

Professional focus:	Systems and Software Architect www.iconnect.cX
Name:	Dr. Mario Kupries
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Qualifications:	Diplom – Informatik (Software Engineering) Dr. rer. nat. (Software Architecture)
Expertise:	Embedded Software Systems Architect Automotive Proven Solution Expert as an Enterprise-wide Integral Manager & Consultant
Employment type:	Solo entrepreneur, independent contractor .iconnect.cX – Embedded Engineering & Consultancy AUTOMOTIVE UST-ID: DE272720850
Technical leadership:	▶ Architecture-based development and production management of embedded software intensive systems
Governance:	▶ Engineering Embedded Automotive Systems into Architectures
Domains:	<ul style="list-style-type: none">▪ E/E Automotive: ADAS / ADCU▪ Platform Development▪ Body & Comfort Domain, Infotainment (incl. Personalization, Key, MOS)
Engineering capacity:	<ul style="list-style-type: none">▪ Requirements elicitation for embedded systems (multi SoCs)▪ Requirements review and test on system, integration and software level▪ Logical and functional systems architectures (microcontroller)▪ Dynamic, robust architectures for embedded systems▪ Model-based variant management of prefabricated solutions▪ Functional safety (FuSa)
Tools:	DOORS, Polarion, codebeamer, ReqIF, ...continued Enterprise Architect, IBM Rational Rhapsody, MagicDraw, ...continued Jira, github, SVN, ...continued C, C++, Java, ...continued
Memberships:	▶ automotive Berlin Brandenburg e.V. INCOSE/GfSE, VDE, VDI, Sigma Xi

► Projects abroad starting from 2000

Projects had been taken place in the Kingdom of Saudi Arabia, Sultanate Oman, U.S.A., Cyprus, Denmark, U.A.E., and India.

► Most relevant

Leadership project	faurecia GmbH
Innovation project	Siemens Automotive GmbH

► Selected projects starting from 2010 (starting with latest first)

12/2022 –

Requirements Engineer / System Architect

Company:

Siemens

Domain:

Next Integration Platform: Automated Driving Control Unit

Responsibilities:

- .ADCU State Machine, transitions and synchronization between SoCs.
- .Degradation and health management.
- .Hysteresis for permanent fault transition and hybrid error handling.
- .DTC-debouncing (over-temperature emergency shutdown, FAST POFF).
- .Requirements for UART, SAIL and USS.
- .SEV-handling.
- .Message / protocol / sequence review in agreement to FUSA.
- .Systems architecture modelling & specification (functional, logical, physical).

10/2021 – 10/2022

Lead Systems Architect

Company:

Continental Autonomous Mobility Germany GmbH

Domain:

Assisted & Automated Driving Control Unit (ADCU)

Responsibilities:

- .Systems requirements elicitation and specification (L2R, L2D, L3R).
- .Systems architecture creation & specification (functional, logical, physical).
- .System architecture modelling (IBM Harmony Process, IBM Rhapsody).
- .Partitioning (Safety, Performance) and distribution, deployment of functions.
- .Variant management (model-based).

02/2021 – 10/2021

Systems Architect

Company:

