# Position Details

## Research Projects- CSOF5

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| The following information is for applicants | |
| Advertised Job Title | Research Software Engineer – [Australian SKA Pathfinder](https://pawsey.org.au/projects/australian-square-kilometre-array-pathfinder-askap/) (ASKAP) |
| Job Reference | 80110 |
| Tenure | Indefinite  Full-time or part-time – minimum 60 hours per fortnight |
| Salary Range | AU$100k - AU$111k pa (pro-rata for part-time) + up to 15.4% superannuation |
| Location(s) | Kensington (Perth) Western Australia or Marsfield (Sydney) New South Wales |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian Citizens and Permanent Residents, (currently residing in Australia) * New Zealand Citizens (currently residing in Australia) |
| Position reports to the | Team Leader, Science Data Processing and Archives |
| Client Focus – Internal | 100% |
| Client Focus – External | 0% |
| Number of Direct Reports | 0 |
| Enquire about this job | Eric Bastholm via email [Eric.Bastholm@csiro.au](mailto:Eric.Bastholm@csiro.au) or telephone 08 6436 8505 |
| How to apply | Apply online at <https://jobs.csiro.au/>  Internal applicants please apply on **Jobs Central** via ‘People Hub’  If you experience difficulties when applying, please email [careers.online@csiro.au](mailto:careers.online@csiro.au) or call 1300 984 220. |

**Acknowledgement of Country**

### CSIRO acknowledges the Traditional Owners of the land, sea and waters, in the areas where we live and work across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our [vision towards reconciliation](https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan).

### Role Overview

Research Software Engineers in CSIRO conduct innovative software development within a research environment, leading to scientific achievements that are aligned with CSIRO’s strategies. The *Research Software Engineer – ASKAP* will participate in the development of software components that coordinate and perform efficient flow of radio astronomy data within a High-Performance Computing (HPC) environment.

ASKAP, the Australian Square Kilometre Array (SKA) Pathfinder, is CSIRO’s new-technology radio telescope in the remote Murchison region of Western Australia. A unique feature of ASKAP is that a supercomputer forms an integral part of the telescope. ASKAP produces data at an unprecedented rate (3GB/s), that is sent to the Pawsey High Performance Computing (HPC) centre in Perth in real time. The computing resources of Pawsey are critical to ingesting the data, forming the image cubes and other data products to keep pace with observing, and to archiving and curation of the user-ready data products. The need for ASKAP to produce science ready data products, combined with the need to process extremely large volumes of data very quickly in a supercomputing environment, creates a challenging software ecosystem.

### Duties and Key Result Areas:

* Work together with project stakeholders, including ASKAP Scientists, Software Engineers, and Pawsey Technical staff to determine their needs and priorities.
* Assist in the design, implementation, testing and maintenance of software components using originality, creativity and innovation.
* Triage issues appropriately.
* Participate in operational support of ASKAP by contributing to fault analysis of software components.
* Share your knowledge and experience, create software solutions, and nurture innovation by becoming a valued and trusted team member.
* Create software solutions by exploring new ideas and approaches and networking with science and engineering colleagues.
* Communicate openly, effectively and respectfully with all staff, clients and suppliers, and form quality interpersonal relationships that reflect CSIRO’s values and reputation.
* Be part of a multi-disciplinary, regionally dispersed research team that supports CSIRO’s scientific objectives.
* Follow the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Zero Harm goals.
* Other related tasks as requested.

## **Selection Criteria**

#### Essential

*Under CSIRO policy only those who meet all essential criteria can be appointed.*

1. A relevant Bachelor’s or Master’s degree, or equivalent relevant work experience in Computer Science and Programming.
2. Extensive experience (approximately 3-5 years minimum) developing **distributed** software solutions.
3. Demonstrated experience with Python and Unix/Linux.
4. Demonstrated experience in high-level software design and documentation.
5. Proven ability to identify and manage complex problems, and adapt quickly to changing circumstances.
6. Strong interpersonal and communication skills, including a demonstrated ability to liaise effectively with both technical and non-technical stakeholders.

## **Desirable:**

1. Formal software modelling and design techniques (e.g. UML, ERM, micro-services, functional programming, design patterns, abstract interfaces, etc)
2. Experience with:

* Bash scripting
* System metrics and time series data management and visualisation
* Cloud
* High performance computing (HPC) systems and supporting services
* Messaging and RPC middleware products and concepts
* SQL DB
* Agile software development methodologies and practices
* Continuous Integration and automated testing
* Git and Git workflows

1. JIRA and Confluence
2. Experience in astronomy, astronomical software for data processing or control systems and their interfaces

## **Required Competencies:**

* **Teamwork and Collaboration:** Cooperates with others to achieve organisational objectives and may share team resources in order to do this. Collaborates with other teams as well as industry colleagues.
* **Influence and Communication:** Uses knowledge of other party's priorities and adapts presentations or discussions to appeal to the interests and level of the audience. Anticipates and prepares for others reactions.
* **Resource Management/Leadership:** Sets up and maintains effective and efficient work teams and manages performance and resources, to achieve objectives. Chooses appropriate management strategies and communication styles to maintain high levels of motivation and productivity. Gives feedback for development purposes and provides support and direction for improvement.
* **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
* **Independence:** Plans, sets and works to meet challenging standards and goals for self and/or others. Recognises where endeavours will make the most impact or difference, decides on desired outcome and sets realistic goals to reach this target.
* **Adaptability:**Copes with ambiguity or situations that lack clarity. Adapts readily to changing circumstances and new responsibilities (which may include activities outside own preferences) in the interests of achieving team objectives. Recognises the need for and undertakes personal development as a result of changes.

Special Requirements

The successful candidate will be asked to obtain and provide evidence of a National Police Clearance or equivalent. Please note that individuals with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.

## **About CSIRO:**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and [CSIRO Space and Astronomy](https://www.csiro.au/en/Research/Astronomy).

CSIRO is a values-based organisation.  In your application and at interview you will need to demonstrate behaviours aligned to our values of:

* People First
* Further Together
* Making it Real
* Trusted