Senior Engineer 2 – Embedded Software Job Description

Role Purpose:

To provide technical expertise, capability, and input in order to contribute to the delivery of projects, acting as technical lead in medium / large scale projects, and projects of increasing complexity. Draws upon a broad range of technical know-how to provide carefully thought-through advice and expertise to a range of stakeholders across the organisation. The Senior Engineer 2 is viewed as an authority in their area of discipline, offering innovative solutions at business-unit level, contributing extensively to development and improvement activities.

Key Responsibilities:

- To maintain consistent and documented compliance with all relevant Safety, Health and Environmental (SHE), quality and best practice requirements.
- To identify new technical developments and trends, translate these into building blocks for opportunities within the business unit, initiating the creation of (new) technological innovations/applications.
- To utilise own expert knowledge to assist in translating business unit strategy into practice through the delivery of plans to achieve business unit objectives.
- To build, maintain and exploit a network of relevant external stakeholders, customers, partners, research organisations and authorities, to represent the business unit and self as a credible expert, identifying opportunity for future projects and developments.
- To actively contribute to a culture of continuous capability development through coaching, mentoring and/or developing colleagues across the business unit and organisation, providing insights into areas of specialism. This may include coaching and developing colleagues (both technically and behaviourally) to help them reach their potential and acting as a mentor to colleagues across the organisation, providing an expert-level perspective.
- To keep up to date with external developments in areas of specialism, and/or legislative and SHE related changes, ensuring application of new best practice and/or knowledge
- To work collaboratively with Business Development, Bid Proposal, and technical colleagues to contribute to proposal / project development and direct customer engagement. Seek out and engage in business development opportunities where appropriate.
- To formulate and present possible solutions, providing advice upon request or at own initiative, building an internal reputation as a reliable and credible authority.
- To actively engage in hazard studies / SRA studies and discussions, as appropriate to role level.
- To set up, plan and execute experimental work and analyse, interpret, and report the results of these, translating obtained findings and knowledge into know how or customer reports.
- To be responsible for providing clearly documented records of technical data, decisions, methodologies, calculations, and software use in an agreed format.
- To take ownership in agreeing weekly workplans with line manager, project manager(s) and other relevant stakeholders, and delivering plan to agreed schedule.

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Responsibilities specific to role:

- To be responsible for supporting work programmes with the development of firmware and software applications for embedded microcontrollers, microprocessors, personal computers, and mobile devices.
- To liaise with hardware development in the creation and agreement of block diagrams, IO tables and software user manuals.
- To adhere to defined Software Development Procedures and actively use version control, modular design, coding standards, and task management tools to ensure best working practices in the whole software development lifecycle.
- To participate in software project scoping, planning and technical reviews.
- Interpret client and product needs and requirements, producing software systems designs and functional specifications.

Direct reports: No direct reports

Person specification

Education / Qualifications:

Essential:	Desirable:
Educated to HNC or Foundation Degree level (or equivalent) in an Engineering discipline plus significant industrial experience at a senior level. Or Educated to Degree level (or equivalent) in an Engineering discipline plus relevant industrial experience at a senior level. Or Educated to Master Degree level (or equivalent) in an Engineering discipline plus significant industrial experience. Or Educated to PhD level (or equivalent) in an Engineering discipline plus relevant industrial experience.	Chartered status with a relevant professional institution (e.g., IET).

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Competencies and behaviours	
Leadership (Influencing)	**Decision Making (Influencing)**
• Promotes commitment to our PRIDE values, strategy, vision, and direction. • Motivates, inspires, and build resilience in others by making the vision shareable by everyone, and ensuring that teams are purposefully empowered in order to work efficiently. • Rewards and celebrates success with colleagues and teams. • Future proofs work practices. • Trusts others' judgment and demonstrates radical thinking, including a willingness to try new things, even at the risk of failure.	• Confidently draws reliable conclusions from diverse and sometimes incomplete data. • Proactively sources and refers to how others have tackled similar problems previously. • Considers risks, and consequences, and takes accountability for, the impact the decision has on the business including costs/ benefits. • Thinks ahead, ensuring that the potential of teams and projects are unlocked and making future focused decisions.
Communication (Influencing)	**Developing self and others (Enabling)**
• Comfortably employs a wide range of communication styles and approaches to suit different situations and audiences (external and internal stakeholders) in diverse situations. • Builds effective two-way communication channels within the business area and across departments whilst maintaining credibility and securing commitment.	• Supports others in their development. • Is personally committed to, and actively seeks, opportunities to improve continuously. • Is comfortable learning from the experiences of others and recognises the differing strengths of team members. • Provides honest helpful feedback to others on their performance. • Insightful about self, strengths, and limitations, and how to maximise contribution.
Collaboration (Guiding)	**Delivery (Influencing)**
• Displays a collaborative style in day-to-day working whilst motivating others to achieve optimal performance and results. • Fosters an inclusive atmosphere throughout their teams where ideas and creativity can thrive, and people feel empowered to be their whole selves. • Develops relationships which facilitate the resolution of complex tasks and can apply different techniques to effectively mitigate any conflict. • Can negotiate skilfully in tough situations with all stakeholders.	• Prepares and maintains schedules for activities and events for projects. • Delegates responsibilities for tasks and decisions to the appropriate staff; sets SMART objectives and monitors progress, fostering an atmosphere of purposeful empowerment in order to allow teams to function efficiently. • Researches capabilities and constraints, in advance of a project, which could affect its approach and outcomes. • Holds people accountable for achieving results.

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Knowledge and Experience:

Essential:	Desirable:
Will possess significant technical expertise in embedded software development as well as compelling evidence of complex technical problem solving. Will exhibit professional mastery of principles and practices in software development gained in academic or industrial environments. Can demonstrate evidence of building knowledge sharing and network building practice across teams and organisations to achieve desired results. Actively demonstrates in-depth technical and theoretical knowledge in embedded systems development and can participate at high level in more than one area. Is viewed as an authority in at least one area by peers and managers. Is able to take responsibility for diverse or complex technical activities where it is necessary to use own initiative and judgement, implementing innovative solutions in complex situations. Experience of full software development lifecycle including prototype, design, implementation, debug, test, and documentation of embedded systems. Working knowledge of low power programming environments and tools required for embedded development such as Keil/IAR. Experience of both bare-metal and RTOS programming using C/C++.	Is an active member of a professional body (e.g., IET), engaging with peers beyond CPI. Experience of working with safety critical applications, ideally Medical Devices or SAMD Any knowledge of radio protocols and communication stacks would be advantageous. Experience of resource constrained operating systems such as FreeRTOS and Zephyr. Experience of app development for mobile or web-based platforms. Implementation of IoT / cloud programming solutions. Experience of electronics design, including schematic design and PCB layout. MATLAB simulation experience. High level programming in python / bash / scripting. Experience of FPGA and/or Embedded Linux development.

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Experience of design of systems using wireless communications (such as Wi-Fi, RFID, NFC, Bluetooth Low Energy, LoRaWAN) Experience of implementing low power and low-level communications systems (such as I2C, SPI, CAN, RS-485 etc).	