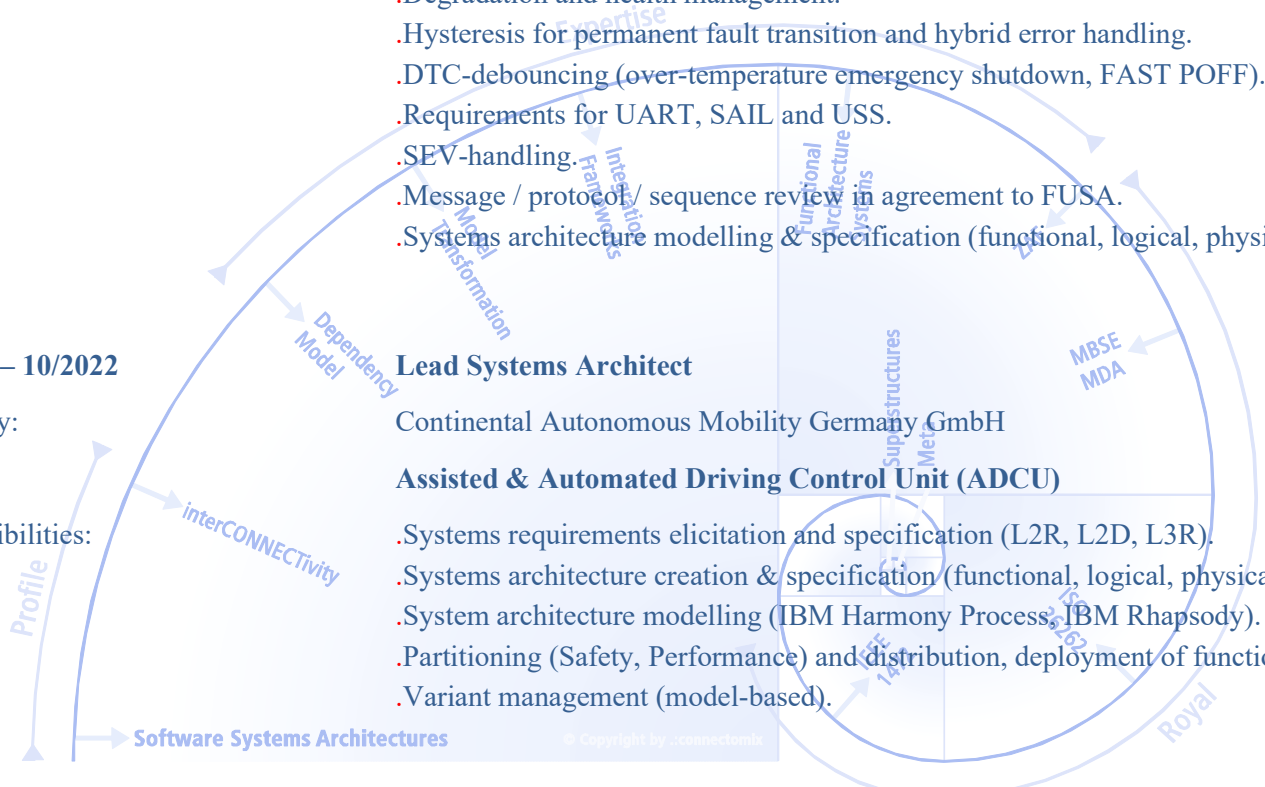
HELLA Aglaia Mobile Vision GmbH

Domain:

Battery & Energy Management Systems (BMS) Automotive

Responsibilities:

- .Systems, safety and software requirements elicitation and specification.
- .Definition of functional safety concept (ISO 26262).
- .Modelling of system architecture.
- .Derivation of an AUTOSAR compliant software architecture.
- .Modelling of an embedded BMS architecture.



04/2020 – 12/2020

Position: **Software Architecture Analytica**

Company: .:icconnect.cX

Domain: **Software Systems Architecture & Engineering Framework Automotive**

Responsibilities:

- . Consultation in the discipline of ASIL compliant software architecture framework (ISO 26262, ISO/PAS 21448, ISO/SAE 21434).
- . Software construction methodology. Model scope and transformation.
- . Degradation in context of software architecture as a product.
- . Functional as well as technical safety concepts. Hazard, Risk and Operability.
- . ISO 26262 compliant determination and allocation.

12/2019 – 03/2020

Position: **Consultant: Systems Safety Architect (Homologation Phase)**

Company: ZF Friedrichshafen AG
Friedrichshafen, FR GERMANY

Domain: **Software - Hardware Safety, Active Kinematics Control**

Responsibilities:

- . Analysis and measurement FMEA, FMEDA, FTA, FMEAD, FDA.
- . Safety Goals: Requirements matrix, traceability.
- . System Hardware – Software interoperability under Safety viewpoint.
- . ISO 26262 compliant ASIL determination, decomposition, and allocation.

02/2019 – 10/2019

Position: **Lead Software Systems Designer**

Company: Continental Automotive GmbH
Babenhausen, FR GERMANY

Domain: **Interior Camera Platform AUTOSAR Adaptive - ADAS**

Responsibilities:

