

AUTOSAR – An Overview

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Introduction

- AUTOSAR stands for **AUT**omotive **O**pen **S**ystems **AR**chitecture

AUTOSAR

Electronic
Control
Unit



- Partnership of automotive **Car Manufacturers** and their **Suppliers**

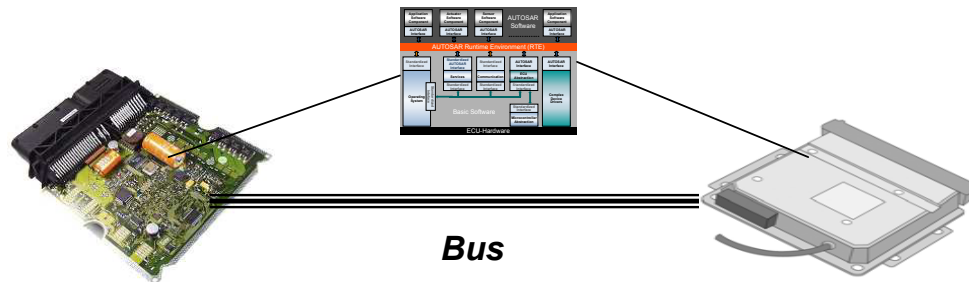
Source for ECU: Robert Bosch GmbH

Introduction

- Members of **AUTOSAR**
 - **Core Members**
 - BMW Group, Bosch, Continental, Daimler, Ford, Opel, PSA, Toyota, Volkswagen
 - **Premium Members**
 - Roughly 50 members, see www.autosar.org
 - **Associated Members**
 - Roughly 100 members (**SYSTECS**, ...), see www.autosar.org

Introduction

- Objective of **AUTOSAR**
 - Develop and establish a
 - de-facto **open industry standard** for
 - automotive **Electric / Electronic Architectures**, mainly **Software**

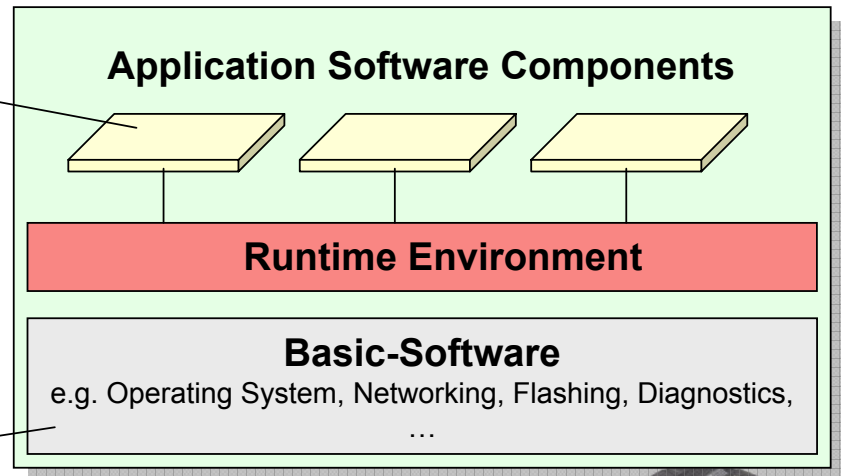


ECU Software Architecture

- “Compete on innovation, ...



