

Position Details

Research Projects – CSOF6

THE FOLLOWING INFORMATION IS FOR APPLICANTS

Advertised Job Title	Controls Manager - SKA-Low Telescope
Job Reference	93167
Tenure	Indefinite Full-Time, Part-Time or Job-Share
Salary Range	AU\$121,455 to AU\$142,321 per annum, plus up to 15.4% superannuation
Location(s)	Kensington, 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 into the SKA-Low Head of Computing and Software
Number of Direct Reports	4
Enquire about this job	To enquire about this role, please reach out to the SKA-Low Head of Computing and Software, Juan Carlos Guzman, on jc.guzman@skao.int
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 a global 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 Computing and Software team delivers novel computing and technology solutions to meet the requirements of the SKA Project. The SKA Observatory is driven by software and the systems which include:

- An integrated control system that controls and monitors over 2 million process variables.
- Data processing systems that process the vast quantities of data produced by the SKA Low, which will require a high-performance supercomputer capable of more than 100 petaflops and will result in hundreds of Petabytes of data archived per year.
- 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 Gbps network.

The SKA-Low Controls Manager is responsible for building and leading the Controls Software team for the SKA-Low telescope in Australia. The team will deliver the deployment, testing, enhancements and support of the Monitoring and Control Software Systems based on the open source TANGO controls framework, with strong focus on the SKA-Low. It is expected that this role

will work closely with peers in the SKAO HQ and SKA-Mid, ensuring high-level alignment with common software development principles and frameworks, while retaining autonomy.

The construction of the SKA software and computing systems adheres to large scale agile principles, using an SKA tailored version of the Scaled Agile Framework (SAFe); this role will be a key stakeholder within this framework as the telescope evolves from construction to operations.

This is a leadership role with both technical and people leadership responsibilities. As such, this role participates in short and long-term system and capability planning, teams and organisational planning. This position reports directly to the SKA-Low Head of Computing and Software.

Due to the locations involved in the SKA Project, in particular South Africa and the United Kingdom, this role will require some work outside of normal hours. It will also require domestic travel to Inyarrimanha Ilgari Bundara, the CSIRO Murchison Radio-astronomy Observatory on Wajarri Yamaji Country, to our facilities in Geraldton, and occasionally internationally, specifically to the United Kingdom and South Africa.

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

- Build, lead and manage the SKA-Low Controls team responsible for deploying, enhancing and supporting the Monitoring and Control software systems for the SKA Telescopes, with strong focus on key components of the SKA-Low Telescope.
- Take part in the activities of the Observation Monitoring and Control Agile Release Train (OMC ART) Program Management as required by the SKA Project SAFe implementation and its evolution through construction and operations.
- Work with peers at SKAO HQ and SKA-Mid to develop and support the common control software for future implementation of a “follow-the-sun” model. Support the transition from construction to operations, developing change management, incident management and continuous quality control.
- Develop and nurture working relationships with other SKAO subsystems development teams that interact with the Monitoring and Control system in order to enable an integrated, operational SKA-Low telescope as part of the global SKA Observatory.
- Provide coaching and mentoring of the team to achieve high levels of performance, meet the SKAO operational objectives and promote a culture of ongoing capability development.
- Assist with budget, hiring, workforce and capability planning alongside the SKAO Controls Managers in the UK and South Africa.
- Communicate openly, effectively, and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of SKAO and CSIRO’s reputation.
- Adhere to the spirit and practice of both SKAO and CSIRO’s Values as well as the Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Zero Harm goals.
- Other duties as directed.

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, and/or women and/or people with a disability 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.

1. Bachelor's Degree in computer science or a similar relevant subject, or equivalent experience.
2. Previous experience leading and/or mentoring teams in Software, IT or a Technology related industry or organisation.
3. Highly proficient in Python and/or C++ programming languages, and in architecting and, designing large-scale distributed software systems such as microservices.
4. Demonstrated experience in development, deploying and maintenance of software for IoT, real-time and/or embedded control software systems.
5. Excellent communication and influencing skills with distributed, highly specialised project teams and stakeholders, across international and diverse cultural backgrounds.

Desirable

1. Experience in control software frameworks or SCADA systems, especially open source software frameworks such as TANGO and/or EPICS.
2. Experience in software development of large IoT systems.
3. Experience in DevOps tools, processes and culture.
4. Certification, and experience, in SAFe and/or Scrum.
5. Demonstrate interest in astronomy and understanding of the challenges of controlling telescopes similar to SKA.

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:** 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.
- **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:** 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.

- **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.
- **Adaptability:** Demonstrates flexibility in thinking and adapts to and manages the increasing rate of organisational change by adjusting strategies, goals and priorities.

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/>).

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