|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Career Family:** | Engineering | | **Reports to:** | | http://intranet.ccfe.ac.uk/communications/logos/Authority_BLK_AW.pngSoftware Engineering Group Leader | |
| **Role Title:** | Senior Research Software Engineer | | **No. of employees/ASWs FRM for: (direct line management)** | | 2-3 | |
| **Level:** | 5 | | **Total No. of staff in resource management chain** | | 0 | |
| **Overall Purpose:** | | | | | | |
| Provide Research Software Engineering (RSE) expertise for UKAEA scientists and engineers by collaborating on projects and providing help, advice, training and infrastructure. Work with the group leader to establish and develop a central RSE service with the right skills, approaches and capacity to meet the changing needs of the organisation. Line manage other members of the RSE projects team, providing leadership and managing the portfolio of projects and activities. | | | | | | |
| **Accountabilities:** | | | | | | |
| * Deliver development projects for new or existing research software over timescales of weeks to months * Diagnose issues and design solutions considering full technical and human context * Build relationships with Science and Engineering groups to understand their software and computing needs and define future RSE projects and services * Manage projects and other activities to ensure the aims are achieved with appropriate quality standards and timescales. * Provide software development and research computing advice and support to scientists and engineers * Promote improvements in software development practices and quality standards across the organisation through training, guidance and community building, leading on initiatives in this area * Represent the UKAEA Research Software Projects team in relevant national/international research and RSE communities to learn from others, build collaborations and attract great colleagues. * Manage the portfolio of projects and activities for the RSE projects team including relationships with client groups, generating new opportunities and capacity planning. * Provide leadership and line management for other members of the RSE projects team, ensuring they have the right objectives, capabilities, support and opportunities and that appropriate team processes are in place. | | | | | | |
| **Budget Responsibility:** | | | | | | |
| Not applicable | | | | | | |
| **Specific Qualifications/Experience:** | | | | | | |
| Essential:   * Degree in a scientific or technical subject + PhD or equivalent experience working in a research environment * Demonstrable experience of developing clear, well-designed software in at least two programming languages (ideally Python and a compiled language) * Experience of applying good development practices (eg collaborative development, version control, automated testing, documentation) and ability to adapt them to a research group context * Broad knowledge of common scientific libraries, frameworks and packages * Familiarity with Linux development/hosting environments + ways to enable cross-platform use * Experience of managing all the lifecycle activities of a software project * Ability to communicate effectively, collaborate and influence people with various roles and backgrounds * Appetite to learn new skills, keep abreast of developments and share this knowledge with others * Experience of supervising or mentoring others and motivation to further develop these people management skills   Desirable – some of the following:   * Familiarity with any of the research or technology disciplines related to UKAEA’s activities * Knowledge of relevant data analysis, modelling and simulation and visualisation methods and tools * Familiarity with any of the commonly-used languages in our research groups: Python, C++, Fortran, IDL, Matlab * Familiarity with Git, Gitlab, Github, Continuous Integration, Docker, Zabbix * Knowledge of scientific computing platforms including cloud and HPC, alternative architectures * Experience of delivering training and/or community building * Involvement in the wider Research Software Engineering community | | | | | | |
| **Other Duties:** | | | | | | |
|  | | | | | | |
| **Technical/ Professional** | 60% | **Project Management** | 20% | **People Management** | | 20% |
| **Generic descriptors for all roles in this job family and level** (This is standard information, please do not amend) | | | | | | |
| The first two descriptors relate to an overview of the role for the level within this job family | | | | | | |
| ***Generic Snapshot*** | *Job holders at this level plan, coordinate & perform engineering, design, testing and/or analysis work for a complete project of moderate scope or for significant packages of work within a major & diverse project*  *Job holders will be recognised as an internal expert in a specific field & will provide technical advice & guidance*  *May act as lead person, providing technical leadership & engineering solutions*  *May assign, coordinate & review the work of other engineers/apprentices* | | | | | |
