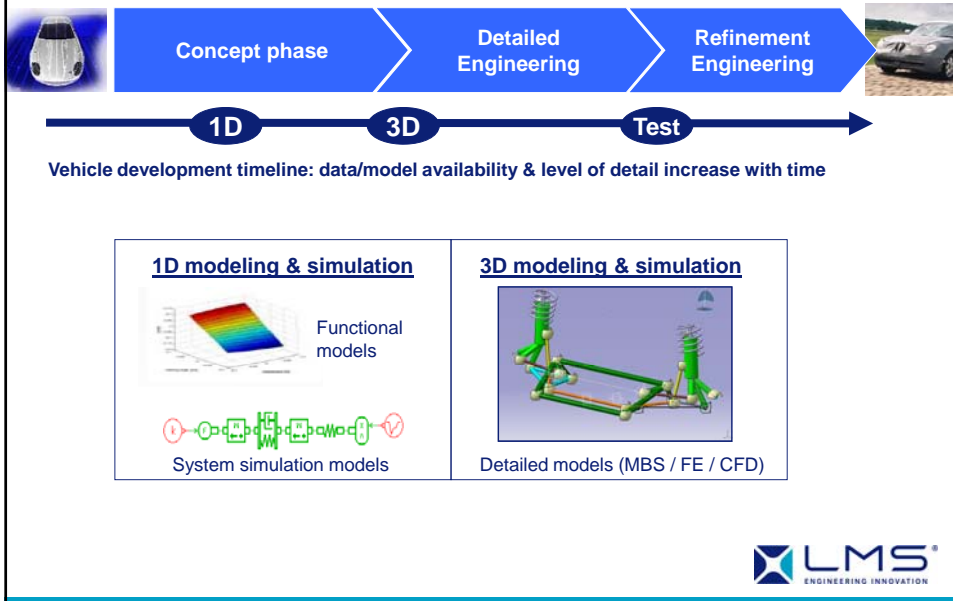
VECOM Task Structure

Two main constituent parts of the vehicle:

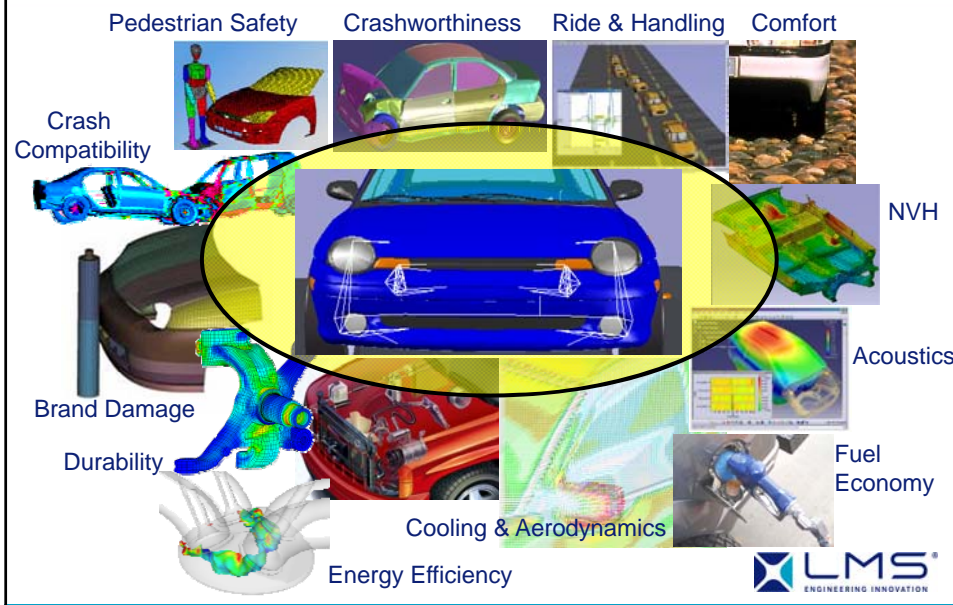
- Structure (Body & Chassis)
- Powertrain (Engine & Driveline)



Multi-Domain System Modeling



Multi-Attribute Optimization



**"VECOM"
Consortium**

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We gratefully acknowledge the EC for supporting the EC Marie Curie ITN "VECOM" !

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