AUTOSAR

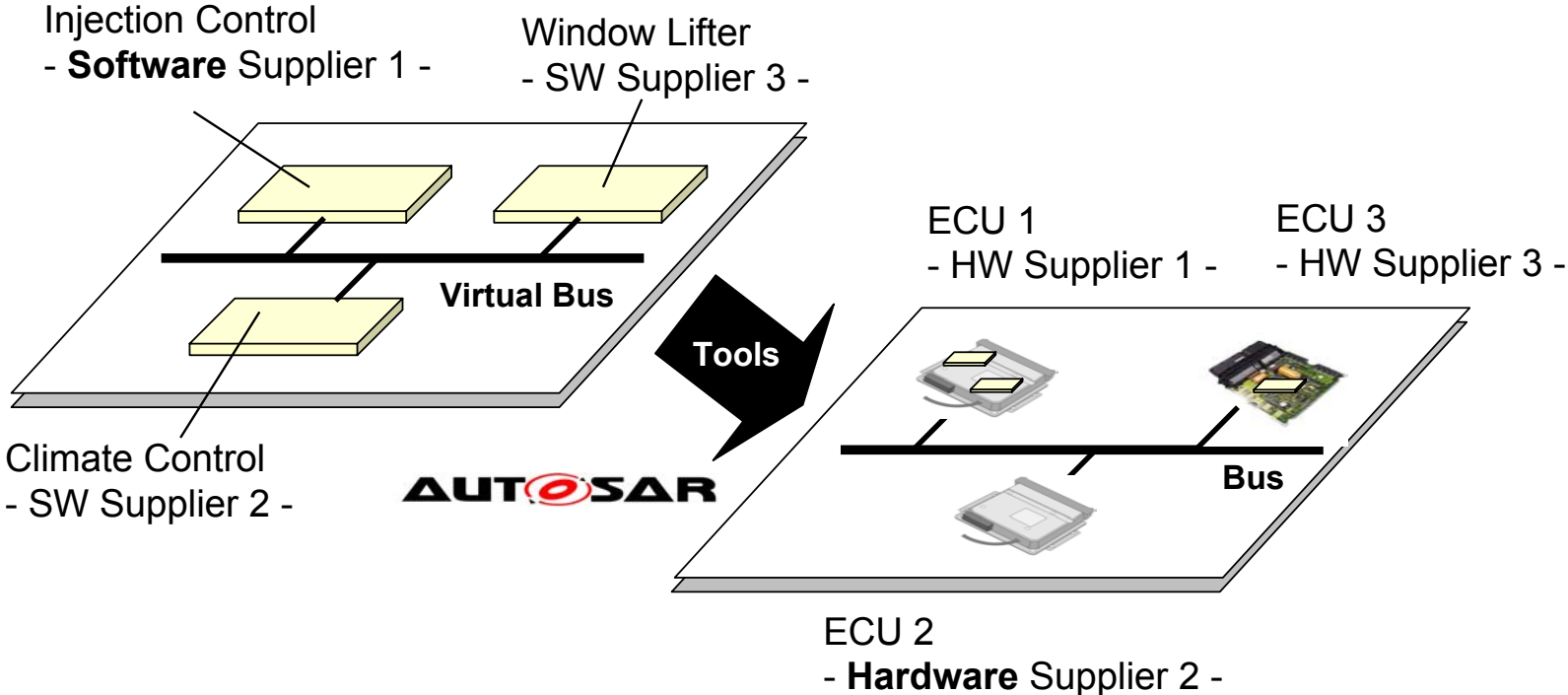


- cooperate on standards !”

- **Standardization of Basic Software**



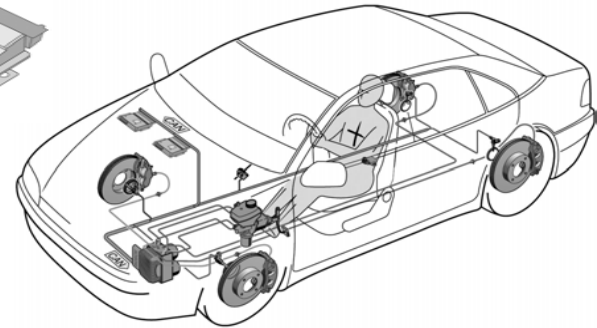
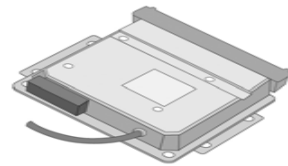
Independence of ECU Software & ECU Hardware



Why do we need AUTOSAR ?

- **Driving Forces**

- Manage increasing E/E **complexity** associated with growth in functional scope
- Improve **quality** and **reliability** of E/E systems
- Enable detection of errors in **early design phases**

