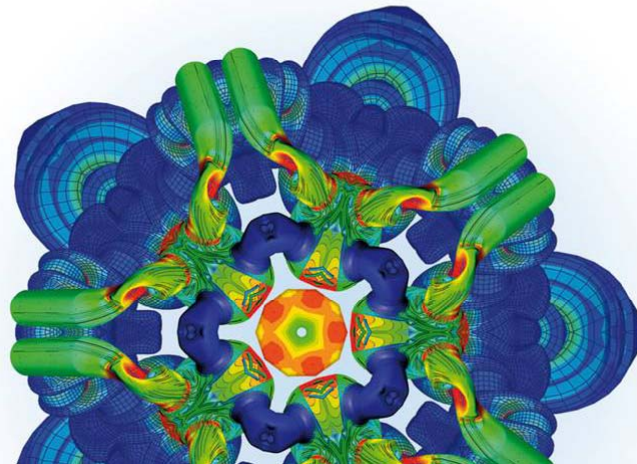


VECOM Suppliers Workshop, Brussels, 07 June 2011

Real-Time Capable Modelling of Modern Vehicle and Powertrain

Sophie Bardubitzki, Johann C. Wurzenberger (AVL List GmbH)



VECOM
Vehicle Concept Modelling



Overview

- Introduction
- Model Characteristics
- Model Validation and Prediction
- Conclusions

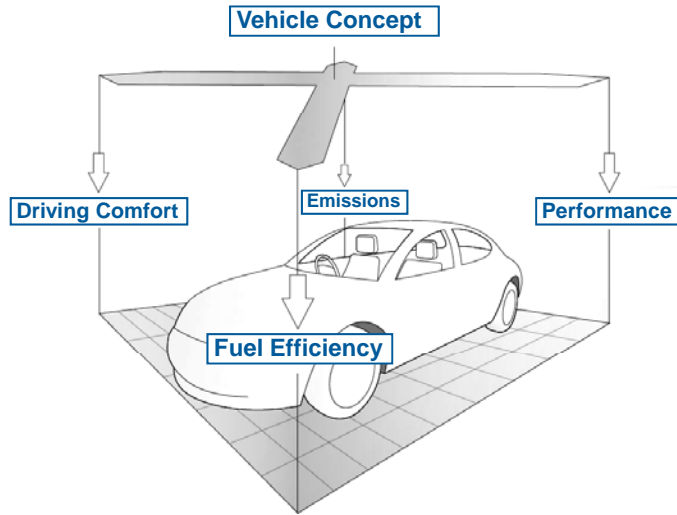


VECOM
Vehicle Concept Modelling

AVL - Sophie Bardubitzki - VECOM Suppliers Workshop: Brussels, 07 June 2011 - [2]



Demands on Modern Vehicle Design

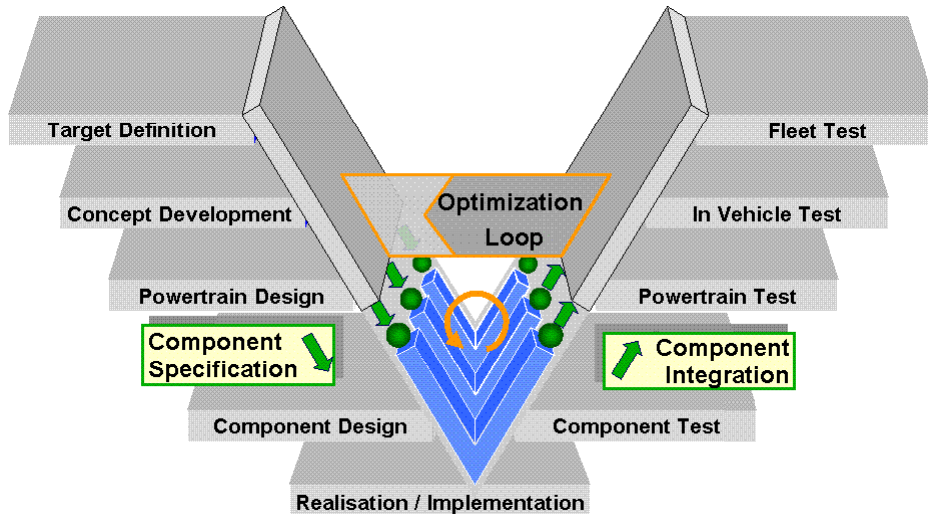


VECOM
Vehicle Concept Modelling

AVL - Sophie Bardubitzki - VECOM Suppliers Workshop: Brussels, 07 June 2011 - [3]



