

FEV Signature Solutions

FEV AutoSpec™

Significantly reduce development time and effort through automatic creation of safety and cyber security requirements and subsequent documentation

FEV offers

- ▶ Generation of Technical Safety Requirements (TSR) for multiple vehicle systems, devices, hardware levels and functions, supporting Risk Level in compliance to ISO26262, ISO21448, ISO19014, ISO215119, IEC 61508, MIL-STD-882
- ▶ Generation of Cybersecurity Requirements in compliance to ISO21434, IEC62443, ISO/IEC27001, NIST SP 800
- ▶ Proprietary approach - up to 50-percent reduction in time & effort when compared to conventional non-automated approaches
- ▶ Automatic generation of data to fulfill documentation requirements for HARA, FSC, TSC, DFMEA, DFMEDA, TARA, and more
- ▶ Transformation of documentation requirements into validation test requirements
- ▶ Regulatory compliance with multiple industries, including aerospace, defense, construction, marine, rail, mining and more.



FEV.io

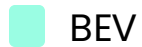
Why FEV

- ▶ FEV is a leading digital engineering services provider with extensive expertise in system engineering, testing, and regulatory compliance
- ▶ End-to-end solutions that can be applied at the component, subsystem or complete vehicle level
- ▶ Unique combination of innovative software developers and system engineers to execute on virtually any functional need
- ▶ Global presence delivering unmatched proficiency, capability, and value
- ▶ Dedicated support before, during, and after the sale

Reference projects

FEV AutoSpec™

FEV.io



BEV



FCEV



Class 5 Truck (Series Development)

- Development of two Class 5 FCEV truck, two platforms for markets in Europe and the US
- Automated TSR developed for five safety critical ECUs
- Achieved considerable program and cost reductions, shorter review times, improved quality/completeness with full compliance to ISO 26262
- Automation of process allowed improved consistency and traceability of work products
- Tool supported SW D-FMEA (AIAG/VDA r1) and FTA
- Cross-verification of TSRs vs. DFMEA failure modes vs. FTA basic events



Class 8 Truck (Series Development)

- Development of two Class 8 truck platforms (BEV & FCEV)
- Automated TSRs developed for six safety critical ECUs on each platform
- Achieved considerable program and cost reductions, shorter review times, improved quality/completeness with full compliance to ISO 26262
- Automation of process allowed improved consistency and traceability of work products
- Tool supported SW D-FMEA (AIAG/VDA r1), FMEDA and FTA
- Cross-verification of TSRs vs. DFMEA failure modes vs. FTA basic events vs. FMEDA diagnostic coverage



Loader (Series Development)

- Development of a high voltage, battery electric tracked and wheeled loaders
- Loader and work products were developed and compliant to ISO 19014
- Perform MCSSA (Machine Control System Safety Analysis) in place of HARA
- Automated TSR development for seven safety critical ECUs
- Achieved considerable cost reduction, shorter development and review times, improved quality/completeness, and full compliance to ISO 19014
- Tool supported HW and SW D-FMEA (AIAG/VDA r1), FMEDA and FTA
- Cross-verification of TSRs vs. DFMEA failure modes vs. FTA basic events

FEV AutoSpec™ overview

FEV SIGNATURE SOLUTIONS

SystemSpec™

- Use to define vehicle parameters: target market, performance requirements, quality and life metrics, etc.
- Identifies and imports applicable regulatory requirements
- Automatically writes vehicle-level functional requirements



SafetySpec™

- Use to define vehicle characteristics such as implemented technologies, use cases, etc.
- Identifies and imports risks to generate HARA, safety goals, ASILs, and FuSa concept
- Provides safety measures in support of risk management
- Generates compliant set of technical safety requirements.
- Provides input data for safety analyses, incl. fault tree analysis, D-FMEA and FMEDA



CyberSpec™

- Use to define the E/E systems of your vehicle
- Identifies and imports threats and other cybersecurity details to generate: TARA, cybersecurity goals, claims and risk treatment, as well as cybersecurity concept
- Automatically assigns assurance measures in support of cybersecurity requirements



ValidationSpec™

- Automatically transforms requirements into validation plans based upon in part on ISO 16750, including:
 - Validation of cybersecurity measures & requirements
 - Validation of functional safety measures
 - Verification of vehicle performance metrics,
 - Traceability of testing throughout the tool and its work products



Get in touch with us for further information



[www.fev.com/en/
signature-solutions](http://www.fev.com/en/signature-solutions)