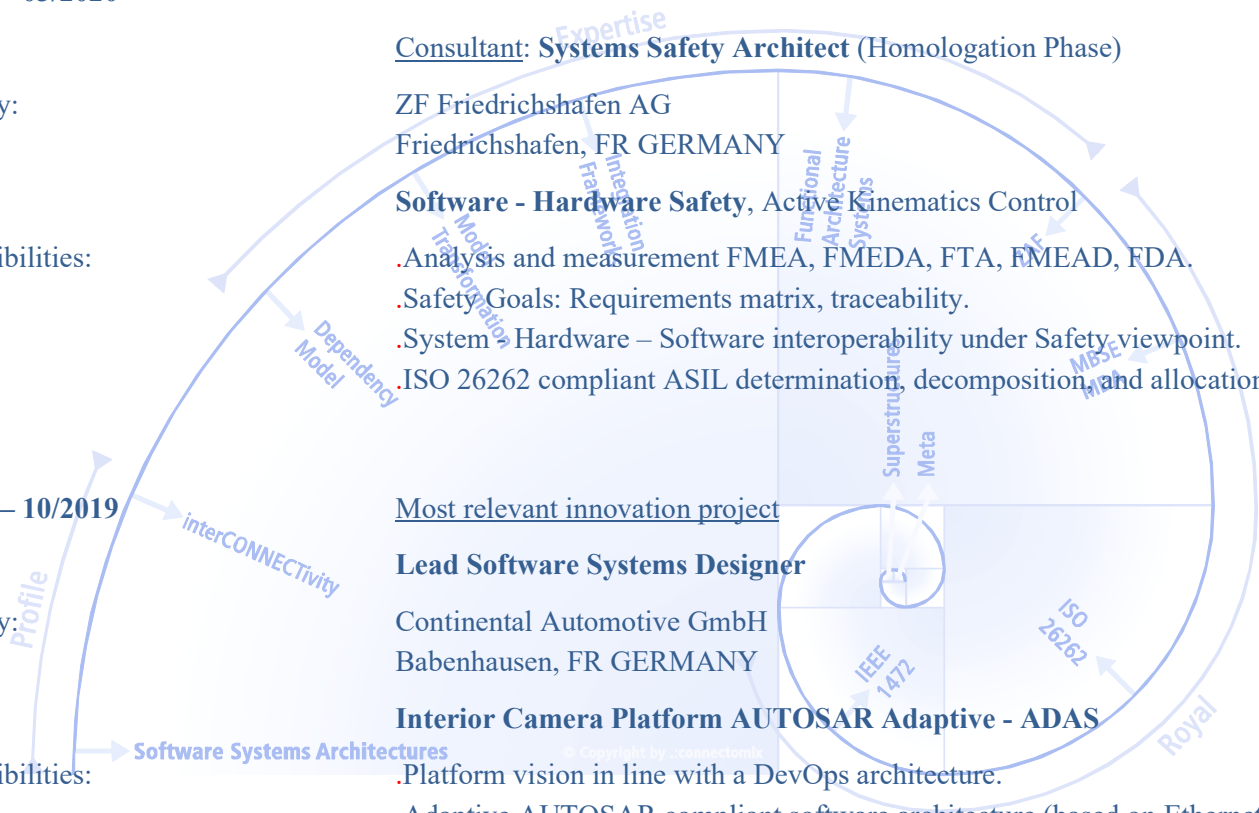
- . Platform vision in line with a DevOps architecture.
- . Adaptive AUTOSAR compliant software architecture (based on Ethernet).
- . System-wide ISO 26262, ISO 21434, ISO TR 4804 cross webbed functionality.
- . Virtualization (bare metal hypervisor).
- . ASPICE and agile software development process.

05/2018 – 12/2018

Position: **Consultant: Senior Professional Expert**

Company: Brakes India Private Limited Foundry
Chennai, INDIA

Domain: **E/E Automotive compliant AUTOSAR and ISO 26262. ASPICE 3.1**



07/2014 – 06/2015

Position: **Lead Software Systems Architect**

Company: WILO SE
Dortmund, FR Deutschland

Domain: **Embedded systems, electronics & motors, pump systems**

Project: Systems Architecture of Pumping Systems

Responsibilities:

- . Team leadership establishing an architecture based methodology.
- . Conception of architectures for multi-controller systems.
- . Object dictionary (data point, matrix) specification (CAN).
- . Feature-release management in coordination with stakeholders and suppliers.

07/2013 – 06/2014

Position: **Senior Software Systems Architect**

Company: TechniSat Digital GmbH
Dresden, FR Deutschland

Domain: **Embedded systems, automotive, infotainment, AUTOSAR**

Project: Infotainment System incl. MirrorLink

Responsibilities:

- . Composing an architecture for an infotainment system (VW-MLB, MQB).
- . DevOps concept to be established.
- . Establishing an AUTOSAR compliant basis software.
- . Coordination of change requests.
- . ASPICE (ENG1 – ENG 6).