(Computer Aided) Vehicle Development Process



VECOM
Vehicle Concept Modelling

AVL - Sophie Bardubitzki - VECOM Suppliers Workshop: Brussels, 07 June 2011 - [4]



Overview

- Introduction
- Model Characteristics
- Model Validation and Prediction
- Conclusions

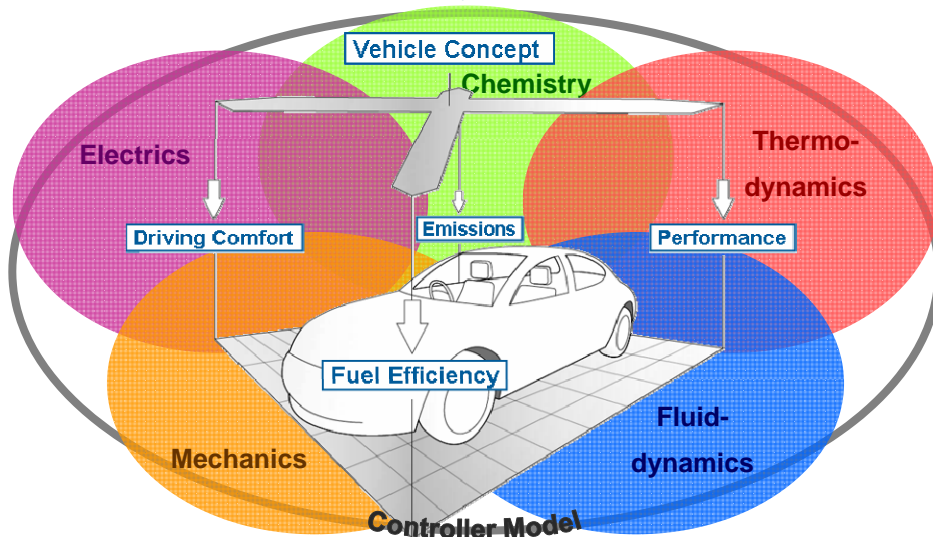


VECOM
Vehicle Concept Modelling

AVL - Sophie Bardubitzki – VECOM Suppliers Workshop: Brussels, 07 June 2011 – [5]