| ***Typical Representative Duties*** | *Responsible for managing assigned projects & work packages in order to deliver required results within specification, time & cost parameters*  *Check/signing off work completed by others in their area of specialism to ensure quality & consistency*  *Coach & supervise more junior colleagues & provide advice to other engineering colleagues in their field of expertise in order to develop overall capability*  *Within a specific area, set & monitor standards to establish & maintain best practice & quality*  *Effective management of risk and safety requirements*  *Identify opportunities for improvements & propose solutions in order to contribute to continuous improvement within UKAEA*  *Undertake or contribute to design studies on behalf of external customers*  *Communicate with a range of UKAEA colleagues to ensure a shared understanding of technical issues, work requirements & progress* | | | | | |
| The generic descriptors below relate to specific skills and attributes of the role for the level within this job family | | | | | | |
| ***Decision Making*** | *Negotiates & makes decisions regarding elements of projects*  *Makes decisions regarding how to resolve issues*  *Selects tools & methodologies for projects*  *Approves decisions & actions within the remit of policies & procedures* | | | | | |
| ***Analytical Skills*** | *Seek opportunities for the application of specialist skills & knowledge*  *Make final recommendations for the development of new engineering methods/techniques*  *Within established standards & precedents, the jobholder must identify, define & analyse alternative courses of action using analytical, evaluative and/or constructive thinking* | | | | | |
| ***Project Role*** | *Collaborates with others to define the project scope*  *Ensures projects are completed on time & within budget & all deliverable deadlines are met*  *Competent in project management. May collaborate externally on projects*  *May be working on cross-discipline projects Takes projects from innovation through to implementation*  *.* | | | | | |
| ***Budget Management*** | *Negotiates budget requirements* | | | | | |
| ***Communication & Influencing*** | *Requires the skills & knowledge to understand, influence, drive, & negotiate with internal & external customers, suppliers & colleagues*  *Requires the ability to explain the implications of work & decisions*  *Develops & empowers others* | | | | | |
| ***External Links*** | *Works with both internal colleagues & external partners. Forms & maintains links with external professional networks, universities, suppliers & collaborators as relevant within the scope of the role*  *Publishes papers/reports* | | | | | |
| ***People Management*** | *May manage a section to ensure appropriate completion of work & development covering the full range of people responsibilities*  *Identify & propose recruitment and learning solutions* | | | | | |
| **Knowledge, Skills and Experience** | | | | | | |
| ***Typical Technical Expertise, Experience & Skills*** | *Demonstrates several years’ experience towards chartered status*  *Either has or working towards a Master’s degree for Chartered Status*  *May be externally recognized in a narrow field* | | | | | |
| ***UKAEA Organisation Knowledge*** | *Understands how to influence project shaping & delivery* | | | | | |
| **Behavioural Competencies  These are the typical competencies required at this level but may be tailored to reflect specific job types. Refer to the full competency matrix for examples of behaviours at each level.** | | | | | | |
| ***Taking Accountability*** | *Accepts full responsibility for self and contribution to the organisation; committed to the delivery of work; truthful and honest; shows strong commitment to organisational success; strong personal drive for results; overcomes difficulties and doesn’t give up* | | | | | |
| ***Level: Progressive*** | *Acts on values even in difficult situations and takes personal responsibility for outcomes. Overcomes obstacles, putting in the extra effort.* | | | | | |
| ***Flexibility*** | *The ability to plan for, adapt to and work with a variety of situations, individuals and groups; understanding the need to change approach in order to meet individual, team and organisational objectives; having a positive attitude to change; ability to cope with ambiguity.* | | | | | |
| ***Level: Progressive*** | *Adapts tactics to meet objectives. Helps shape new ways of doing things and contributes positively to the change process.* | | | | | |
| ***Communication & Influencing*** | *The ability to communicate effectively and influence people at all levels, both orally and in writing; implies an intention to persuade, convince, influence or impress others in order to gain their support; listens to others concerns and conveys information clearly and proactively.* | | | | | |
| ***Level: Progressive*** | *Calculates impact of actions or words. Helps to develop an environment in which people communicate honestly and openly. Adapts techniques/styles to consider the differing needs of others* | | | | | |