01/2013 – 06/2013

Position: **Senior Software Systems Architect**

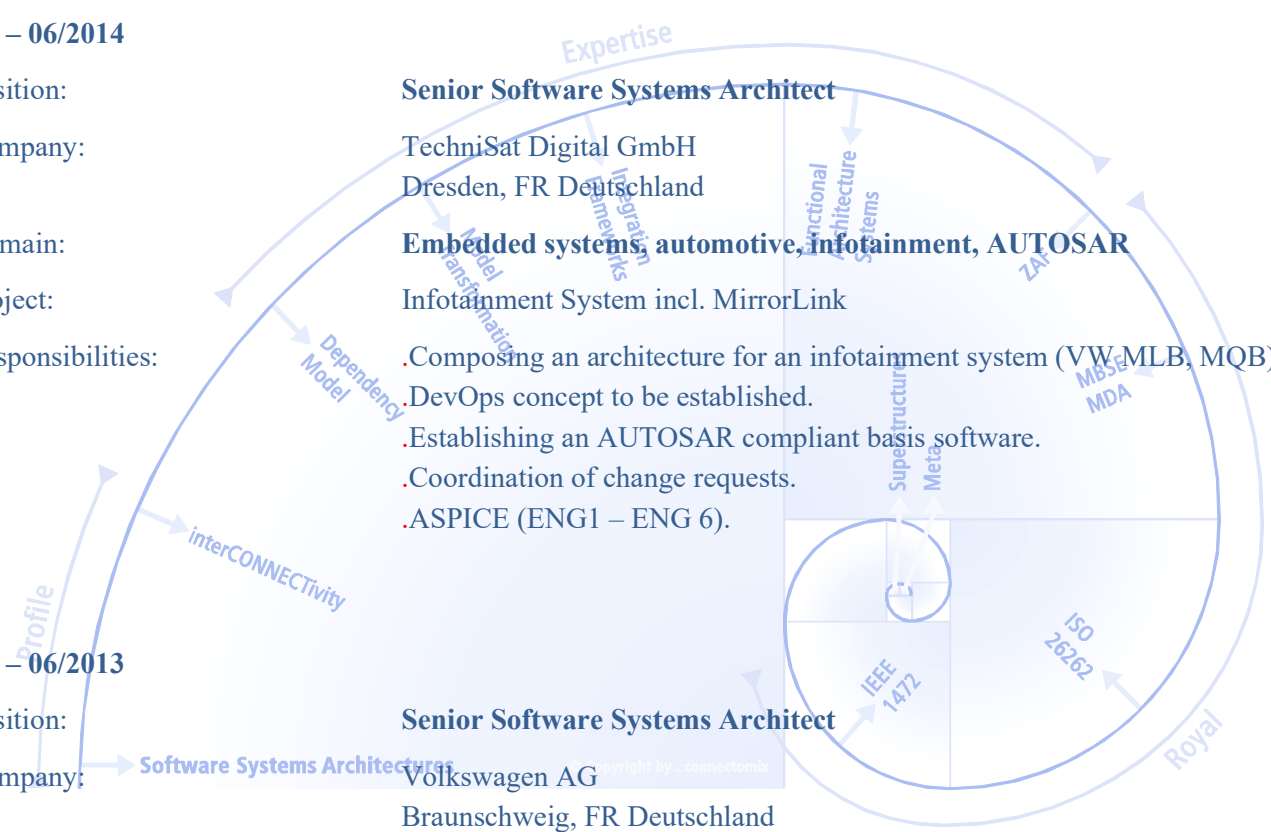
Company: Volkswagen AG
Braunschweig, FR Deutschland

Domain: **Embedded systems, automotive, steering, AUTOSAR**

Project: Electrical power steering system

Responsibilities:

- . Modelling the state machine of electrical steering systems (ECU).
- . Configuration of AUTOSAR BSW architecture.



06/2011 – 12/2012

Position: **Software Systems Architect**

Company: Continental Teves GmbH & Co KG
Frankfurt am Main, FR Deutschland

Domain: **Embedded systems, automotive, braking systems, AUTOSAR**

Project: Electrical Braking System for BMW UKL

Responsibilities:

- Software systems development and architecture decisions for ECU applications and core partitioning.
- Development compliant levels regarding BMW stages.
- ISO 26262: Functional safety software design (ASIL –C).

