Work Experience

Marc Stuessel

2010–2024

Projects

Central Controller/Fusion ECU

DURATION	10.2023–05.2024
JOB POSITION	Software Coordinator / Team Lead
CUSTOMER	ZF Friedrichshafen AG
BUSINESS UNIT	Advanced Driver Assistance Systems
LOCATION	Friedrichshafen, Germany
SECTOR	Automotive / Supplier

OVERVIEW

Product line: ZF ProAI T<xxx>L central controller for Jaguar-Landrover. The ECU hardware is based on the NVIDIA DRIVE Orin™ SoC (NVIDIA DRIVE is a compute platform by Nvidia, aimed at providing autonomous car and driver assistance functionality).

RESPONSIBILITIES

Team Lead of an external team for
- the implementation of
  - SecOC/eHSM (embedded Hardware Security Module), VKSM (Vehicle Key Management System)
  - Secure Download requirements
- analysing and fixing general defects and improving software quality metrics

TECHNICAL BACKGROUND

- Agile development according to the ZF-JLR Collaboration Model
- Windchill RV&S (formerly MKS IMS)
- DOORS
- Axivion (static code analysis)
- Vector Squore (advanced software analysis)

TEAM

My team was located in Romania and Germany. The entire development was carried out in Poland, India and Germany.

TEAM SIZE

11

PRODUCT FEATURES

- Vector Autosar stack
- The Communication component is generated from ARXML models supplied by the OEM

Next generation mid- and short-range radar products

DURATION	04.2022–09.2023
JOB POSITION	Solution Manager
CUSTOMER	Continental Automotive GmbH
BUSINESS UNIT	Advanced Driver Assistance Systems
LOCATION	Lindau, Germany
SECTOR	Automotive / Supplier

OVERVIEW

This is Conti's sixth 76–81GHz short-range radar generation providing high performance for corner position application (including NCAP support). Supports various vehicle architectures with its availability as smart and satellite radar as well as flexible communication interfaces. Product family ranges from NCAP focused entry-level variant to best in-class premium variant.

RESPONSIBILITIES

SAFe 5 Software Solution Manager. Tasks included:

- identifying what needs to be done and providing Programme Increment planning input for the release trains
- plan the solution across PIs
- implement it
- verify that it meets the requirements

TECHNICAL BACKGROUND

- Agile development according to the Scaled Agile Framework 5 (SAFe 5)
- Atlassian Tools (Jira, Confluence)
- Git
- DOORS NG
- IBM Jazz (Engineering Lifecycle Management)

TEAM

The development was carried out in India and Germany

TEAM SIZE

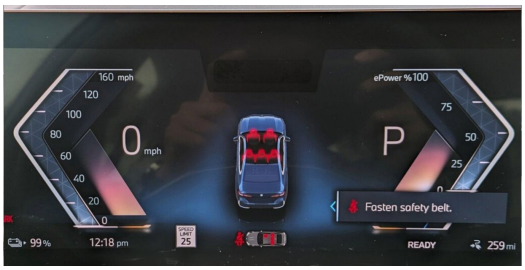
At times up to 550

AUDITS

VDA 6.3 (the VDA 6.3 process audit checks the quality management of the supplier according to the specifications of the German Association of the Automotive Industry

PRODUCT FEATURES

- The Communication component is generated from ARXML models
- The software supports several hardware variants (e.g. flexible bus configurations: CAN-FD and/or Ethernet), as well as several software variants, for example:
  - Mid-Range: Radar detection interface in accordance with ISO 23150:2021 and Conti's own interface
  - Short-Range: Object List / Blind Spot Warning / Lane Change Assist (Type IIIc) / Rear Cross Traffic Alert (with Braking) / Front Cross Traffic Alert (with Braking) / Rear Pre Crash Sensing / Occupant Safe Exit / Avoidance of Lateral Collision (Support)
  - Freespace and Parking support
  - Enhanced Cyber Security: E-safety vehicle intrusion protected applications (EVITA) Full
  - Safety Integrity Level according to ISO 26262: up to ASIL-B
  - Elevation measurement capability
  - Flashing-Over-The-Air



BMW Instrument Cluster

DURATION	05.2019–04.2022
JOB POSITION	Project Manager
CUSTOMER	Continental Automotive GmbH
BUSINESS UNIT	Division VNI HMI
LOCATION	Babenhausen, Germany
SECTOR	Automotive / Supplier

OVERVIEW

BMW's Gen5 instrument cluster ("Interaction Bar"). The Interaction Bar is a 14.9-inch curved display 102cm wide that houses the instrument cluster and infotainment system. Conti supplies the complete hardware, this project only includes the software for the instrument cluster.