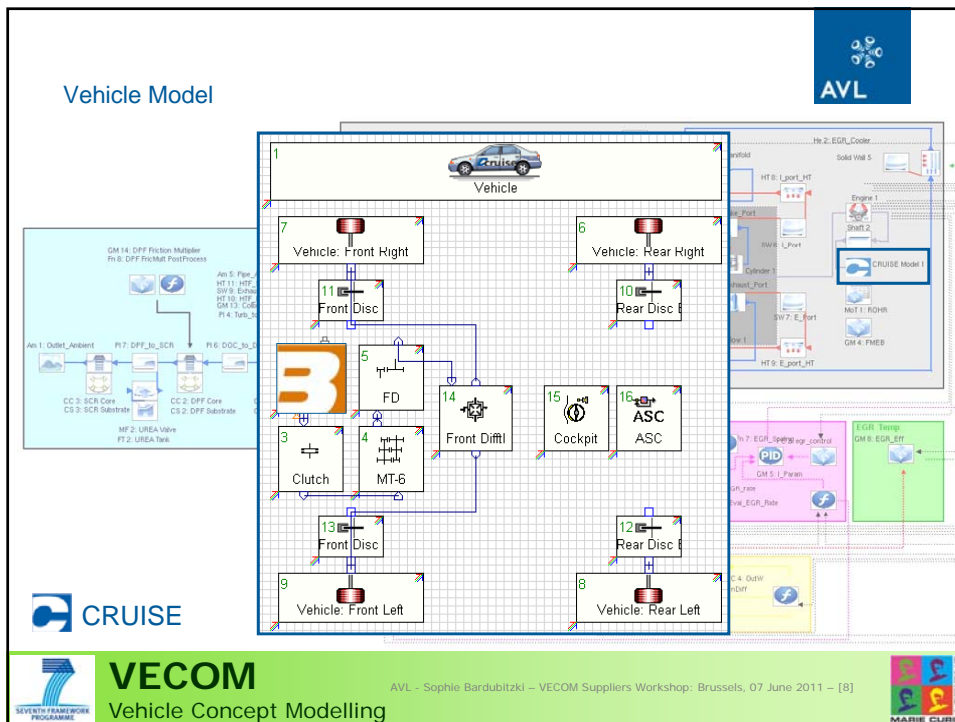
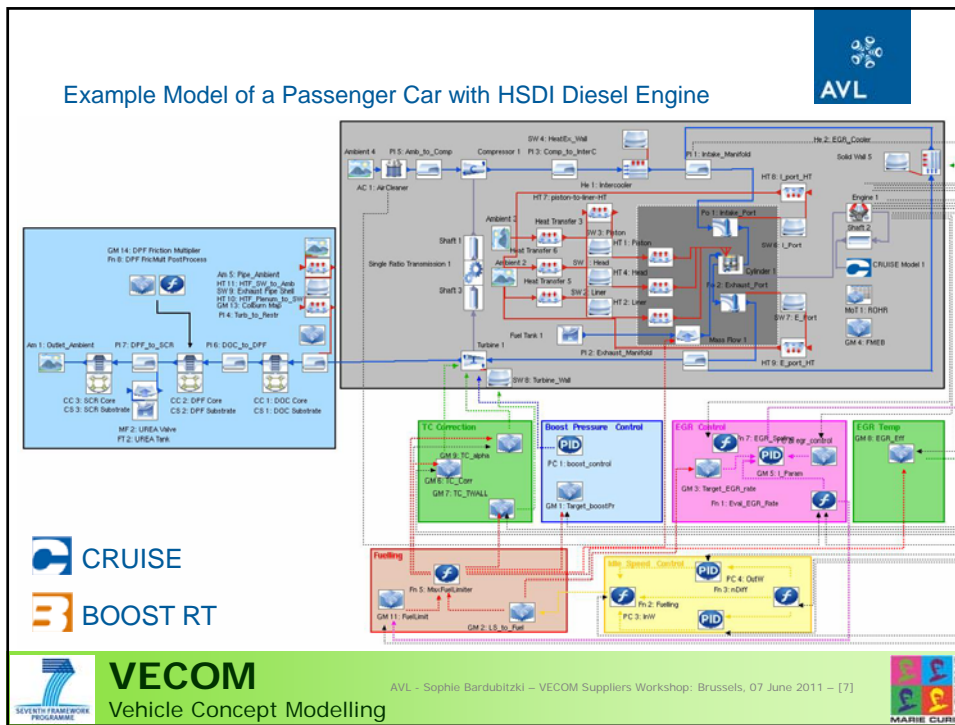
Real-Time Capable Vehicle & Powertrain Model Based on a Multi-Domain and Multi-Physics Approach

