20 Years of Endurance and Global Success

AUTOSAR Day China 2023

Thomas Rüping, AUTOSAR Chairperson
Increasing Complexity and Amount of Software

- Increasing complexity and amount of software
- Mechanics
- Electric Support
- Infotainment
- Linked Networks
- 90% of All E/E-Driven Innovations
- Vehicle-Backend Connection
- Zone Architecture

- Domain/Vehicle Controller
- Deeply Embedded ECUs
- Obsolete ECUs
- Integration Process
- Intelligent Actuators/Sensors

- Distributed ECUs
- Centralization
- Integration
- Domain Fusion
- Vehicle Computer

- 1970: Mechanics
- 1980: Electric Support
- 1990: Infotainment
- 2000: Linked Networks
- 2010: Major E/E-driven Innovations
- 2020: 90% of All E/E-Driven Innovations
- 2025: Vehicle-Backend Connection

- Zone Architecture

- AUTOSAR Day China 2023
AUTOSAR Basic Approach

AUTOSAR ensures an advanced complexity management of integrated E/E architectures through increased **reuse** and **exchangeability of software modules** between OEMs and suppliers.

- **Exchangeability between manufacturers’ applications**
  - Supplier A
    - Chassis
    - Safety
    - Body/Comfort
  - Supplier B
    - Chassis
    - Safety
    - Telematics
  - Supplier C
    - Body/Comfort
    - Powertrain
    - Telematics

- **Exchangeability between suppliers’ solutions**
  - Platform a.1, a.2, a.n
  - Platform b.1, b.2, b.n
  - Platform c.1, c.2, c.n
  - Platform d.1, d.2, d.n
  - Platform e.1, e.2, e.n

- **Exchangeability between vehicle platforms**
  - Supplier A
    - Chassis
    - Safety
    - Body/Comfort
  - Supplier B
    - Chassis
    - Safety
    - Telematics
  - Supplier C
    - Body/Comfort
    - Powertrain
    - Telematics

Supplier B
- • Chassis
- • Safety
- • Body/Comfort

Supplier C
- • Body/Comfort
- • Powertrain
- • Telematics

Supplier A
- • Chassis
- • Safety
- • Body/Comfort
More Than 350 AUTOSAR Partners

9 Core Partners

BMW Group  Bosch  Continental  Daimler  Ford  gm  PSA  TOYOTA  VOLKSWAGEN

60 Premium Partners

Premium Partner Plus

58 Development Partners

+ 146 Associate Partners
+ 27 Attendees
Geographical Partner Distribution

North America: 41
- Core: 2
- PPP: 0
- Premium: 8
- Development: 6
- Associate: 22
- Attendee: 3

Europe: 155
- Core: 6
- PPP: 1
- Premium: 28
- Development: 36
- Associate: 55
- Attendee: 29

Africa: 3
- Core: 0
- Strategic: 0
- Premium: 0
- Development: 2
- Associate: 0
- Attendee: 1

Asia: 155
- Core: 1
- PPP: 1
- Premium: 27
- Development: 33
- Associate: 86
- Attendee: 7

Hub in China successfully established 2022

Last Update: 22.02.2023
China Hub Roles (Mar 2023 Status)

AUTOSAR China Hub

Speakers Team

Management Team

AUTOSAR Regional Standardization Group China

University Program Training Program

China

AUTOSAR SC

Hub0 (association)

Management Board

AUTOSAR Communication Team

AUTOSAR PL Team

3rd Party Orgs in China

NTCAS CAIFS EV100 CASA AUTOSEMO

Hub Concept

AUTOSAR

AUTOSAR Teams

Volunteers, AR FTE

Jing Zhe
Spokesperson China

Echo Wang
Admin&Comm China

Qian Jiamin
Ma Qinghua
Allen Xie
Li Juanjuan

Uni Program Speaker
Wang Rongsheng, Luo Qingsong

Training Speaker
Allen Xie, Feng Zhanjun

Uni Program Speaker
Wang Rongsheng, Luo Qingsong

Training Speaker
Allen Xie, Feng Zhanjun

CASA

EV100

CAIFS

NTCAS
AUTOSAR University Program in China: Progress

Tracing back to our initial planning, we’ve proposed and been promoting FOUR types of cooperation between AUTOSAR members and Universities in China: including Joint-Lecture, Joint-Lab, Joint-Projects, and Thesis & Internship opportunities.

Lecture
- Professors start AUTOSAR lecture(s), or add AUTOSAR content to existing lectures at the universities
- Benefits: enriched lecture content, enhanced student chance for good jobs, good experience for visiting professors

Joint-lab
- Companies (especially AUTOSAR vendors) cooperate with universities, providing tools and sponsorship, used by professors and students.
- Benefits: professors get additional sponsorship, companies enhance branding & have trained students

Projects
- Companies contract universities for AUTOSAR related software development.
- Benefits: companies have software developed at a lower cost, universities get research funding, students get trained

Internship & Thesis
- Companies get candidates and tasks get finished
- Students get trained, and bridge to a job

During the past year, we’ve seen quite a few cooperations been made between our members and universities:

Including
- Joint-Lecture: (prior to the program)
- Joint-Lab:
- Thesis and Training Projects:
- Jobs and Internship Opportunities: (to be held)

AUTOSAR Joint Career Fair (Scheduled on March 22)
AUTOSAR University Program: Forecast

**Global Perspective:**
- Updating on the AUTOSAR Slides Sets
- Reviewing and Distribution opportunities
- More materials...

**China Perspective:**
- AUTOSAR Joint Career Fair (Spring + Autumn)
- Micro-Lectures for Universities (Faculty + Student)
- Promotion the Attendee Status to China Universities
- More opportunities...
Training Program Motivation

AUTOSAR China Hub will provide a long-term public AUTOSAR training program, that AUTOSAR partners and students can participate for free.

- Official trainings from AUTOSAR organization
- About AUTOSAR development process, standards
- No budget and contracting process is required
- Long-term program, 2 topics per Month
- Training will be in Chinese language
Training Program Content and Schedule

The 1st training session will be online on 6th April 2023

Sessions already planned:

- **《AUTOSAR组织和标准基本介绍》**
  **Introduction of AUTOSAR Organization and Standards**
- **《AUTOSAR软件介绍》**
  **Automotive Software Introduction**
- **《AUTOSAR解决方案简介》**
  **AUTOSAR Solution General Introduction**
- **《AUTOSAR概述和应用》**
  **AUTOSAR Overview and Application**
- **《AUTOSAR诊断事件管理DEM模块培训》**
  **AUTOSAR Diagnostic Event Management and DEM Module Training**
- **《AUTOSAR CAN协议栈介绍》**
  **Introduction of AUTOSAR CAN Stack**
- **《BswM在控制器系统状态机设计上的应用》**
  **Application of BswM in Controller System State Machine Design**

To be continued...

Note: The training program is free for AUTOSAR partners and students
Future Challenges

Selected Main Drivers

Highly Automated Driving with Dependability

- Reliability
- Availability
- Maintainability

V2X, Internet of Things, Cloud-Based Services

- Security
- QoS
- Over the Air (OTA) Update/Upgrade
Future Challenges

Selected Main Drivers

Increasing Data Rates and Volume

• Automotive Ethernet
• 5G

New Automotive Processor Technologies

Centralized multi-core processors
Future Challenges
Software defined Vehicle - Multi Party Collaboration

A future automotive development environment will be provided by different organizations in an orchestrated collaboration.

*Exemplary excerpt
Thank you very much for your attention and let’s continue the success story!