| ***Teamwork & Cooperation*** | *Uses interpersonal skills to work co-operatively with colleagues, internal and external partners; works pro-actively across cultures and organisational boundaries; shares information and ideas; encourages diversity of thinking.* | | | | | |
| ***Level: Progressive*** | *Supports colleagues and ensures that their views are heard. Speaks positively of others.* | | | | | |
| ***Self-Development*** | *Openness to feedback, using feedback effectively; willing to learn from experience and aware of impact on others; pursues learning opportunities; and modifies behaviour accordingly; shows commitment to learning and development* | | | | | |
| ***Level: Advanced*** | *Expands and uses professional knowledge - helps to create a culture of learning and development.* | | | | | |
| ***Innovation & Curiosity*** | *Spots opportunities; simplifies methods; generates creative solutions to work problems; finds new ways to deal with organisational challenges and issues; implements new ideas or approaches; focuses on continuous improvement; solves problems through creative thinking and identifies patterns or connections between situations.* | | | | | |
| ***Level: Progressive*** | *Tries out new approaches whilst managing risks sensibly* | | | | | |
| ***Systematic Thinking & Planning*** | *A methodical and analytical approach to problem solving, planning and decision making; breaks down problems systematically in order to fully understand the implications; sets priorities on a rational basis* | | | | | |
| ***Level: Progressive*** | *Sees multiple relationships. Anticipates obstacles and thinks ahead about next steps, recognising the wider implications.* | | | | | |
| ***Commercial Awareness*** | *The ability to use commercial information in buying and selling to support decision making; demonstrates a strong financial awareness and focuses efforts on value added activities; appropriately manages client, partner, collaborators and third party expectations; appropriately withholds information/intellectual property that has commercial value: communicates appropriately with third parties involved in commercial activity with the Authority* | | | | | |
| ***Level: Progressive*** | *Manages client, third party and partner expectations and ensures that underlying needs are met. Considers the external environment in order to focus efforts to deliver long term results.* | | | | | |
| ***Behavioural Safety Competency*** | *The ability to demonstrate safe working in particular an awareness of risk and how these are managed to prevent or minimise injury or loss, taking action where risks are not properly managed.* | | | | | |
| ***Level: Progressive*** | *Understands what is meant by hazard and risk and how this applies to the workplace and considers working safely as an integral part of the job. Is able to undertake and complete risk assessments.* | | | | | |
| **Management and Leadership Competencies** | | | | | | |
| ***Setting Direction*** | *Supports the delivery The Authority's organisational objectives ,vision, mission & strategies; translates strategies into realistic and workable solutions; ensures that decisions are aligned to the organisational strategy* | | | | | |
| ***Level: Managers*** | *Ensures that departmental, team and individual objectives are aligned to the organisation’s broader strategies and long-term direction* | | | | | |
| ***Leading & Developing Others*** | *Leads, inspires and motivates individuals and teams; provides a clear vision, sense of purpose and direction in a way that people understand and buy into; ensures that others understand how to align their efforts to the Authority's objectives; is approachable and supportive; tackles poor performance and encourages people to reach their full potential.* | | | | | |
| ***Level: Managers*** | *Inspires others to commit to the organisations strategies and objectives. Proactively coaches and develops others.* | | | | | |
| ***Management Behavioural Safety Competency*** | *Visibly applying the Authority's Safety, Health and Environment policy, taking responsibility for the management of personnel ensuring their safety in the workplace, ensuring any potential environmental impacts from the Authority's activities associated with their work are minimised in accordance with the environmental policy and procedure.* | | | | | |
| ***Level: Managers*** | *Actively gives feedback on safety and environment policy and procedure to improve performance. Engages with workforce on management of safety and monitors safety performance. Inspires confidence in their team with respect to efficient safe working.* | | | | | |
| *The post holder may be required to undertake any other duties that are reasonable and commensurate with this role that may not be specifically referred to in this document.* | | | | | | |
| *Line managers are responsible for deciding upon the content of the job description, but where possible and relevant will take into account the views of the post holder.* | | | | | | |