

Position Details

Research Projects – CSOF7

THE FOLLOWING INFORMATION IS FOR APPLICANTS

Advertised Job Title	Lead Telescope Operations Engineer - SKA-Low Telescope
Job Reference	96195
Tenure	Indefinite Full-Time, Part-Time or Job-Share
Salary Range	AU\$152,055 to AU\$168,238 per annum, plus 15.4% superannuation Salary Range is negotiable where necessary to meet market rates
Location(s)	Geraldton, Western Australia
Relocation Assistance	Will be provided to the successful candidate if required
Applications are open to	All Candidates
Client Focus – Internal	0%
Client Focus – External	100%
Position reports to the	This position will report to the SKA-Low Head of Engineering Operations
Number of Direct Reports	3
Enquire about this job	To enquire about this job please reach out to the SKA-Low Head of Engineering Operations, Angela Teale, on angela.teale@skao.int for more information.
How to apply	Apply online at https://jobs.csiro.au/ Internal applicants please apply via Jobs Central If you experience difficulties when applying, please email careers.online@csiro.au 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 (SKAO) is a next-generation radio astronomy facility that will revolutionise our understanding of the Universe and the laws of fundamental physics. Enabled by cutting-edge technology, it promises to have a major impact on society, in science and beyond. As an intergovernmental organisation, the SKAO brings together sixteen countries around the world.

The Observatory has an international footprint and consists of the SKAO Global Headquarters in the UK, the SKAO's two telescopes at radio-quiet sites in South Africa and Australia, and associated facilities to support the operations of the telescopes.

Constructing and operating these telescopes will position the SKAO as the leading research infrastructure for radio astronomy globally, providing science capabilities to the international astronomical community for decades to come.

Australia will host the SKAO's low frequency telescope (SKA-Low) in remote Western Australia on Wajarri Yamaji Country.

The Traditional Owners and native title holders, the Wajarri Yamaji, have gifted CSIRO with the traditional name Inyarrimanha Ilgari Bundara for the CSIRO Murchison Radio-astronomy Observatory, home to the SKA-Low telescope. The traditional name means 'sharing sky and stars' in the Wajarri language.

In Australia, SKAO is collaborating with CSIRO to operate and support the construction of the SKA-Low Telescope. SKA-Low teams will operate out of:

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

Further Reading: [Explore SKAO](#)

Role Overview

The Lead Telescope Operations Engineer will be an experienced radio astronomy engineer with deep expertise in Radio Frequency (RF) engineering to lead our team of operations engineers. During operations, the role will be a primary in-country expert on the engineering of the world's largest low-frequency radio telescope, and will lead a team of highly skilled engineering specialists to discover and resolve hardware, software and firmware issues and improve overall telescope performance. The Lead Telescope Operations Engineer's expertise will contribute to the construction, integration, commissioning, maintenance, and operation of SKA-Low.

The successful applicant will have a national/international reputation and a deep understanding of digital and analogue systems. They will have well-developed problem-solving abilities for identifying and resolving system faults and conducting root cause analyses. They will be a strong communicator, and able to collaborate well with the broader SKA-Low engineering operations team and other teams across the SKA Observatory. The Lead Telescope Operations Engineer's seniority will be recognised for the deep technical expertise you bring.

Working for the SKA-Low Head of Engineering Operations, this role will lead the technical operations engineering team to solve engineering issues and improve performance in the digital and analogue chain of the telescope.

This role will require a willingness and ability to occasionally travel interstate and from time to time internationally, noting that we work very hard to accommodate personal arrangements.

