



POSITION DESCRIPTION

Position Title:	Embedded Systems Software Engineer (FULL-TIME)
Department:	R&D Applications – Protection & Automation
Reports to:	Manager, Protection & Automation
Location:	Winnipeg, Manitoba, Canada
Deadline to apply:	January 1, 2022

For more information and how to apply, please visit our careers page at <https://www.rtds.com/about-rtds-technologies/careers/>

Overview

The Embedded Systems Software Engineer in the Protection and Automation group (P&A) will participate in the design, coding, testing and documentation of real-time embedded software for new and existing products designed for power systems communication protocols that will be incorporated into the RTDS real-time Power Systems Simulator.

Position Responsibilities

- Work closely with the engineering development team tasked with development of embedded software for substation automation protocols.
- Participate in the design, coding, testing and documentation of real-time embedded software for new and existing products designed for power systems communication protocols.
- Provide domain expertise with the functionality of new and existing embedded firmware and FPGA fabric for products in the RTDS Simulator.
- Perform SOC and/or FPGA design and verification.
- Combine custom logic, generate IP cores and hard IP blocks to meet design requirements.
- Support system integration and verification.
- Support and enhance P&A designs already in production.
- Follow and develop quality assurance and quality control procedures/scripts for P&A related products.

Qualifications

Requirements

- Minimum Bachelor of Science degree in Electrical Engineering, or equivalent experience.
- Ability to follow development schedules and work as a member of a multi-disciplined

development team.

- Excellent communications skills both with written word and speech in English, a second language will be considered an asset.
- Experience working with C-based software in a real-time operating system (RTOS) such as VxWorks or QNX.
- Understanding of Networks, Switches, VLANs, Firewalls, etc.
- Experience with packet sniffing tools such as Wireshark.
- Experience with maintaining and releasing of software and firmware in a production environment using CVS or other versioning tools.
- Experience with all phases of the FPGA development process (coding, simulation, implementation, verification, debug).
- Knowledge of digital logic design principles and FPGA and SOC architectures.
- Experience using VHDL.
- Experience using the Vivado FPGA development tools from Xilinx.
- Experience with embedded SOC.
- Must be willing to relocate to Winnipeg, Manitoba.

Assets

- Experience with Xilinx Multi-gigabit transceivers.
- Experience with connectivity protocols such as Ethernet, TCP/IP, I2C/SPI, UART and others.
- Experience with time synchronization protocols such as IEEE 1588 PTP, NTP, and IRIG-B.
- Experience with Power System protocols such as (IEC 61850, DNP, 104, PMU, Modbus).