Murarasu Automotive Consulting

Freelance automotive software test engineer with over 8 years of experience in:

- AUTOSAR integration & validation

- UDS diagnostics, DTC, XCP, CCP, CAN, Flashing (OTA, Bootloader)

- Software Integration Testing (low-level to system-level)

- Functional Safety (ISO 26262 FSP Exida Certified)

- ASPICE Level 3 process support (SwE5 audit presenter)

- MCAL testing, DMA, watchdogs, SBC communication

- Safety TPACK on Aurix & Traveo platforms

- Cybersecurity testing (Service 27/29, corrupt HEX, JTAG access)

- OEM tooling experience (Daimler, BMW, Ford, GM): CANoe, CAPL, Trace32, NEST, Monaco

- Certified: ISTQB Foundation, ASPICE Training, ISO 26262 FSP

Services:

- Software Integration & Test Planning

- UDS & DTC validation

- Flashing campaigns (HSM, OTA, Gateway flashing)

- Functional Safety validation

- Cybersecurity penetration test support

- Defect triage and root cause coordination

- ASPICE process support and mentoring

Contact:

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Advanced HVAC Climate Strategy Validation

- Simulated and validated temperature/humidity scenarios using CAPL and NI hardware.
- Verified motorized flap control and PWM outputs based on ambient feedback.
- Developed automated CAPL scripts for real-time feedback processing and fault injection.
- Ensured full coverage of OEM climate feature requirements with traceable test cases.

Project: Advanced HVAC & HMI Test Automation

This project focused on validating complex automotive HVAC climate strategies and HMI behavior under real-world scenarios, using fully automated CAPL scripts in a National Instruments HIL setup.

- Simulated ambient conditions (temperature, humidity) using CAPL and NI hardware.
- Integrated real sensor data and emulated values for closed-loop climate regulation behavior.
- Validated motorized actuators (flaps, blowers) using real-time CAPL feedback logic.
- Performed PWM output verification and button press simulations with HMI panels in CANoe.
- Ensured complete traceability against OEM climate requirements with test reporting and fault injection.

The testing covered both software-level control logic and physical system responses, ensuring robust qualification and compliance for series production of HVAC units.