RESPONSIBILITIES

Project Manager for several central system functions of instrument cluster variants, initially for BMW BEV models.
Scope:

- Flashing and Flashing-Over-The-Air
  - Initial pre-analysis of all problem reports that occurred during the flash process but were caused by all components of the overall application
- Diagnostics and bootloader (from mid-2021)
- Development of Conti-specific components

TECHNICAL BACKGROUND

- Agile development according to the Scaled Agile Framework 5 (SAFe 5)
- Atlassian Tools (Jira, Confluence)
- Git
- DOORS
- On the OEM side: Adaptive Autosar, SOME/IP
- Project metrics visualised via Grafana

TEAM

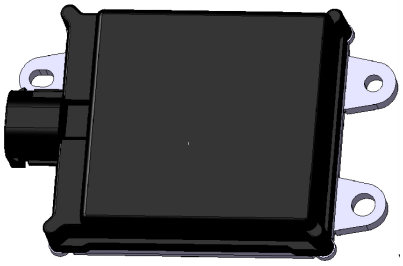
The development was carried out in Portugal, Romania, Mexico, Germany

TEAM SIZE

Overall project up to 550 team members

PRODUCT FEATURES

- Flashing-over-the-air (BMW: RSU)
- BMW AUTOSAR Core (BAC) and adaptive BMW AUTOSAR Core (aBAC) packages were provided by BMW. The aBAC is mainly used to perform the flashing process, and needed to be extensively adapted to be useable in the project.
- The hardware design provides for two microcontrollers: One for the "automotive" functions, and the second for the graphics.



Long-range radar products for Daimler

DURATION	12.2013–09.2019
JOB POSITION	Software Project Manager
CUSTOMER	Continental Automotive GmbH
BUSINESS UNIT	Advanced Driver Assistance Systems
LOCATION	Lindau, Germany
SECTOR	Automotive / Supplier

OVERVIEW

This is Conti's fourth 76-81GHz long-range radar generation. The ARS4x0DP product family consists of radar ECUs with both long- and short-range capabilities for Daimler passenger cars. The product family realizes a broad field of view by two independent scans in conjunction with – depending on variant – high-end functions like Adaptive Cruise Control, Forward Collision Warning and Emergency Brake Assist. It has also the capability to detect stationary objects without the help of a camera system.

RESPONSIBILITIES

Software project manager for several Daimler car-series. Tasks included:

- AutomotiveSPICE process scopes ACQ.4 and MAN.03
- Effort estimation, task planning
- Communication with suppliers and external customers

From June 2015 to September 2016: In addition, Software Project Manager for general functions in short-range radar projects (24 GHz) (first customer: Toyota/Lexus). This project was awarded 2 Toyota Silver awards.
From July 2015 to October 2016: In addition, Software Project Manager for the 'assisted driving in traffic jams'-feature, i.e. autonomous driving in traffic jams on motorways (first customer: GM).
From November 2016 until June 2017: In addition, Software Project Manager for a "nano radar" project.
From August 2017 to September 2019: Fifth generation long-range radar control unit (77 GHz) for a Daimler model series (direct successor project to this fourth generation long-range radar)

TECHNICAL BACKGROUND

- MS-Project
- MKS Integrity/IMS 11.x
- DOORS 9.x

TEAM

The development was carried out in Romania, India, Japan, Mexico, Germany

TEAM SIZE

Up to 45 team members

AUDITS

ASPICE, ISO TS 16949, VDA 6.3 (the VDA 6.3 process audit checks the quality management of the supplier according to the specifications of the German Association of the Automotive Industry