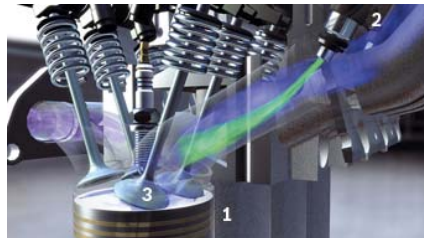


AUTOSAR

AUTOSAR Applications

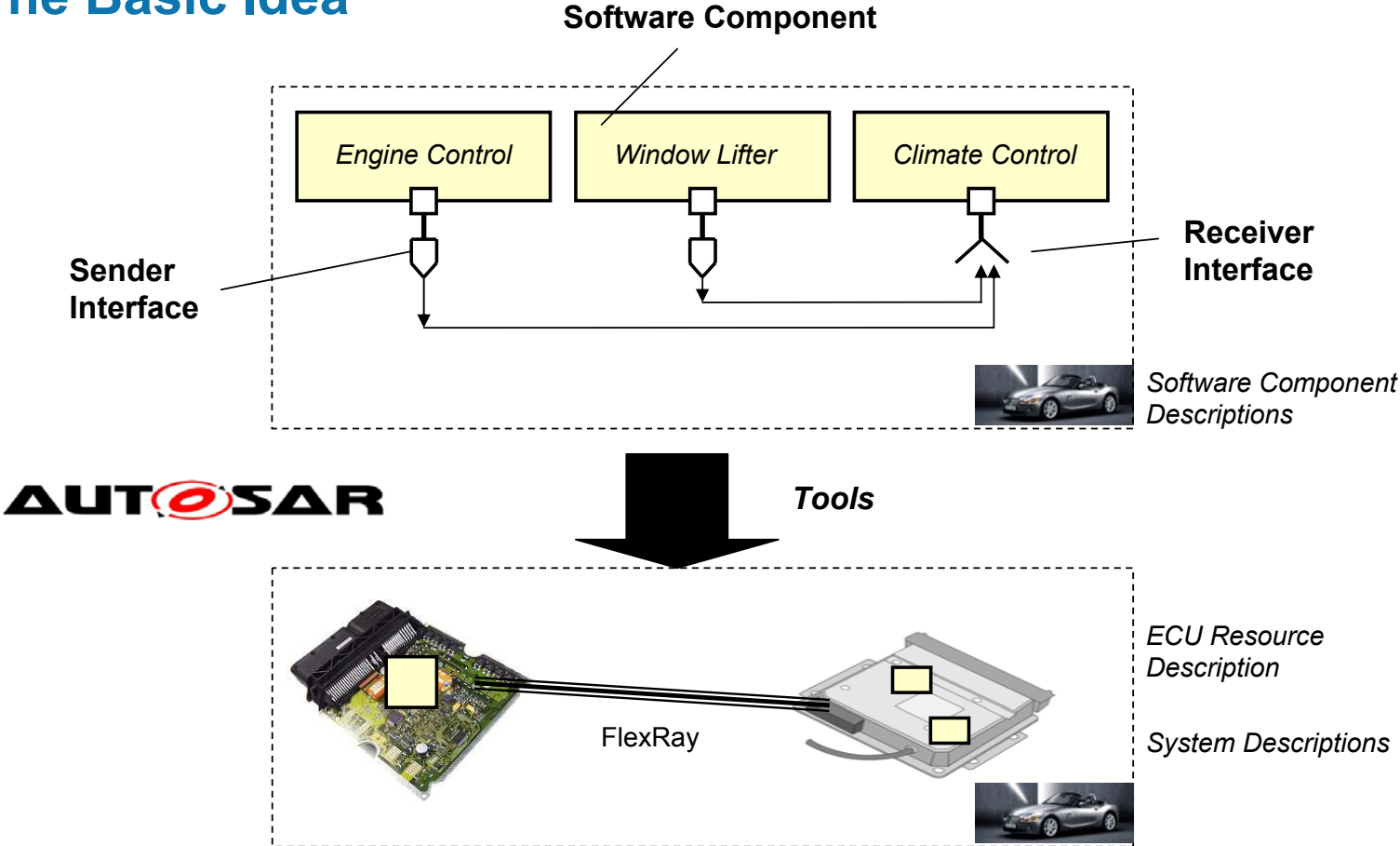
- **Functional Domains**

- Powertrain
- Chassis
- Active and passive Safety
- Multimedia / Telematics
- Body / Comfort
- Man Machine Interface