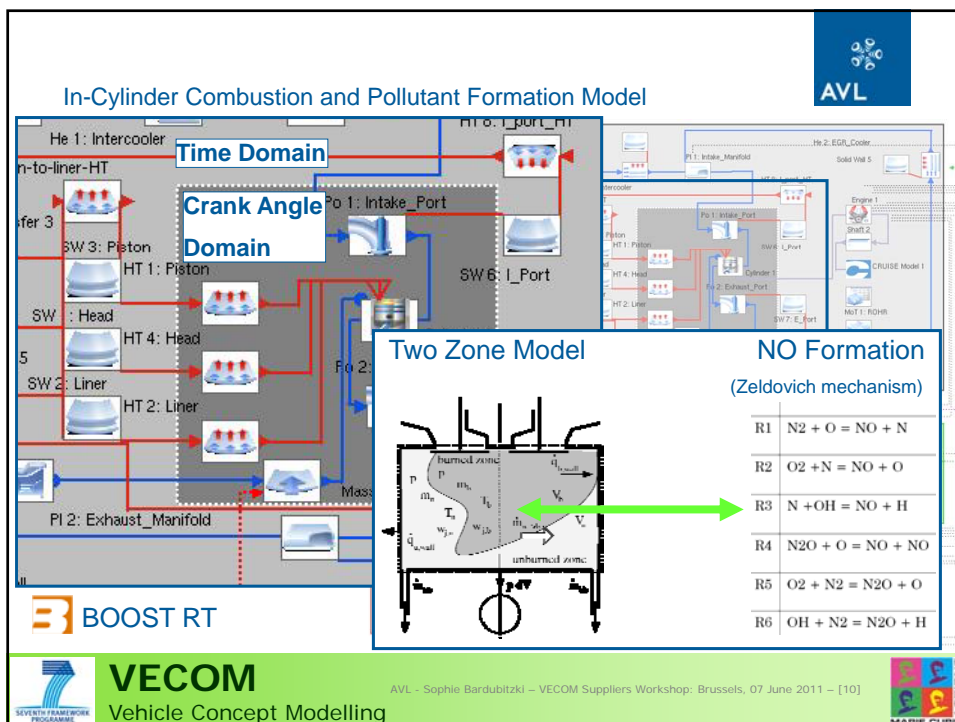
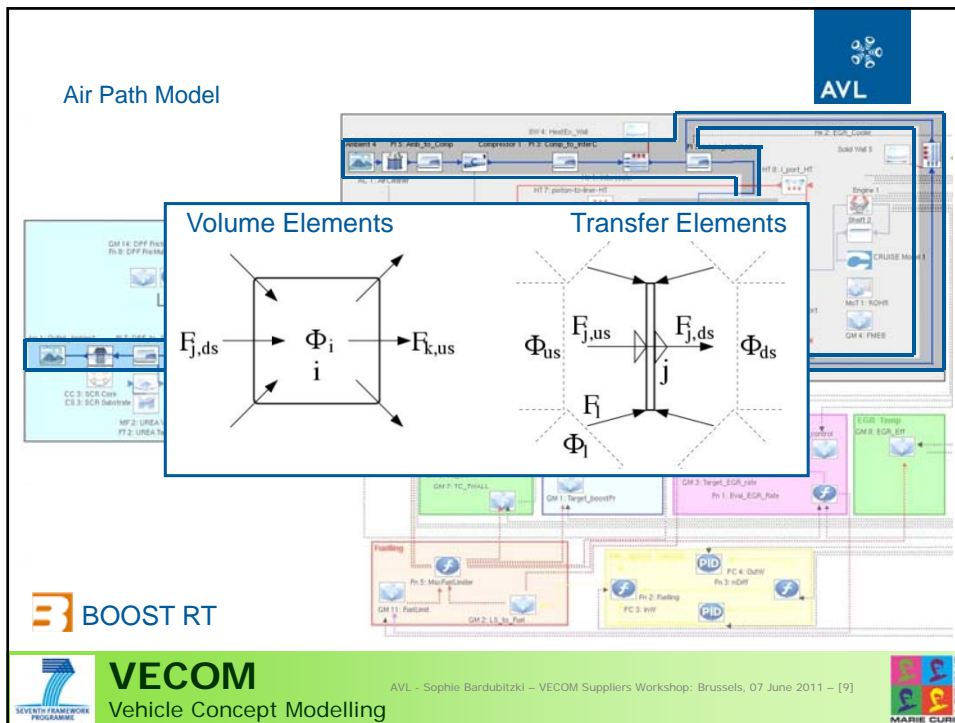


VECOM
Vehicle Concept Modelling

AVL - Sophie Bardubitzki – VECOM Suppliers Workshop: Brussels, 07 June 2011 – [6]







AVL

Catalytic Converter Model

VECOM
Vehicle Concept Modelling

AVL - Sophie Bardubitzki – VECOM Suppliers Workshop: Brussels, 07 June 2011 – [11]

