

Job Description	
<b>Department:</b> Sensors innovation and manufacturing	<b>Location:</b> Southampton area
<b>Post Title:</b> Software and Electronics Engineer	<b>Grade:</b> Dependent on applicant profile Guide salary £40-65k full time, pro-rata if part time, depending on experience with employer pension contributions, 8 public holidays + 25 days annual leave
<b>Post responsible to:</b> Head of Electronics and Software	<b>Posts responsible for (and grade):</b> None

Context or Background (optional):
<p>Clearwater Sensors Ltd. (<a href="http://www.clearwatersensors.com">www.clearwatersensors.com</a>), a startup founded in 2019, develops and manufactures environmental sensors including Lab on Chip based microfluidic analysers for water chemistry analysis: helping to achieve a more sustainable future for aquatic environments and industries. It licensed in IP from the University of Southampton and the National Oceanography Centre in 2020 and within 10 months had delivered first product to customers. We now sell products internationally with strong growth self-funded from sales, and have benefitted from two research / innovation grants and an EU Horizons Europe grant that expand our product offer and enable improvements.</p> <p>We seek a talented and adaptable professional software design engineer, preferably with at least some skill in electronics design, who is also able to develop and optimise embedded firmware (embedded C for Cortex M4), graphical user interfaces, and other software in a R&amp;D and rapid productization context. Examples of applications for the sensing technologies include measurements of nutrients or pH on autonomous underwater vehicles for scientific and carbon sequestration applications. You will be involved with developing the sensors and interfaces for such integrations. The candidate will get the best from the role if they are willing to work with electronic hardware, even if they have no prior experience in this.</p>
Job Purpose:
<p>To work as a team member in R&amp;D and product settings providing expert technical skills the following areas:</p> <ul style="list-style-type: none"> <li>• Embedded firmware development (Embedded C for ARM Cortex M4 preferred but not essential)</li> <li>• GUI design (C/Win32 for MS Windows) including for Sensor control and setup over USB</li> <li>• Architecture design and tool selection</li> </ul> <p>In addition, it would be extremely advantageous to work in the team providing proficiency or better still domain expertise in several of the following areas.</p> <ul style="list-style-type: none"> <li>• Analogue electronics design/simulation</li> <li>• Digital electronics design/simulation</li> <li>• Electronics test and measurement</li> <li>• PCB Layout including high precision analogue</li> <li>• Complex multidisciplinary systems test, fault finding and remedy</li> </ul> <p>To learn skills as above and adapt to new requirements as required.</p>
Expectations of the role:
<p>To take personal responsibility for the work assigned to them.                      To always look for new and novel solutions and aim to develop and optimise existing systems.                      To create documentation and provide training on hardware and software developed by the team.                      To keep a detailed logbook, write test reports, user manuals and work with users to develop specifications for software and hardware.                      To perform sound experiments / tests demonstrating the suitability of the developed solution.</p>

The post holder will be self-motivated and able to tackle complex problems independently. They will be enthusiastic to learn new skills in a range of engineering and science disciplines and willing to make the extra effort to ensure they quickly become an expert.  
They will have excellent computer skills including Windows and Office.

**Key Accountabilities/Primary Responsibilities:**

**% Time**

1	Act as an expert in their areas of specialism taking responsibility for complex engineering problems	60
2	Work as part of a team by providing training, engineering, fieldwork, and administrative support	10
3	Maintain: a detailed reference library; documentation on standard operating procedures, protocols and methods; version controlled and well documented code libraries; libraries of common component / system drawings, design calculations, log book, testing/research and manufacturing details	10
4	Develop best practice and skills in the group and yourself.	10
5	Contribute to the development and maintenance of project plans	5
6	Assist with maintaining labs, equipment, supplies and infrastructure in the team.	5

**Expectations of all staff:**

- At all times comply with, and ensure that duties are carried out in accordance with, relevant Clearwater Sensors Ltd. business aims, contracts, service agreements, policies, procedures and guidance
- Promote and demonstrate a personal commitment to equality, diversity and inclusion and working with respect.
- Attend relevant training, maximise learning opportunities and maintain professional development by completing continuous professional development appropriate to the role.
- Maintain a safe working environment by attending Health and Safety training as required and follow local codes of safe working practices and actively contribute to embedding a safety culture across Clearwater Sensors Ltd..
- Adopt and promote awareness of Clearwater Sensors Ltd.'s ethical and environmental aims and other initiatives.
- Carry out other duties within the scope, spirit and general purpose of the post and adopt a flexible approach to work.
  - As duties and responsibilities change this job description will be reviewed and revised in consultation with the post holder.
  - Undertake such other duties within the scope of the post as may be reasonably requested by your Manager.

<b>Personal Specification</b>				
		<u>Essential criteria to be measured for shortlisting purposes</u>	<u>Essential criteria to be measured for interview purposes</u>	<u>Desirable criteria to be measured where candidates may otherwise score equally on essential criteria.</u>
<b>Qualifications and Knowledge:</b>				
1	Degree in relevant discipline (Masters, or Bachelors at 2.1 or above) including Software Engineering, Electronic Engineering, Maths, Physics or related numerate and technical subject.	✓		
<b>Experience related to position:</b>				
1	Experience in software engineering for example:	✓	✓	

Job Description and Person Specification

	<ul style="list-style-type: none"> <li>Software engineering including architecture design and tool selection</li> <li>Embedded firmware engineering</li> <li>Embedded C for ARM Cortex M4</li> <li>GUI design and coding (C for MS Windows)</li> </ul>			
2	<p>Willing to work with electronics engineering including:</p> <ul style="list-style-type: none"> <li>Analogue electronics design/simulation</li> <li>Digital electronics design/simulation</li> <li>Electronics test and measurement</li> <li>PCB Layout including high speed digital and high precision analogue</li> </ul>	✓	✓	
3	Knowledge of mechanical engineering and Complex multidisciplinary systems test, fault finding and remedy			✓
4	Experience of the deployment of autonomous underwater instruments or microfluidic systems for environmental applications			✓
5	Excellent computer skills with Windows and Office	✓	✓	
6	<p>Experience of the following or similar software:</p> <ul style="list-style-type: none"> <li>- Cadence OrCAD</li> <li>- PSPICE</li> <li>- IAR Compiler for ARM Cortex M4</li> <li>- Visual Studio for Windows application development</li> <li>- MATLAB</li> <li>- Autodesk Fusion 360</li> </ul>			✓ ✓ ✓ ✓ ✓ ✓ ✓
<b>Skills:</b>				
1	Proven ability to solve research and engineering problems.	✓	✓	
2	Able to take initiative and to respond to opportunities		✓	
3	Ability to manage and deliver on multiple projects and work packages running in parallel	✓	✓	
4	Ability to plan own work and the work of others: both in projects you lead, and by commissioning work for completion by other teams and organisations		✓	
<b>Behaviours:</b>				

Job Description and Person Specification

1	Ability to get the best out of colleagues and co-workers as both a leader of a project and member of a team.		✓	
2	Ability to manage own time effectively		✓	
3	Ability to provide training and constructive feedback to colleagues		✓	
<b>Other requirements:</b>				
1	Willingness to work off-site and outside of normal hours from time to time as required			✓
2	Willingness to work at sea for short periods, very occasionally, this will require mandatory training in Personal Survival Techniques and the ability to pass an ENG1 medical examination			✓
3	Ability to meet the requirements of UK 'right to work' legislation <sup>1</sup>	✓	✓	