Electrical Systems Engineer - Arc Fault Detection Technology in Roztoky, Czech Republic

Eaton's Aerospace business in Roztoky, Czech Republic, currently has an opportunity for Electrical Systems Engineer with working knowledge of Digital and Analog Electronics Engineering encompassing small signal, Radiofrequency, radio receiver and signal processing.

The position calls for in-depth knowledge of development and implementation of the architecture, algorithm and controls for arc fault detection technology through agreed Technology Readiness Levels (TRL). The application of this technology is ultimately on aircraft AC and DC power distribution systems so design experience for aerospace would be a distinct advantage. The systems engineer will also develop and manage requirements and compliance.

Good report writing skills and communication of project status with peers and senior management are required as the role will entail generation and publication of detailed technical reports at regular intervals for the purposes of communication with Eaton's customers. The hosting of in-depth design reviews with a global team will be expected.

Technical familiarity or established working knowledge of wiring arc faults would be a distinct advantage.

Essential functions:

Develop, allocate, analyze, and validate requirements while working directly with customers, project engineers, program management, and other product team members.

Work with the project manager and team members to develop and manage specification for the arc fault detection technology on the basis of customer wants and needs.

Perform analysis on the architecture and design to ensure compliance to all functional, performance, and environmental requirements.

Develop algorithms for arc fault detection.

Work with software engineering to implement the detection algorithms in embedded software.

Model and analyze architecture and design using MATLAB/SIMULINK.

Develop test equipment specifications and hardware-in-the-loop test platform.

Conduct hardware-software integration and verification activities.

Manage and control requirements using DOORS.
**Basic Qualifications:**

- Master's degree in Electrical or Systems Engineering.
- Solid experience in systems design and modeling.
- The candidate should have solid knowledge of the basic control systems.
- Candidate should have experience in embedded software development
- MATLAB/SIMULINK, DOORS preferred.
- Must have a demonstrated ability to be creative, persistent and stay with a problem until it is resolved.
- Experience with the following MS Office applications: PowerPoint, Word, Excel.

**Design Engineer – Digital Electronics in Roztoky, Czech Republic**

Eaton's Aerospace business in Roztoky, Czech Republic, currently has an opportunity for a Design Engineer in Digital and Analog Electronics Engineering with small signal, Radiofrequency, radio receiver and signal processing design experience.

In-depth knowledge of high speed signal processing and associated tool chains for design and implementation such as Spice are essential to the role. Excellent organizational & communication skills are also vital as the role will involve working on R&D projects and conducting specialized tests in arc fault detection. Schematics entry experience is expected.

Additionally, good report writing skills and communication of project status with peers and senior management, and the hosting of in-depth design reviews with a global team will be required on a regular basis. The generation and publication of detailed technical reports at regular intervals is expected for the purposes of communication with Eaton’s customers.

Technical familiarity or established working knowledge of wiring arc faults would be a distinct advantage.

Narrowband digital and/or analog radio receiver design is an important skill to the role and is a positive advantage. Interfacing with medium and high speed digital electronics such as FPGAs is an advantage, as is knowledge of equipment design for aerospace and applicable standards (DO-160, DO-254)

**Essential functions:**

- Originate and develop circuit design concepts and approach using recognized methodology and procedures such as Pugh Matrices to resolve difficult problems and complicating factors.
Work with data capture and signal processing equipment such as deep memory oscilloscopes, spectrum analysers, radiofrequency receivers and high voltage equipment simulating aircraft power supplies.

Lead and/or support the analog and digital electronics design function and support conformance assurance to objectives and schedules, laboratory testing; prototype procurement; follow-up etc.

Produce analytical designs using tools such as LTSpice, Matlab/Simulink to tight timescales and be able to convert this analysis into practical designs in conjunction with other disciplines within the Engineering department.

Basic Qualifications:

- Engineering Degree in Electronics with bias towards analog, digital and radiofrequency design
- Knowledge of Analog electronics, small signal processing, noise filtering, radiofrequency capable circuits
- Practical Digital narrowband radio-receiver design
- Working knowledge of Spice (LTSpice, PSpice), Matlab/Simulink or similar digital prototyping tools
- HW design (DSP)
- Technical report authoring
- Good and practical understanding of design techniques for electromagnetic compatibility (EMC)

SW Engineer - Arc Fault Detection Technology in Roztoky, Czech Republic

Develop and implement the embedded software for arc fault detection technology. The application of this technology is on aircraft AC and DC power distribution systems.

Analyze system level requirements or ICD interface requirements allocated to software for completeness and function. Generate software high-level requirements from allocated systems requirements.

Essential functions:
Generate and implement low level software design and software architectures.
Provide complete traceability of the system level requirements allocated to software down to the
software architecture code modules and verification test files and test file results.
Work with the systems engineer to generate the modeling architecture for the embedded software. Participate in the modeling using MATLAB.
Generate code modules per the software architecture that perform the allocated requirements and perform initial hardware software integration on the embedded target.
Develop functional software verification test cases to test the embedded software on the target. Develop software module test cases to test specific modules to their allocated requirements. Perform software structural coverage testing as required by the DO-178B level of criticality for the embedded software.
Perform analysis required by DO-178B such as Stack Depth Analysis, Memory Usage Analysis, etc.
Manage and control software requirements using DOORS.
Generate software planning documents in accordance with DO-178B.

Basic Qualifications:

• Bachelor’s degree in Electrical Engineering or Computer Science/Engineering.
• Experience in development of embedded software (aerospace systems in accordance with DO-178B advantage).
• The candidate should have knowledge of the fundamentals of embedded software design.
• Knowledge in basic avionics systems, including avionics communications busses such as ARINC429, CAN and AFDX will be a plus.
• Demonstrated working knowledge of software development and verification tools, such as: Integrated Development Environment, C language, scripting languages like Perl and Python, PC-Lint, Rational Test Real Time, target processor assembly language, embedded target compilers, debuggers & emulators, MATLAB, etc.
(Knowledge of requirements management tools such as DOORS, ClearCase, ClearQuest welcome)
Eaton Global Innovation Center in Prague is the first Global Innovation Center in Europe and the fifth in the company's global network. It will serve Eaton's global customers to develop next generation power management solutions that make electrical, hydraulic and mechanical power operate more efficiently, effectively, safely and sustainably. For more information, visit www.eaton.com/eeic.

Eaton is a diversified power management company providing energy-efficient solutions that help our customers effectively manage electrical, hydraulic and mechanical power. The company is a global technology leader in electrical products, systems and services for power quality, distribution and control, power transmission, lighting and wiring products; hydraulics components, systems and services for industrial and mobile equipment; aerospace fuel, hydraulics and pneumatic systems for commercial and military use; and truck and automotive drivetrain and powertrain systems for performance, fuel economy and safety. Eaton acquired Cooper Industries plc in 2012. Eaton has approximately 100,000 employees and sells products to customers in more than 150 countries. For more information, visit www.eaton.com.

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