PRODUCT FEATURES

- Vector and Elektrobit Autosar stacks
- The software supports
  - Adaptive Cruise Control Stop & Go up to 200 km/h
  - Range up to 250 m
  - Distinguishes easily between static and moving objects

Ultrasonic parking assistant

DURATION	05.2019–04.2022
JOB POSITION	Software Project Manager
CUSTOMER	Valeo
BUSINESS UNIT	Sensors and Switches
LOCATION	Bietigheim-Bissingen, Germany
SECTOR	Automotive / Supplier

OVERVIEW

Ultrasonic parking assistant (APC2.0) of the Daimler series BR222, BR212 facelift, BR117 plus various derivatives.
The automated parking assist system helps drivers park their vehicle. It is designed to identify a suitable parking space and automatically park the car in it, utilizing ultrasonic sensors installed in the bumpers of the vehicle.

RESPONSIBILITIES

Software Project Manager for the Daimler ultrasonic parking assistant.
Scope:

- AutomotiveSPICE process scopes ACQ.4 and MAN.03
- Effort estimation, task planning
- Communication with suppliers and external customers
- Coordination of offshore development

TECHNICAL BACKGROUND

- MS-Project
- Serena Dimensions CM
- DOORS 9.x

TEAM

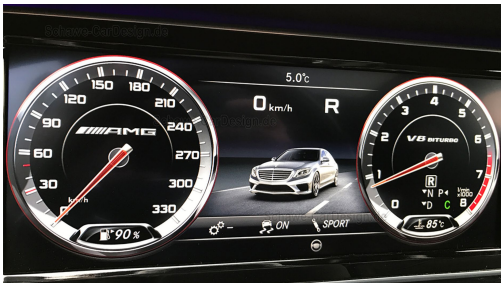
The development was carried out in Germany and Egypt

TEAM SIZE

25

PRODUCT FEATURES

- Using inexpensive ultrasonic sensors, the system detects and measures available spaces.
- The system identifies parking spaces that are parallel or perpendicular to the vehicle position.
- Once a suitable parking space is identified, the driver is notified. The driver can then hand over control of the vehicle to Park Assist; the system then takes control of the steering, accelerator and brakes to autonomously park the car.



Daimler/AMG Instrument Cluster

DURATION	02.2012–12.2012
JOB POSITION	Software Project Manager
CUSTOMER	Continental Automotive GmbH
BUSINESS UNIT	Division VNI HMI
LOCATION	Babenhausen, Germany
SECTOR	Automotive / Supplier

OVERVIEW

This is one of the very first LCD instrument clusters and Conti's first one. The AMG variant has a unique design compared to the Daimler variant: eg. the colour scheme is different, as are other details. Moreover, there are additional animated logos, functions and gauges in and between the two dials. Also: the font used is the result of a collaboration between AMG and a Swiss watch manufacturer.

RESPONSIBILITIES

Software project manager for the instrument cluster AMG/Brabus series BR222 (S-class 2013). Tasks included:

- AutomotiveSPICE process scopes ACQ.4 and MAN.03
- Effort estimation, task planning
- Communication with suppliers and external customer

TECHNICAL BACKGROUND

- MS-Project
- MKS Integrity/IMS
- Serena PVCS
- DOORS 9.x

TEAM

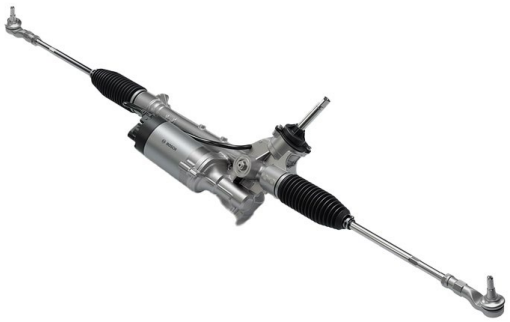
The development was partly carried out in Singapore and Romania

TEAM SIZE

Up to 10 team members

PRODUCT FEATURES

- When I joined my next Conti VNI HMI project in 2019 (see „BMW Instrument Cluster“ on page 5), the AMG instrument cluster was still a show case, despite the technical and design advances in later generations of instrument clusters. This project was a resounding aesthetic success due to AMG's outstanding design and attention to detail and of course thanks to Conti's technical realisation.
- The hardware design provides for two microcontrollers: One for the “automotive” functions, and the second for the graphics.