AVL

Overview

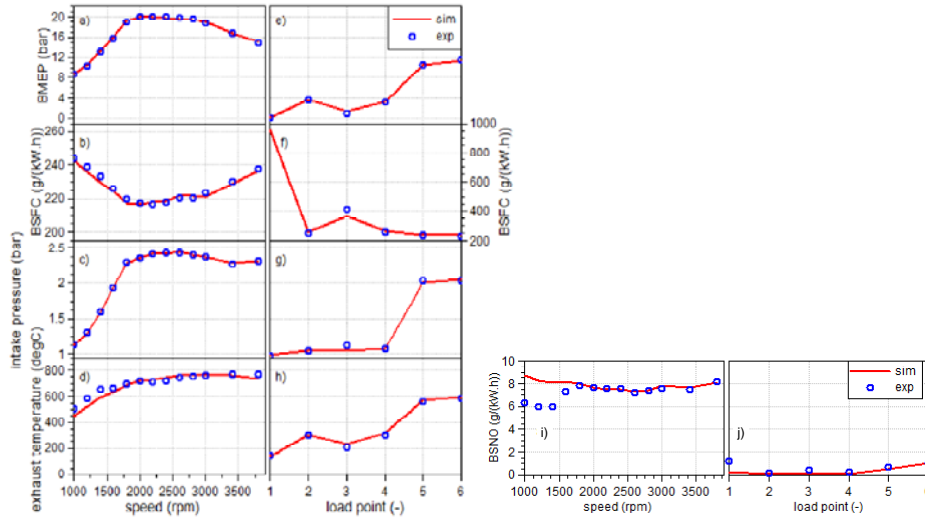
- Introduction
- Model Characteristics
- Model Validation and Prediction
- Conclusions

VECOM
Vehicle Concept Modelling

AVL - Sophie Bardubitzki – VECOM Suppliers Workshop: Brussels, 07 June 2011 – [12]



Calibration of Engine Model with Full Load and Part Load Data

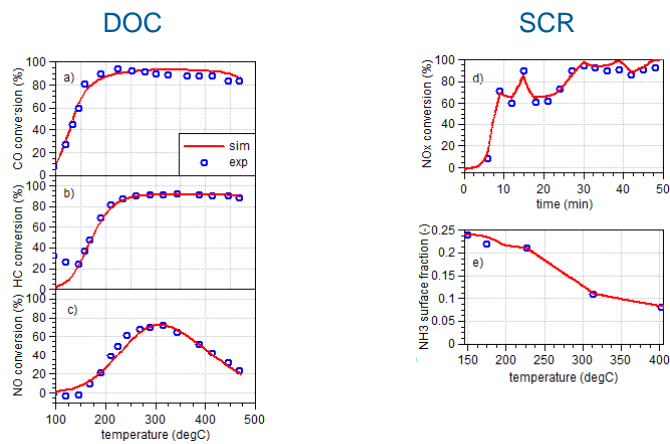


VECOM
Vehicle Concept Modelling

AVL - Sophie Bardubitzki - VECOM Suppliers Workshop, Brussels, 07 June 2011 - [13]



Calibration of Catalyst Model with Light Off Data

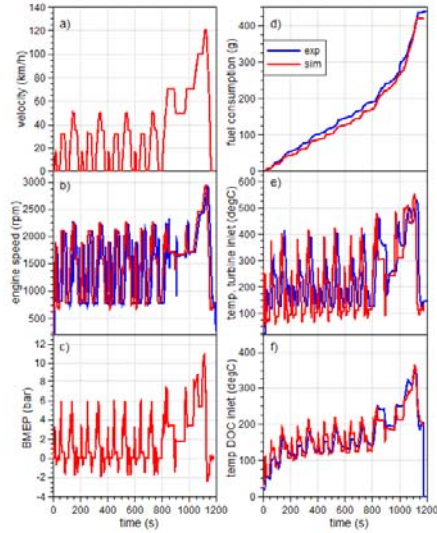


VECOM
Vehicle Concept Modelling

AVL - Sophie Bardubitzki - VECOM Suppliers Workshop, Brussels, 07 June 2011 - [14]