07/2010 – 05/2011

Position: **Systems Architect**

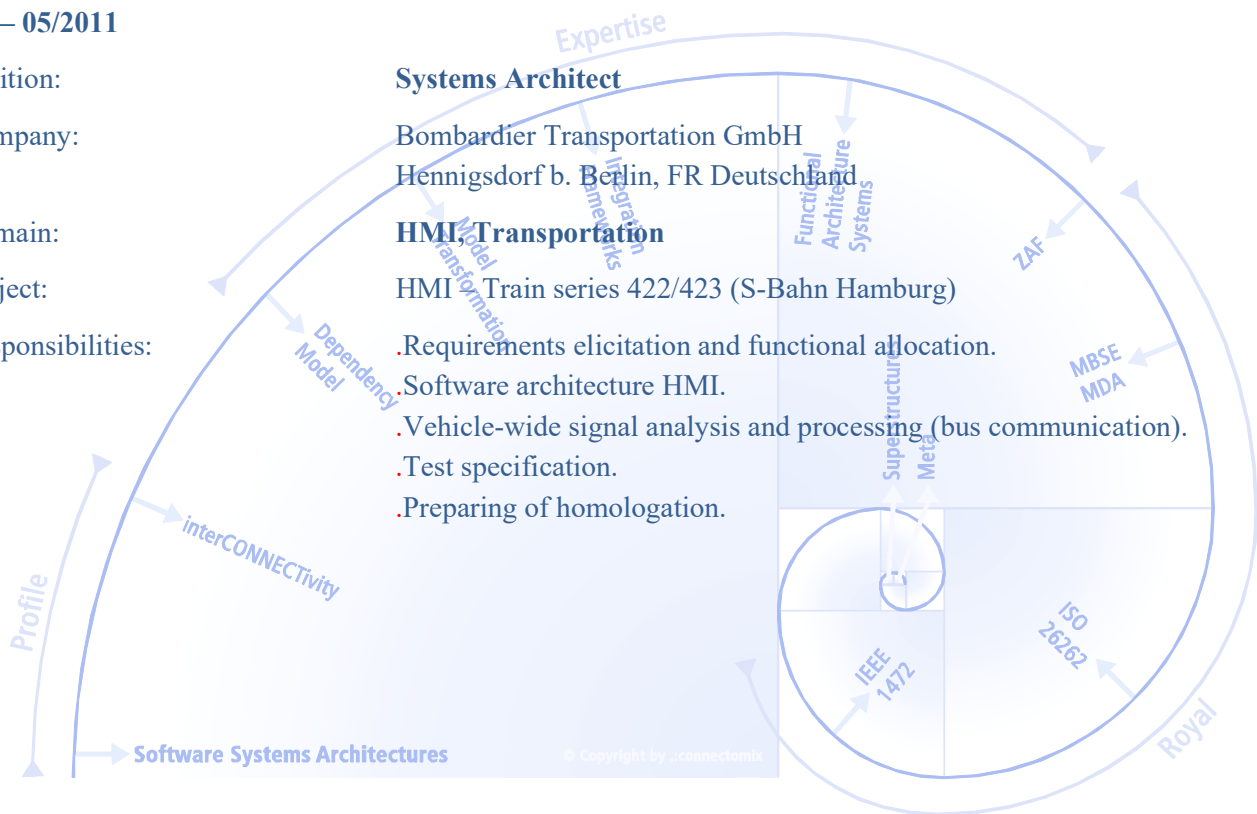
Company: Bombardier Transportation GmbH
Hennigsdorf b. Berlin, FR Deutschland

Domain: **HMI, Transportation**

Project: HMI Train series 422/423 (S-Bahn Hamburg)

Responsibilities:

- Requirements elicitation and functional allocation.
- Software architecture HMI.
- Vehicle-wide signal analysis and processing (bus communication).
- Test specification.
- Preparing of homologation.



Assessments

Company: ► K.A. Schmersal GmbH & Co. KG

Subject of Expertise: **Software platform**

- .Prefabrication and handling of variants for configuring and integrating newly designed concepts of products.