CSIRO and the SKA Observatory value and respect difference, 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

- Act as a system expert for the SKA-Low telescope, with a deep understanding of low frequency telescope engineering and functionality and the detail of system operations.
- Resolve major technical problems that have a significant impact upon telescope performance and require original concepts and approaches.
- Manage delivery of quality assurance, fault management, and engineering mitigation and improvement initiatives for SKA-Low, including frequent visits to site.
- Lead the team of operations engineering specialists, building an inclusive and high performing team and encouraging a high level of cooperation within and between teams.
- Work with and influence the global Observatory engineering operations team to assure telescope performance.
- Author publications on telescope operations and engineering.
- During operations, lead integration of Station hardware and software, testing, interpreting the results and leading resolution of issues.
- Plan and be responsible for the development of new testing scripts and procedures, producing formal outputs.
- Act as an engineering expert in contracting for station subsystems, ensuring technical and quality assurance standards.
- Responsibility for the telescope test program while in operations. Plan, schedule and manage sky time for testing, including observation, data processing, and verification.
- Provide telescope engineering expertise to the Integrated Product Team (IPT) during the construction, integration and commissioning phases for seamless transition of the telescope to operations.
- Ensure system safety in design and operation, and risk mitigation for the SKA-Low telescope.
- Adhere to the spirit and practice of both the SKA Observatory and CSIRO's values, Code of Conduct, health, safety and environment procedures and policies, diversity initiatives and zero harm goals.

Selection Criteria

CSIRO is an Equal Opportunity employer working hard to recruit world-class talent that represents the diversity across our society. As part of our commitment to equitable employment outcomes for under-represented groups, preference will be given to Aboriginal and Torres Strait Islander people who meet the role criteria.

Essential

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

- Relevant tertiary education in physics, electrical or electronic engineering.
- Substantial demonstrated experience in astronomy as a radio frequency engineer for an operating telescope, preferably at low frequency bands (e.g. 50 to 350 MHz), and a strong national or international reputation in your field of expertise.

- Expertise in the key domains of the SKA-Low telescope; analogue electronics, digital electronics, embedded control software, high-level control software, and control systems.
- Demonstrated leadership in a technical team setting, with a strong focus on promoting diversity and fostering an inclusive, high-performing culture that encourages new ideas and provides support for the development of emerging skills.
- Demonstrated experience in management and planning the on-site operation and engineering support of a radio telescope.
- Experience in planning and conducting preliminary failure mode and effect analyses (FMEAs), system hazard analyses (SHAs), Quantitative Risk Assessments (QRAs), Operating and Support Hazards Analyses (O&SHAs).
- A clear understanding of relevant standards for system design and operations.

Desirable

- Familiarity with Matlab, Simulink, or similar tools.
- Fluency in a software language such as Python.
- Experience with computerised maintenance management systems (CMMS) including availability monitoring, condition monitoring, configuration management, and asset management systems.
- Proven skills in nurturing professional growth, providing education, and inspiring motivation among early-career engineers.
- Holds a Chartered Professional Engineer status, or can demonstrate ability to obtain this.
- Experience in the construction phase of a telescope.

Required Competencies

- **Teamwork and Collaboration:** Creates and fosters an environment in which there is a high level of cooperation within and between teams. Facilitates positive team relationships to build interactions across Business Units and the organisation. (LC4)
- **Influence and Communication:** Identifies critical stakeholders and influences them via an influential third party, for example through an established network, to gain support for sometimes contentious, proposals / ideas. (LC4)
- **Resource Management/Leadership:** Provides leadership that fosters an environment that encourages new ideas and provides support for the development of emerging skills. Creates trust by displaying consistency and understanding through integrity and patience. Plans, seeks, allocates and monitors resources to achieve outcomes. (LC5)
- **Judgement and Problem Solving:** Anticipates and manages problems in ambiguous situations. Develops and selects an appropriate course of action and provides for contingencies. Evaluates, interprets and integrates complex bodies of information and draws logical conclusions, synthesises proposals and defends options with reasoned arguments. (LC5)
- **Independence:** Assesses the risk and opportunity of identified strategies, options and actions. Overcomes problems and setbacks in achieving goals. Invariably includes consideration of value-added future impact on bottom line when determining the optimal and efficient use of resources. (LC4)
- **Adaptability:** Is flexible in response to external change or when faced with external constraints. Identified and promotes the opportunities arising as a result of change. (LC5)

Special Requirements

- The successful candidate will be required to gain a National Police Clearance or equivalent. This will be conducted by CSIRO, Talent Services, through our provider HireRight. 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/](https://ielts.com.au/)).
- The successful candidate will be required to undertake a pre-employment medical examination prior to commencement.

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