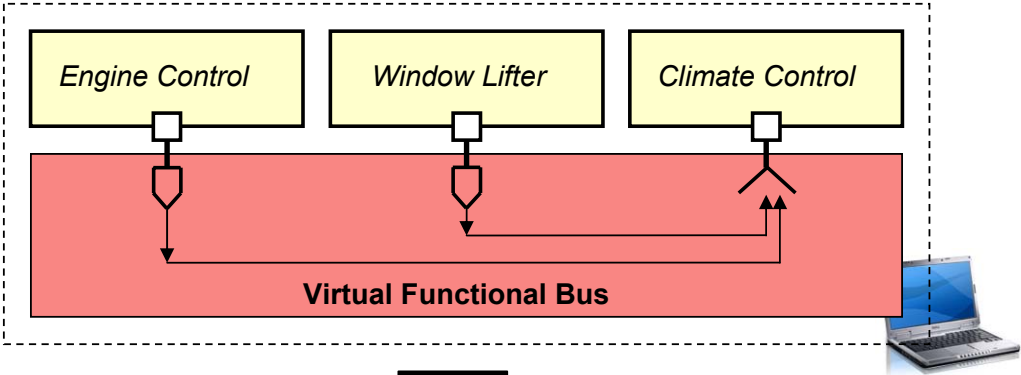


Source for Throttle: Robert Bosch GmbH

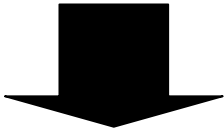
The Basic Idea



The Basic Idea

