PROFIL

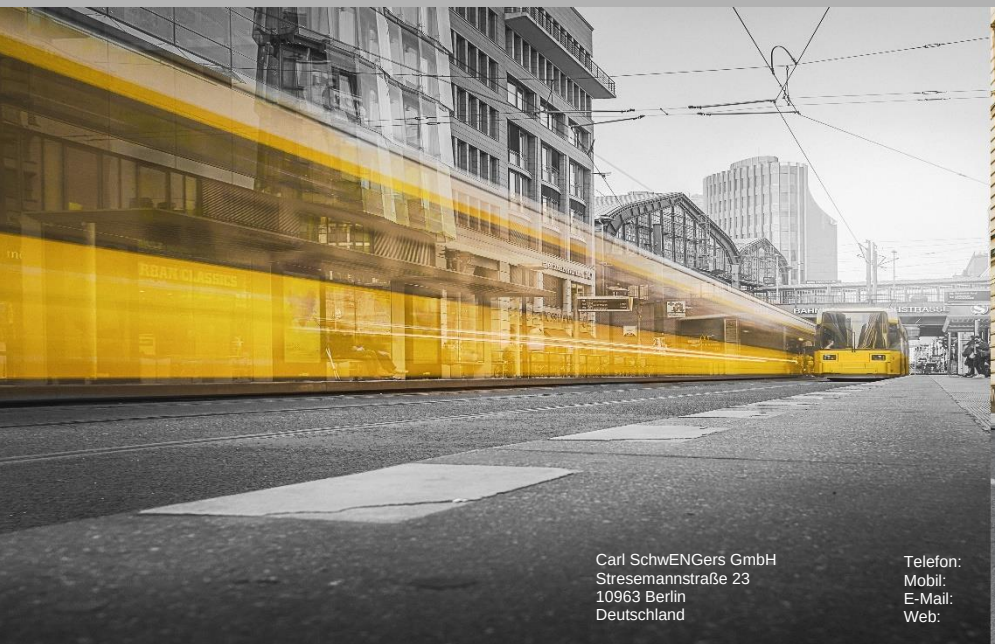
Conrad Zilkens

Industrial, materials and aerospace engineer

> 10 years experience in the automotive & railway industries

> 5 years project engineering & management experience

> 5 years experience as team leader & department head



Carl SchwENGers GmbH
Stresemannstraße 23
10963 Berlin
Deutschland

Telefon: +49 (0)30 2201 0561
Mobil: +49 (0)176 1516 7254
E-Mail: info@carl-schwengers.de
Web: www.carl-schwengers.de

Engineering Experience

2023 – 2024 (ongoing)

RAM / LCC for mainline and metro projects for a rolling stock OEM

- RAM / LCC for up to 6 mainline and metro projects in parallel
- Maintenance planning in accordance with EN 17023
- Proof of safety (SiNa) for the maintenance plans in accordance with the specifications of DIN EN 50126
- Draft of safety examinations regarding the extend of the limit intervals for maintenance measures of different rolling stock subsystems
- Creation and management of the project related maintenance design justification files (MDJF)
- Supplier negotiations to improve individual RAM / LCC performance of rolling stock subsystems
- Representation of the client towards the end customer
- Advice and training of the customer's RAM / LCC team
- Draft and roll-out of the new IRIS compatible RAM / LCC process

2019 – 2023

Model-based System Engineering of E/E-Architectures for automobiles

- Model-based automotive system architecture development using the Vector PREEvision software
- Creation of a logical architecture model for combustion and electric cars
- Allocation of the logical model elements to software and hardware model representations
- Allocation of the software signals to the modelled logical information flows
- Setup and alignment of modelling guidelines for the logical and for the software architecture
- Ensure model consistency over 3 product lines and >40 products
- Development of Java based metrics to improve modelling performance
- E/E technology development (esp. communication: signals / buses)
- ECU engineering technology consulting
- Documentation in JIRA, software / model version handling with GitHub

2020 – 2021

Functional Testing for the first electric car of an automotive OEM

- Part of a task Force setup to reduce >6.000 reported issues within 9 months prior to product roll-out
- End-to-end testing of infotainment sub-systems on test-bench and vehicle
- Documentation & reporting of deviations
- Root-Cause-Analysis with system engineer & supplier
- Test-Drives, data logging, verification & validation

2018 – 2020

Retrofit rolling stock metro “Variobahn Bogestra”

- Retrofit program for 32 streetcars during operations
- Update of vehicle wiring schematics according to latest specifications (up to 3.000 changes per train)
- Implement changes on Bogie system, interior fittings and passenger comfort systems
- Verification & documentation
- IBS support

2017 – 2018 **Maintenance Engineering Consulting**

- Product Introduction / maintenance for BR-490 (S-Bahn Hamburg)
  - Corrective maintenance support
  - Retrofits
- Machine Park inventory for a medical device manufacturer (Jena)
  - Creation of maintenance plans
  - Collection of supplier data

2016 – 2017 **Rolling stock RAM / LCC Bid Engineering**

- Evaluation of customer contract documents for mainline, streetcar and special rolling stock projects regarding RAM / LCC requirements
- Determination of availability and reliability targets, their definition / calculation, validation and related claims
- Collecting customer requirements on maintainability (specific over-haul periods & times, specific (sub-)system requirements)
- Deriving additional system requirements (e.g. for diagnostics, fault tolerances, etc.)
- Creation of the relevant RAM plan sections
- Creation of the validation plan
- Creation of impact analyses indicating the risks caused by RAM / LCC requirements
- Brake down of overall system availability, reliability, and maintainability targets into individual subsystem targets
- Participation in FMEA / FTA analysis
- Supporting procurement / system engineer - supplier negotiations

