Position Details

Research Projects – CSOF5

THE FOLLOWING INFORMATION IS FOR APPLICANTS	
Advertised Job Title	EMS Software Engineer - SKA-Low Telescope
Job Reference	99225
Tenure	3 year specified term - Full-time, Part-time or Job-share
Salary Range	CSOF5 - AU$114,219 to AU$123,605 per annum, plus 15.4% superannuation
Location(s)	Perth or 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 Controls Manager
Number of Direct Reports	0
Enquire about this job	To enquire about this job please reach out to the SKA-Low Head of Computing and Software, Juan Carlos Guzman, on jc.guzman@csiro.au 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 SKAO 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 CSIRO and the SKA-Low Telescope Project

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 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 Gbit network.

The SKA-Low Engineering Management System (EMS) Software Engineer will contribute to the development, deployment and user support of the EMS as part of a Global Scaled Agile Framework (SAFe) Team. The EMS will integrate various Enterprise-level systems to streamline engineering operations of the telescopes and improve decision making. It will combine logistic

support analysis, configuration management, maintenance management, problem reporting, inance, geospatial information, sensor data, etc. This integration will provide a unified view of information across these platforms.

This role is based in Western Australia (Perth or Geraldton) and will work closely with team members located in the UK and South Africa, and it will be the main point of contact for users of the Engineering Operations teams located in Geraldton.

This role will require a willingness and ability to travel interstate and internationally as required, noting we work 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

- Work within the Scaled Agile team to design, develop and test features (front-end and/or back-end) related to the SKAO Engineering Management System (EMS), focused on the requirements from the SKA-Low team.

- Work in collaboration with the SKA-Low Station deployment and operations team to implement the EMS systems.

- Work with the SAFe System team to support and help agile development teams in adopting DevOps practices as defined.

- Support and relentlessly improve the integration and delivery of high quality software products.

- 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 relevant 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, women and 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.

- Bachelor degree or higher in Computer Science, Software Engineering or equivalent programming experience.

- Minimum of 3 years experience in Full Stack software development, preferably using Python-based frameworks such as Django, Flask.
- Proficient in Front-End development in Javascript and/or frameworks such as Angular or React.
- Knowledge and experience of SAFe Agile methodology and working in an Agile team.
- Comfortable working in a diverse team environment, easily collaborating online with teams located across the globe.

Desirable

- Experience with integration of third-party systems such as ERP, JIRA, etc., handling API management and troubleshoot integration-related issues
- Experienced in Database/Data Warehouse Design.
- Experience in using infrastructure containerisation tools (such as Docker) in a cloud environment (AWS)
- Experienced in DevOps focus on managing deployment pipelines, ensuring seamless CI/CD processes, and maintaining our development and production environments

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 team 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 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
- People First - Further Together - Making it Real - Trusted	- Diversity and Inclusion - Excellence - Collaboration - Creativity and Innovation - Sustainability and Safety