Model Validation for NEDC Cold Start Data

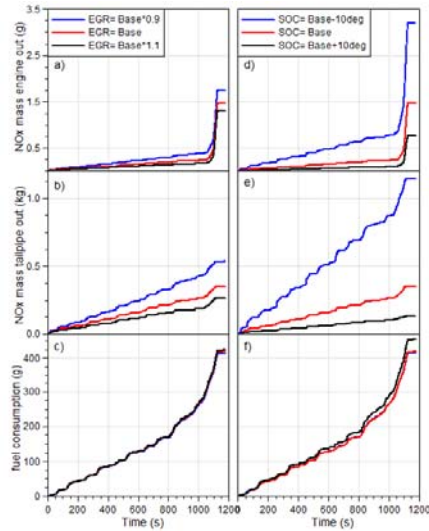


VECOM
Vehicle Concept Modelling

AVL - Sophie Bardubitzki - VECOM Suppliers Workshop, Brussels, 07 June 2011 - [15]



Prediction of NOx Emissions and Fuel Consumption during NEDC Cold Start for different EGR and SOC Variations



VECOM
Vehicle Concept Modelling

AVL - Sophie Bardubitzki - VECOM Suppliers Workshop, Brussels, 07 June 2011 - [16]



Overview

- Introduction
- Model Characteristics
- Model Validation and Prediction
- Conclusions

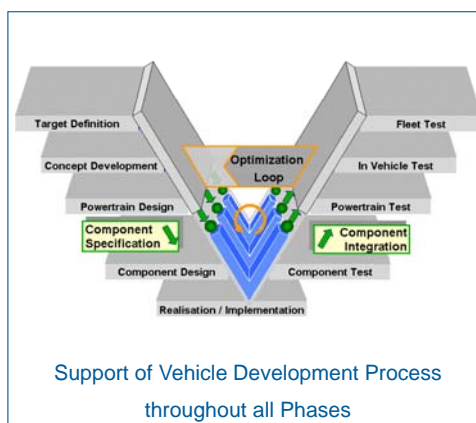
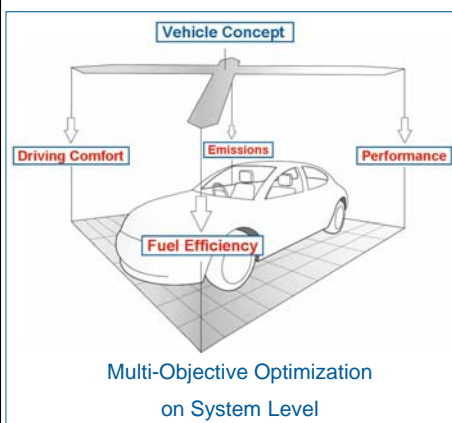


VECOM
Vehicle Concept Modelling

AVL - Sophie Bardubitzki – VECOM Suppliers Workshop: Brussels, 07 June 2011 – [17]



Model Application Areas



VECOM
Vehicle Concept Modelling

AVL - Sophie Bardubitzki – VECOM Suppliers Workshop: Brussels, 07 June 2011 – [18]



VECOM Suppliers Workshop, Brussels, 07 June 2011

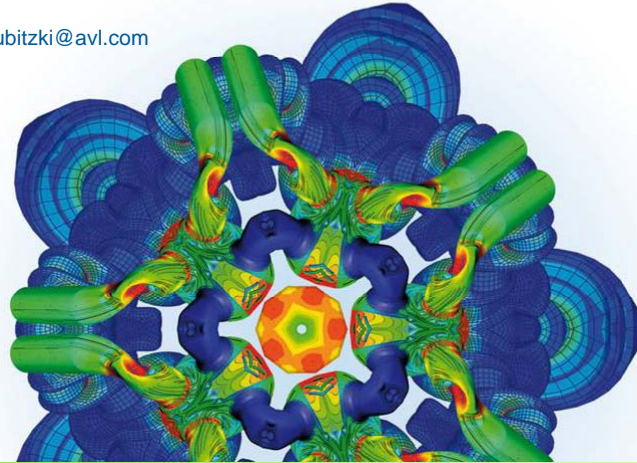
Real-Time Capable Modelling of Modern Vehicle and Powertrain

[Sophie.Bardubitzki](mailto:Sophie.Bardubitzki@avl.com), Johann C. Wurzenberger (AVL List GmbH)



Contact:

sophie.bardubitzki@avl.com



VECOM
Vehicle Concept Modelling

