

## Position Details

### Technical Services – CSOF5

THE FOLLOWING INFORMATION IS FOR APPLICANTS	
<b>Advertised Job Title</b>	High Performance Computing (HPC) Engineer – SKA-Low Telescope
<b>Job Reference</b>	101243
<b>Tenure</b>	Indefinite Full-time, Part-time or Job-share
<b>Salary Range</b>	AU\$118,102 – AU\$127,808 per annum (pro-rata for part-time) plus up to 15.4% superannuation
<b>Location(s)</b>	Perth, Western Australia
<b>Relocation Assistance</b>	Will be provided to the successful candidate if required
<b>Applications are open to</b>	All Candidates (visa sponsorship may be provided to the successful candidate if required)
<b>Client Focus – Internal</b>	0%
<b>Client Focus – External</b>	100%
<b>Position reports to the</b>	This position will report to the SKA-Low Site Reliability Engineering Manager
<b>Number of Direct Reports</b>	0
<b>Enquire about this job</b>	To enquire about this job please reach out to the SKA-Low Site Reliability Engineering Manager, Louisa Quartermaine, via email at <a href="mailto:Louisa.Quartermaine@skao.int">Louisa.Quartermaine@skao.int</a>
<b>How to apply</b>	Apply online at <a href="https://jobs.csiro.au/">https://jobs.csiro.au/</a> Internal applicants please apply via <b>Jobs Central</b> If you experience difficulties when applying, please email <a href="mailto:careers.online@csiro.au">careers.online@csiro.au</a> or call 1300 984 220.

### Acknowledgement of Country

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the areas that we live and work on 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](#).

### The CSIRO Experience

As an employee of CSIRO, you will be eligible for the many benefits of working at Australia's National Science Agency. You can read more here:

1. [Life at CSIRO](#)
2. [Personal Development & Learning](#)

3. [Generous Leave & Conditions](#)4. [Work / Life Balance](#)**Background**

The SKA Observatory is a next-generation radio astronomy facility set to transform our understanding of the Universe and fundamental physics. By deploying cutting-edge technology, it will have a lasting impact on science and society. With investment totalling almost A\$3.5bn, the scale and reach of the facility will be unsurpassed.

The SKA Observatory is an Intergovernmental Organisation, supported on five continents and in both hemispheres under a unique partnership of sixteen nations. The SKA Observatory's facilities include its headquarters in the UK and radio-quiet sites in remote areas of South Africa and Australia, where the mid- and low-frequency telescopes are being built.

By constructing and operating these advanced telescopes, the SKA Observatory will become the world leader in radio astronomy, providing unparalleled research capabilities for decades.

In Australia, the SKA Observatory is collaborating with CSIRO, Australia's national science agency, to construct and operate the SKA-Low Telescope. SKA-Low teams are operating out of:

- Inyarrimanha Ilgari Bundara, the CSIRO Murchison Radio-astronomy Observatory on Wajarri Yamaji Country.
- Our Engineering Operations Centre on Nhanhangardi, Naaguja, Wilyny and Amangu Country in Geraldton.
- Our Science Operations Centre on Whadjuk Noongar Country in Perth.

Further Reading: [Explore CSIRO and the SKA-Low Telescope project](#)

**Role Overview**

The SKA-Low Computing and Software team delivers computing and technology solutions to meet the requirements of the SKA Project (read more [here](#)). The SKA-Low Telescope is driven by software and systems which include:

- An integrated control system that controls and monitors over 2 million process variables.
- Data processing systems that process the data produced by the SKA Low, which will require a high-performance computer.
- Science management systems to manage the interaction with scientists from around the world and ensure the huge amounts of data are made available to the appropriate people in a timely manner.
- Networks that move the data at rates exceeding Tbits/second across hundreds of km within the telescope and then shipping it to the scientific community using a world-wide 100 Gbit network.

The HPC Engineer will be part of the new Site Reliability Engineering team and will be responsible for the management and support of the Science Data Processor High Performance Computing (HPC) infrastructure including the platform, workload/resource managers and parallel filesystems.