Electromechanical Power Steering

DURATION	10.2010–01.2012
JOB POSITION	Software Project Manager
CUSTOMER	ZF Steering Systems GmbH
BUSINESS UNIT	
LOCATION	Schwaebisch-Gmuend, Germany
SECTOR	Automotive / Supplier

OVERVIEW

Electric power steering (EPS) has two advantages compared to hydraulic power steering: it increases fuel efficiency and it lends itself to the connection of other assistance systems. I.e. in addition to the steering, interfaces to several assistance systems such as assisted driving in traffic jams, autonomous driving, parking assistant can be included.
One distinctive feature of the ZFLS EPS is the single pinion design in which the electric motor is installed parallel to the axle.

RESPONSIBILITIES

Software project manager for the electromechanical steering of the Daimler BR222/217 series (S-class 2013) and for the Mercedes-AMG BR218.
Scope:

- AutomotiveSPICE process scopes ACQ.4 and MAN.03
- Effort estimation, task planning
- Communication with suppliers and external customer

TECHNICAL BACKGROUND

- MS-Project
- Telelogic DOORS 9.x
- IBM ClearCase and ClearQuest

TEAM

The development was carried out in Germany

TEAM SIZE

Up to 12 team members

PRODUCT FEATURES

- Bus: FlexRay
- Vector Autosar stack
- The EPS controls and assists with the support of an intelligent electric motor the vehicle steering. Based on the steering signal from the torque sensor, the control unit calculates the optimal steering support and sends the information to the electric motor to provide the necessary assistance.
- Besides the calculation of the steering support depending on the steering torque, the EPS also supports various vehicle features and parameters. Hence the software comprises interfaces for the connection to other vehicle systems and components.

Trainings

Recent Certifications

DATE	TITLE	OFFERED BY	PROVIDED BY
August 2024– September 2024	**Deep Learning Specialization** https://www.syntesion.de/Trainings/DeepLearningSpecialization/Coursera BMLQJ40WEB7Y.pdf 1. Neural Networks and Deep Learning https://www.syntesion.de/Trainings/DeepLearningSpecialization/Coursera NYQBUOXAQ215.pdf 2. Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization https://www.syntesion.de/Trainings/DeepLearningSpecialization/Coursera 0W1OP1BVDY4H.pdf 3. Structuring Machine Learning Projects https://www.syntesion.de/Trainings/DeepLearningSpecialization/Coursera UOO2X4B9QO4H.pdf 4. Convolutional Neural Networks https://www.syntesion.de/Trainings/DeepLearningSpecialization/Coursera IOQK4JU6VZLF.pdf 5. Sequence Models https://www.syntesion.de/Trainings/DeepLearningSpecialization/Coursera T4UWK3BX3E6.pdf	Stanford ONLINE DeepLearning.AI	Coursera
July 2024	**Generative AI with Large Language Models** https://www.syntesion.de/Trainings/GenerativeAI/Coursera Y2YZEQYU77VR.pdf	AWS DeepLearning.AI	Coursera
June 2024– July 2024	**Machine Learning Specialization** https://www.syntesion.de/Trainings/MachineLearningSpecialization/Coursera TU8BFNKHE2E7.pdf 1. Supervised Machine Learning: Regression and Classification https://www.syntesion.de/Trainings/MachineLearningSpecialization/Coursera WD958YNEF7QA.pdf 2. Advanced Learning Algorithms https://www.syntesion.de/Trainings/MachineLearningSpecialization/Coursera 6U849FYT2K49.pdf 3. Unsupervised Learning, Recommenders, Reinforcement Learning https://www.syntesion.de/Trainings/MachineLearningSpecialization/Coursera 2ZJBY95PEAVF.pdf	Stanford ONLINE DeepLearning.AI	Coursera