

Job Title: Embedded Software Engineer	Location: Hunmanby / Mansfield
Department: Engineering	Contract: Permanent
Reports To: Team Manager	Direct Reports: Up to 4 Software Engineers

1.0 Job Summary & Role

Join the engineering team at Deep Sea Electronics Ltd, where you will design and deliver high-quality embedded software for industrial Control and Automation applications. The role focuses on real-time control, industrial communications and functional safety (IEC 61508/IEC 62061), creating robust solutions for environments such as power generation, manufacturing, utilities and process industries. You will contribute across the product lifecycle — from requirements and architecture through implementation, verification, certification and field support.

2.0 Key Responsibilities & Main Duties

- Design and implement C/C++ software for embedded devices (bare-metal and RTOS) used in industrial control systems
- Develop real-time control algorithms (e.g., PID, state-based control) for sensors, actuators, and power systems
- Produce work break down structures and define work packages for execution in JIRA tasks and integration into high level plans
- Integrate with industrial control equipment and software, including PLCs, HMIs and SCADA systems
- Implement and validate industrial communication protocols: Modbus (RTU/TCP), CAN/CANopen/J1939, Ethernet/IP, PROFINET, OPC UA, RS-232/RS-485
- Apply functional safety practices in line with IEC 61508/IEC 62061, including SIL determination, Safety Requirements Specifications (SRS), HARA/FTA/FMEA, and verification evidence
- Contribute to software quality by the use of coding standards (e.g., MISRA C/C++) and static analysis tools, performing code reviews and developing unit/integration tests
- Create test plans and perform functional product verification and validation activities
- Author and maintain engineering documentation: architecture, design descriptions, interface control documents, test plans, and safety lifecycle artefacts
- Collaborate closely with electronics, test & approvals, cybersecurity and product management to deliver cohesive solutions
- Support system integration, commissioning and troubleshooting at parent company and customer sites (UK and international travel required)
- Contribute to continuous improvement of processes, toolchains, CI/CD and development workflows (e.g., Git, Jira, code review)
- Mentor less-experienced engineers; share knowledge through design reviews, brown-bags and documentation



- Participate in sustaining activities for existing products, including defect resolution and targeted feature enhancements

3.0 Internal & External Relationships

- Engineering and Project Management – communicate estimates, risks, dependencies and progress
- Electronics Hardware – codesign of embedded systems, schematics/PCB bring up and HW/SW integration
- Test & Approvals – collaborate on verification strategy, regulatory and functional safety evidence
- Technical Support & Service – provide tier3 support for complex customer issues; contribute to knowledge base
- Commercial/Sales & Applications – support requirements capture, demos, pilot programs and customer feedback
- Key Customers, Product Management – gather requirements, support integration/commissioning and acceptance testing

4.0 Key Performance Indicators

- Quality: compliance with coding standards, static analysis, test coverage and defect escape rates
- Safety: completeness and traceability of safety lifecycle artefacts and adherence to approved processes
- Delivery: ability to scope, estimate and deliver to agreed timescales with transparent risk management
- Documentation: clarity, completeness and maintainability of technical documentation
- Collaboration: effective cross functional teamwork and knowledge sharing
- Customer impact: successful integrations/commissioning, reduced field issues and positive feedback

5.0 Essential/Desirable Factors

Knowledge	
<p>Essential:</p> <ul style="list-style-type: none"> Expert in C/C++ for microcontroller development Functional Safety: IEC 61508 (and/or IEC 62061); safety concepts (SIL, SFF, PFH), safety planning and verification Principles of Industrial Automation products: control theory basics (PID), sensors/actuators, transducers and signal conditioning Electrical principles 	<p>Desirable:</p> <ul style="list-style-type: none"> Other programming languages (C#, JavaScript, HTMS/CSS) Embedded Linux

JOB DESCRIPTION & PERSON SPECIFICATION



Skills & Attributes	
Essential: <ul style="list-style-type: none"> • Familiar with stage gated / agile development approaches • Comfortable collaborating closely with electronics engineers on embedded systems • Working to a high-quality standards • Excellent team player with problem-solving and trouble-shooting capabilities • Experience defining a task breakdown for a give piece of work and provide estimates • Ability to translate requirements into a technical product specification • Experience working in a high-pace environment • Enthusiastic and optimistic 	Desirable:
Experience	
Essential: <ul style="list-style-type: none"> • Development with Real Time Operating Systems • Development of unit tested C code, using Jenkins or similar • Source code build tools, bug tracker tools, source code repositories, etc 	Desirable: <ul style="list-style-type: none"> • Functional Safety Software Development • Cyber Security
Qualifications	
Essential: <ul style="list-style-type: none"> • BEng or above in Electrical and Electronic Engineering 	Desirable:

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