Company: ► Brakes India

Subject of Expertise: **Functional Safety (ISO 26262), AUTOSAR 4.2 compliant: 2 Wheeler ABS**

- .Holistic software systems architecture development process.
- .DevOps architecture concept.
- .E/E design ISO 26262 ABS.
- .ISO/SPICE.

Company: ► Freyer & Siegel Elektronik GmbH & Co. KG

Subject of Expertise: **Function and Architecture Patterns for Autoclave platforms**

- .IEC 62304 compliant development process definition.
- .Software architecture-based derivation, modelling and substantiation of a tool-based product platform.

Company: ► Schaeffler Technologies AG & Co. KG

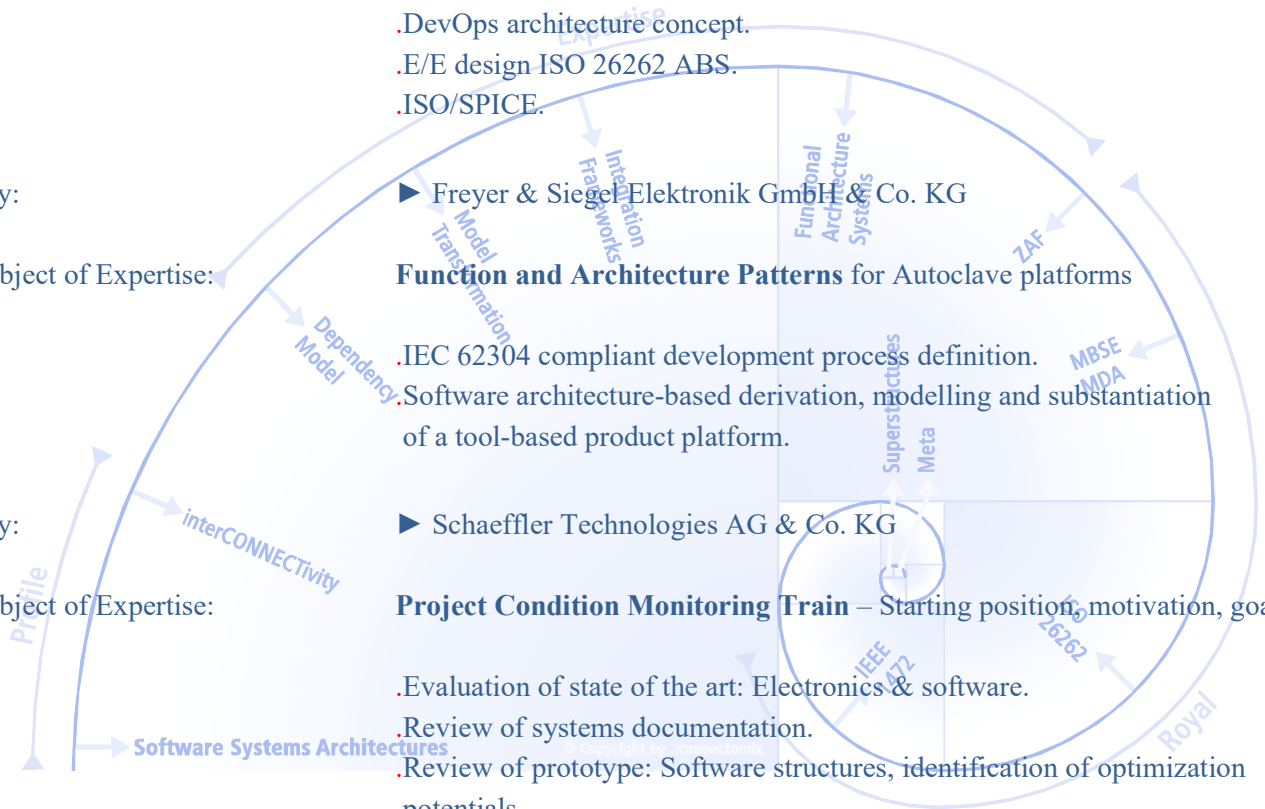
Subject of Expertise: **Project Condition Monitoring Train – Starting position, motivation, goal**

- .Evaluation of state of the art: Electronics & software.
- .Review of systems documentation.
- .Review of prototype: Software structures, identification of optimization potentials.
- .Variants handling.

Company: ► Lorch Schweisstechnik GmbH

Subject of Expertise: **Project Planning of Systems Architecture for Welding Technology Robotics**

- .Metrics: Measurement of requirements specification analysis quality.
- .Systematic derivation of hardware and software architectures.
- .Definition of a model-based development process.