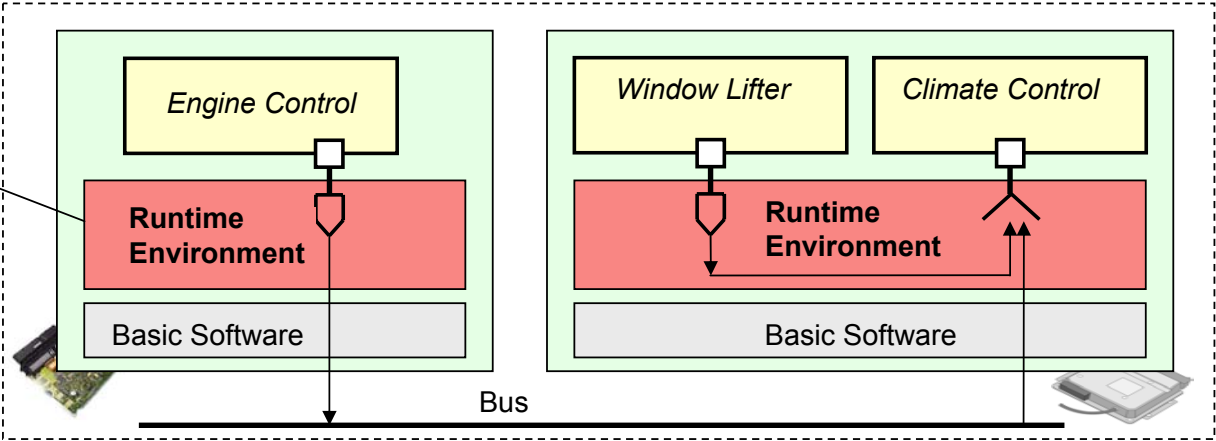


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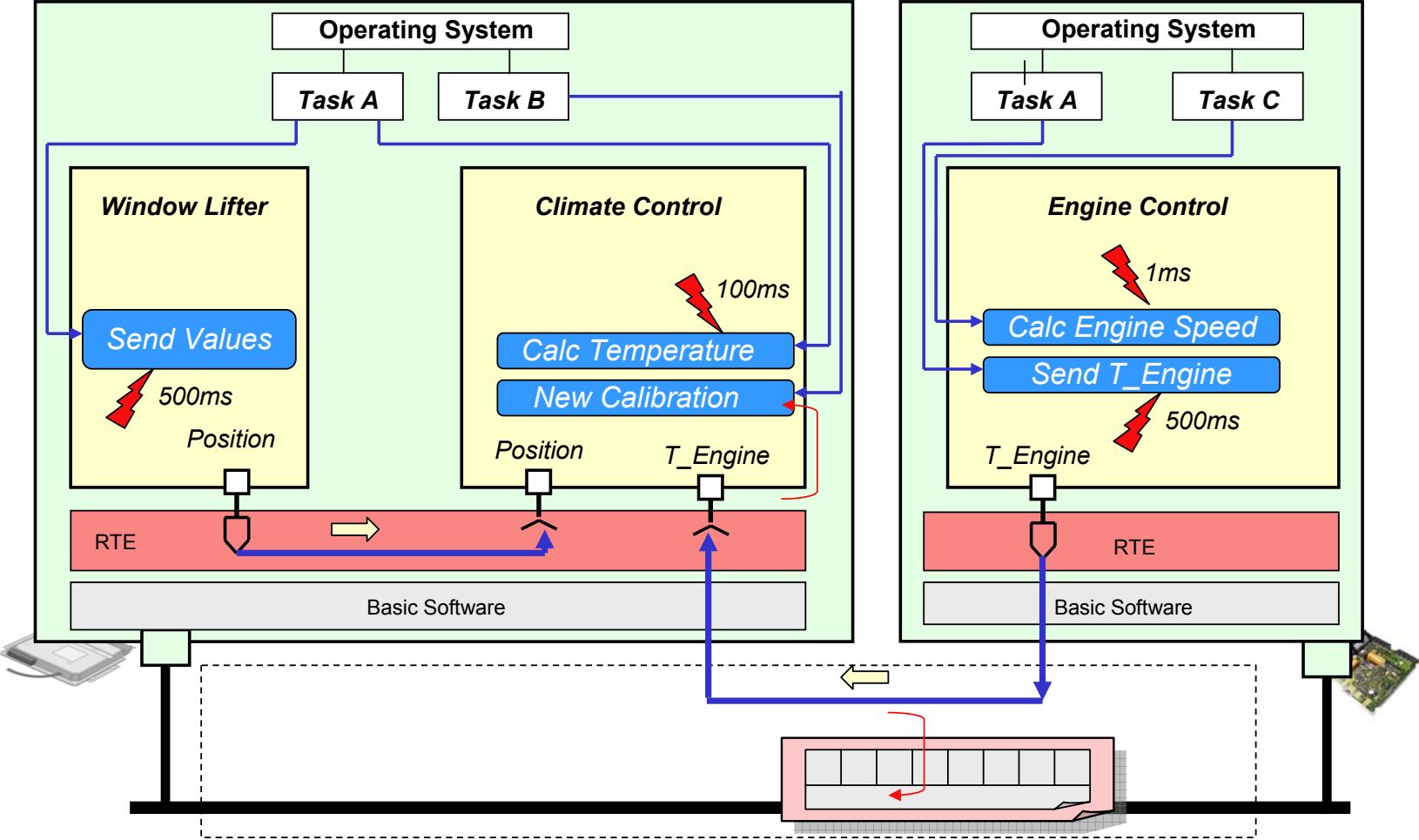


Tools

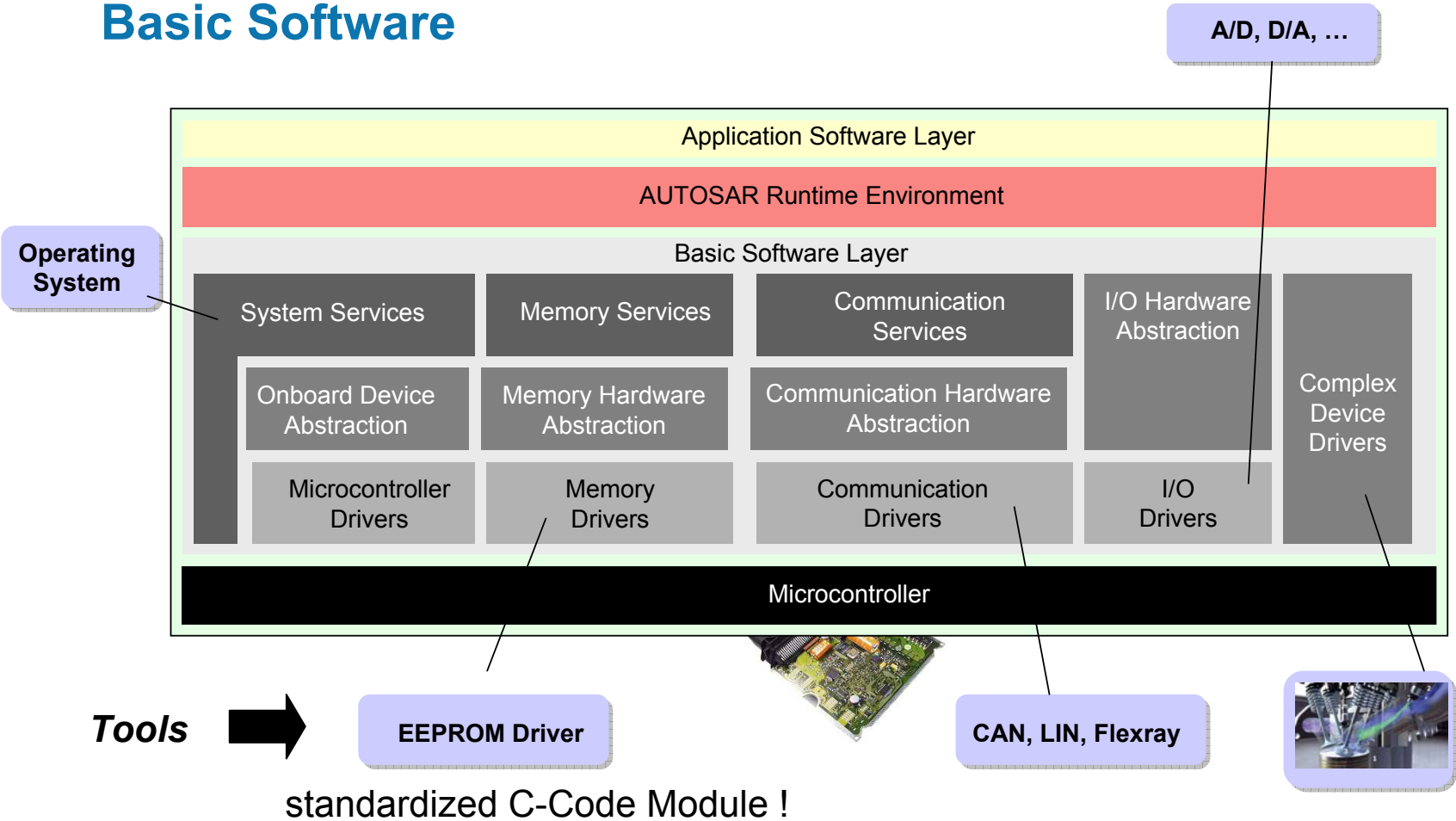
"Router"