They will work alongside key stakeholders within the SKA community such as Observatory Architects, Data Processing Engineers, Scientists, Project Managers, HPC Vendors and other domain

specialists to ensure the HPC infrastructure and services are fit for purpose, operationally secure, highly available, sustainable, and supportable providing the quality needed for a system that will have to last, and be continually developed, for decades. This role will report directly to the SKA-Low Site Reliability Engineering Manager.

Due to the locations involved in the SKA Project, in particular South Africa and the United Kingdom, this role will occasionally require some work outside of reasonable work hours. There will also be opportunity to occasionally travel internationally to SKAO Global Headquarters in the United Kingdom and the SKA-MID telescope in South Africa. We work hard to accommodate personal circumstances wherever possible.

CSIRO and the SKA Observatory value and respect differences, and we are committed to building an inclusive culture by creating an environment where you can balance a successful career with your commitments and interests outside of work. We believe that you will do your best at work if you have a work/life balance. We are open to discussing flexible working opportunities with this role being offered on a full-time, part-time or job share basis. Please raise your preference in your application.

### **Duties and Key Result Areas**

- Provide systems support for operation of Science Data Processor HPC infrastructure, including but not limited to, HPC platform management, HPC resource managers such as SLURM, fast parallel filesystems such as Lustre as well as underpinning support systems (Entra ID, the SKAO User management system).
- Assist with the maintenance on Science Data Processor supercomputing infrastructure, including liaising with key stakeholders regarding timing and scope of maintenance.
- Undertake problem solving at a high level for systems and workflows.
- Ensure effective response to system support issues via request tracking.
- Manage faults and maintenance interactions with vendors.
- Ensure effective documentation for systems support and operating procedures.
- Provide technical solutions to contribute to the procurement of additional infrastructure to enhance Pawsey supercomputing services.
- Contribute to knowledge sharing across the SKAO Software and Computing teams.
- Liaise with users and their communities/representatives regarding delivery of system services to meet their requirements.
- Promotion of technical innovations and experiences to national and international peers.
- Foster open, effective, and respectful communication with all stakeholders to support collaboration and enhance the reputations of CSIRO and SKAO.
- Adhere to the spirit and practice of CSIRO's Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
- Other duties as directed.

## Selection Criteria

### ***Essential***

*Under CSIRO policy only those who are able to demonstrate how they can meet the essential criteria may be appointed.*

1. A tertiary qualification in Science, Computing, Engineering or a related field, and/or significant demonstrated relevant industry experience.
2. Proven experience in managing High Performance Computing (HPC) platforms (on-prem, cloud or hybrid) and with workload managers/schedulers (e.g. Slurm, Kubernetes).
3. Demonstrated familiarity with parallel filesystems (e.g. Lustre).
4. High-level skills in the use of scripting languages such as Python or Bash, for automation, orchestration and source code management.
5. Experience in providing services to research domains, including engaging with researchers to determine requirements.

### ***Desirable***

1. Strong understanding of key supercomputing technologies, including accelerator architectures, HPC interconnects, hierarchical storage, resource scheduling/policies, use and provision of web services, portals, cloud technologies, scripting, workflow tools and scientific workflow management.
2. Understanding of job tuning, monitoring tools and profiling.
3. Experience in providing services to research domains, including engaging with researchers to determine requirements.

## 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

Appointment to this role is subject to provision of a pre-employment background check and may be subject to other security/medical/character clearance requirements.

- The successful candidate will undertake a pre-employment background check. Please note that individuals with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
- If the successful candidate is not an Australian Citizen or Permanent Resident, they may be required to undergo additional security clearances, which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test).- <https://ielts.com.au/>

### Child Safety

CSIRO is committed to the safety and wellbeing of all children and young people involved in our activities and programs. View our [Child Safe Policy](#).

### CSIRO and SKAO Values

Visit [CSIRO Online](#) and [Space and Astronomy](#) and [SKAO online](#) and [SKAO Location](#) for more information. In your application and at interview you will need to demonstrate behaviours aligned to our values of:

CSIRO	SKA Observatory
<ul style="list-style-type: none"> <li>• People First</li> <li>• Further Together</li> <li>• Making it Real</li> <li>• Trusted</li> </ul>	<ul style="list-style-type: none"> <li>• Diversity and Inclusion</li> <li>• Excellence</li> <li>• Collaboration</li> <li>• Creativity and Innovation</li> <li>• Sustainability and Safety</li> </ul>