► Business / Markets & Consultancy

07/2018 – 12/2018

Position:

Company:

Domain:

Subject of Expertise:

► BEN RESEARCH PTE LTD

Senior Professional Expert

BEN RESEARCH PTE LTD
Chennai, INDIA

Private Equity

- . Technical market assessment for the acquisition of filling in missing capacity.
- . Compilation of divers risk portfolios.
- . Exit scenarios.
- . Buy-out management.

► Conferences

16. – 17. March 2021

Position:

Company:

Domain:

Subject of Master Class:

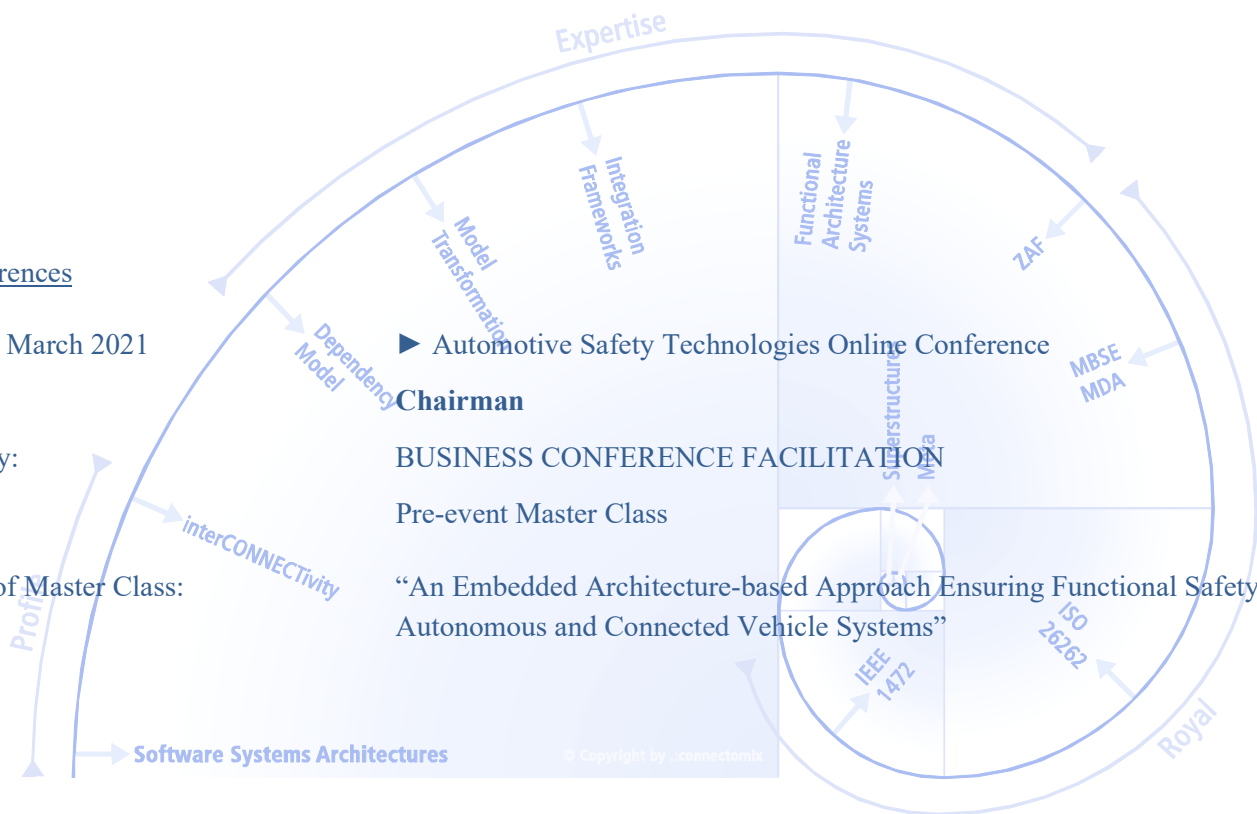
► Automotive Safety Technologies Online Conference

Chairman

BUSINESS CONFERENCE FACILITATION

Pre-event Master Class

“An Embedded Architecture-based Approach Ensuring Functional Safety in Autonomous and Connected Vehicle Systems”



▶ Trademarks

DPMA 30 2011 030 361:

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