2015 – 2017 **Rolling stock FRACAS / Reliability Growth Engineering**

2016 – 2017: BR-442 (Talent 2)
2015 – 2016: Do2010 (DB IC-2)
2015 – 2016: BR-430 (S-Bahn Stuttgart & Frankfurt am Main)

- Implementation of a comprehensive incident reporting system to capture and document failures, incidents, and anomalies occurring on the rolling stock product and its systems
- Classification of failures according to derived failure modes from FMEA and field experiences
- Obtaining product performance data (Performance monitoring reports, diagnostic data, failure reports, system logs, operational reports, etc.)
- (Semi-) automatically cropping and combination of performance data to create an operational twin model of the product and analysis of the resulting data model
- Root cause analysis, solution development and verification
- Implementation, testing and monitoring of the solution within product operations to facilitate the reliability growth
- Monitoring and documentation of the rolling stocks availability and reliability during operation in relation to the contractually agreed acceptance criteria
- Documentation of lessons learned

2014 – 2015 **Product Introduction SBB FV-Dosto**

- Product introduction for the first 2 trainsets of the SBB FV-Dosto fleet
- Documentation & reporting of deviations
- Open-item management
- IBS support

2014 **Project Engineering Planning SBB FV-Dosto**

- Engineering document generation planning, tracking & reporting
- Analysis of deviations and development of mitigation actions
- Identification of gaps / mismatches and facilitation of workshops

2013 – 2014 **Systems Engineering & Standardization**

- Brake Systems Engineering support on various rolling stock projects
- Update of the standardization documentation
- Engineering process development & documentation

2010 **Energy- and cost-reduction-analysis of a heavy plate roller plant**

- Recording of the measured values & documentation
- Analysis of the collected data
- Quantification of the economisation capability
- Report generation & reporting
- Measurement equipment capability controls

Management Experience

2023 – today **Managing partner of Carl SchwENGers GmbH**

- Development of a development service provider / engineering office providing model-based automotive and rail system architecture, E/E-engineering, RAM / LCC and project engineering
- Development of the corporate structure, processes, and sites
- Technical Sales, Project Management
- Corporate management, financing, accounting

2021 – 2023 **Area Manager Engineering / Partner**

- Company at the begin of collaboration: 2 employees, turnover ~250k €
- Development of engineering consulting projects along the value chain of a model-based E/E engineering software
- Product owner and software development for the E/E engineering software
- Development of the company structure, processes, and sites
- Technical Sales, Project Management
- Review of finance and accounting, process management establishment
- Company at the end of collaboration: 6 employees, turnover ~600k €

2017 – 2021 **Business Development Manager / Head of Department**

- Department at the begin of collaboration: 1 employee, turnover 0k €
- Development of a new engineering service provider
- Engineering & delivery responsibility for all projects within the region
- Disciplinary responsibility for up to 42 engineers in 22 simultaneous projects
- Budget responsibility for all SOW projects in eastern Germany
- Technical focus in system engineering, model-based vehicle architecture development, the development of software architecture for infotainment systems for passenger cars, maintenance and retrofitting of rail vehicles, various electrical engineering services
- Responsible for concept development, specifications, implementation, project management and accounting
- Simultaneous role as project manager in all executed engineering projects
- Department at the end of collaboration: 43 employees, turnover ~4.8 Mio. €

2016 – 2017 **Head of Field Engineering / Team Leader Rolling Stock**

- Strategy and budget responsible for all regional field engineering activities
- RAM / LCC validation for all projects within the region
- Input for Ram / LCC analysis of next generation projects
- Bid Engineering support
- Disciplinary responsibility for 12 engineers

2016 **PA Vice President Engineering Rolling Stock**

- Strategy development, especially cost reduction and downsizing
- Controlling, budget planning, best cost sourcing
- Authorization of purchased engineering services and / or headcount
- Project reviews
- Engineering responsible for the Q1 audit of Deutsche Bahn

2010 – 2012 **Managing partner of ISDM 2010 UG**

- Setup and finance for a two-day international metallurgy symposium (500 participants from 14 countries)

Additional Skillsets

Languages

German	Native language
English	Fluent
French	Basic skills

Software skills

Office Applications	MS Windows, MAC OS, MS Office Applications, MS Visio, SAP, MS-DOS
Project Management	MS Project, Primavera, JIRA, Confluence
CAD Tools	Catia, Autodesk Inventor, AutoCAD
E/E Tools	Vector PREEvision, ESCAPEpro, Enterprise Architect, LabView
Simulation Software	Matlab, Abaqus, ThermoCalc, FactSage
Fleet management	IBM Maximo

Programming

Visual Basic (VBA)	Advanced
Java	Basic
HTML	Basic
Python	Basic

Education

University

2012 – 2013	European Space master program at the universities of Wuerzburg and Lulea (Sweden)
2011 – 2012	Materials engineering master program at the RWTH Aachen University with a major in steel engineering Award of Materials Engineer M.Sc.
2007 – 2011	Industrial engineering bachelor program at the RWTH Aachen University with a major in materials- and process techniques Award of Industrial Engineer B.Sc.

School

1997 – 2006	Friedrich-Wilhelm-Gymnasium & Apostelgymnasium, Cologne, Germany Award of the High-School-Diploma