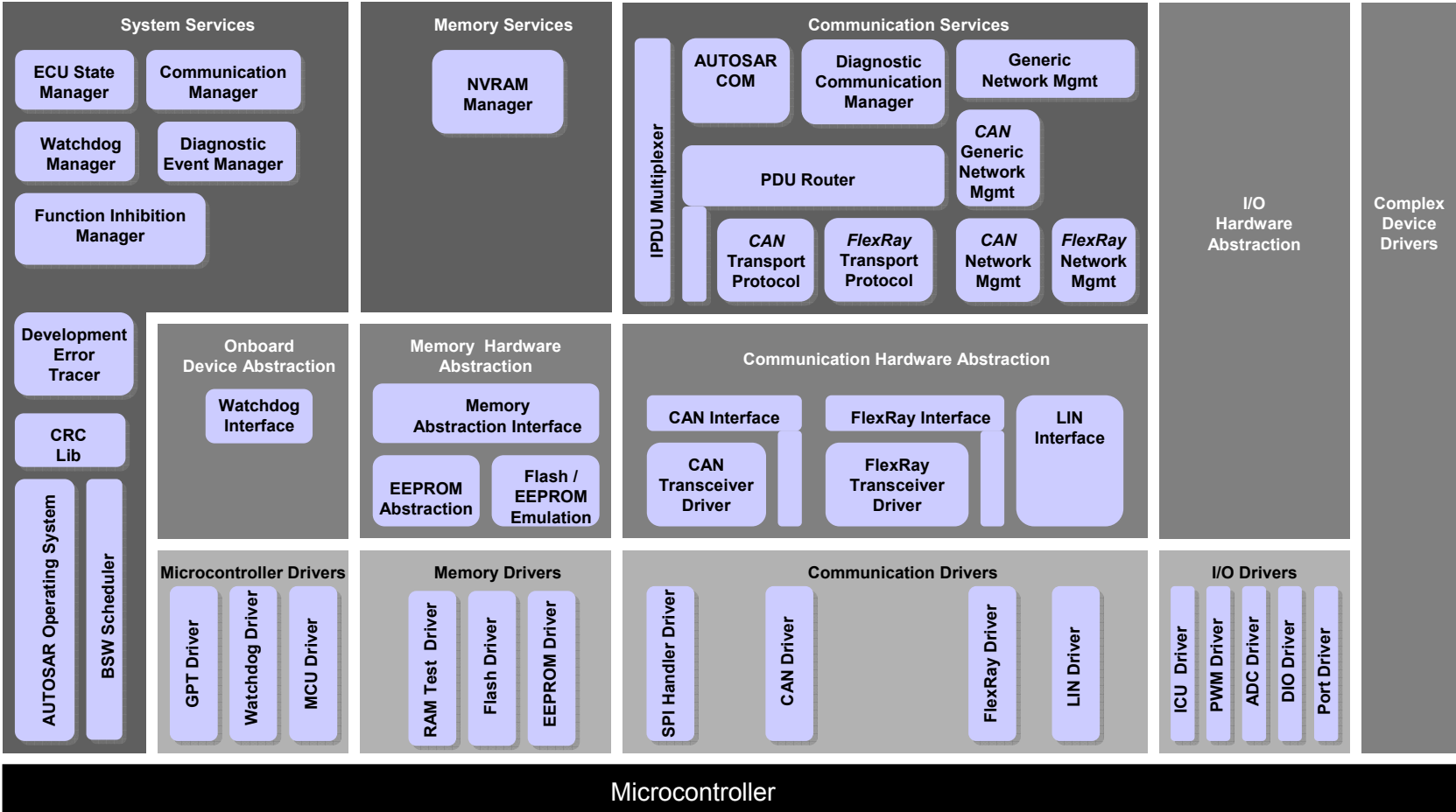
Methodology – An Example



Basic Software



Basic Software – The complete Picture (roughly 50 Modules)



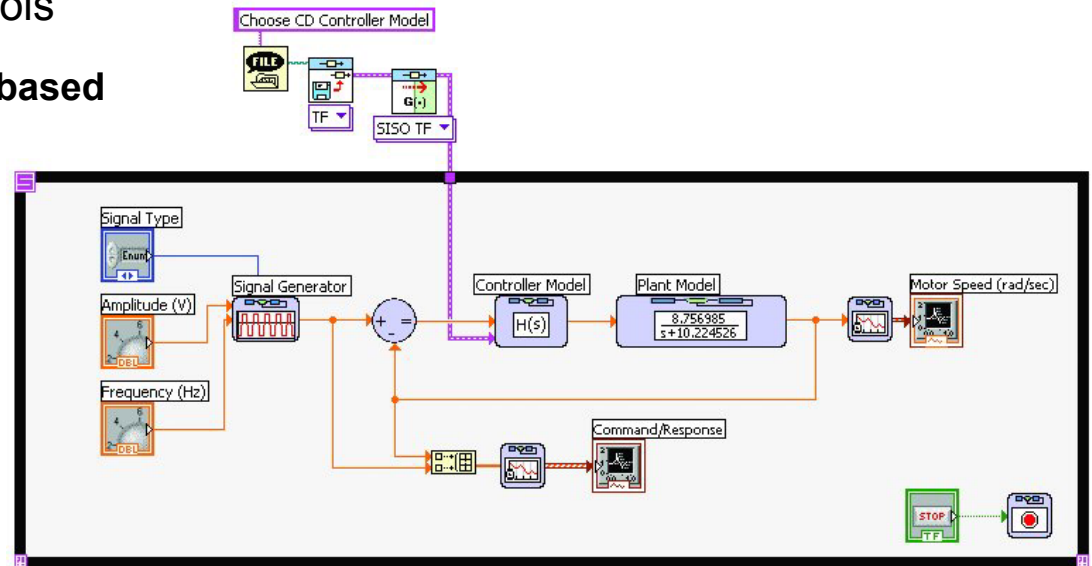
AUTOSAR from another angle

AUTOSAR Tools

must support **Component-based**

Software Development

for **Distributed Systems**



All in all ...

➔ **Model-based Development** will be even more encouraged than before !

What is the Status and Roadmap ?

- **AUTOSAR**

- AUTOSAR **V3.0** has been released **End of 2007** and is **public** now
 - roughly **10.000 pages** of documentation !
 - very sophisticated and complex !
- AUTOSAR concepts have been **implemented, tested and validated** by different vendors
 - Tools and Basic Software are available !
- **SOP** of first AUTOSAR vehicles expected for **2010-2012**

Thank you for your Attention !

- SYSTEMECS
 - Founded in 1994; **independent**
 - 35 highly qualified Employees
 - Location Leinfelden-Echterdingen
 - www.systemecs.com, info@systemecs.com
 - Focus:
 - **Consulting & Workshops for Automotive Embedded Software**
 - Product Lines, Software-Architecture, **AUTOSAR**

