Position Details

Technical Services - CSOF3 & CSOF4

THE FOLLOWING INFORMATION IS FOR APPLICANTS	
Advertised Job Title	Electronics Technicians (Junior and Senior): Control/Radio Frequency - Space and Astronomy
Job Reference	101674
Tenure and work schedule	Indefinite, full-time or part-time (minimum 0.8 FTE)
Salary Range	CSOF3: AU$76,068 - AU$96813 per annum (pro-rata for part-time) plus 15.4% superannuation CSOF4: AU$100,103 - AU$113,251 per annum (pro-rata for part-time) plus 15.4% superannuation *Plus additional on-call allowances* ***NB**: This position is offered across two CSOF levels, the appointment level will be determined by the qualifications, skills and relevant experience of the successful candidate's ability to meet essential and desirable selection criterion.
Location(s)	Parkes, NSW (Wiradjuri Country) Work on the iconic "The Dish", our Murriyang telescope at the Parkes Observatory. Onsite role with flexible start and finishing times.
Relocation Assistance	Will be provided to the successful candidate if required
Applications are open to	Australian/New Zealand Citizens and Australian Permanent Residents
Position reports to the	Site Leader Parkes Observatory
Client Focus – Internal	90%
Client Focus – External	10%
Number of Direct Reports	0
Enquire about this job	Tim Ruckley via email: Tim.Ruckley@csiro.au
Support and workplace adjustments	We offer a range of reasonable supports and workplace adjustments. Please let us know via email at careers.online@csiro.au if we can help you to equitably participate in our recruitment process or the role itself.
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

Acknowledgement of Country

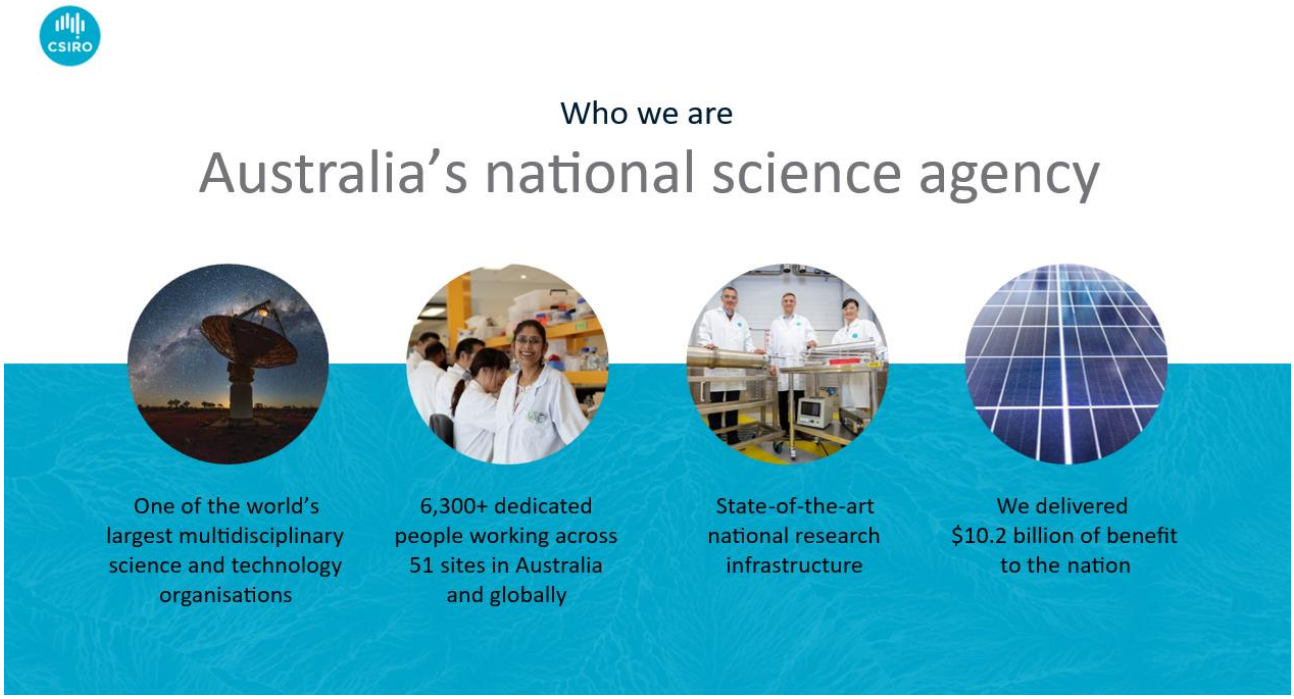
CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the areas that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our vision towards reconciliation.

Diversity, inclusion and belonging

At CSIRO, diversity, equity, and inclusion are central to our purpose and impact. We value diverse perspectives, which drive innovation and help us address complex challenges.

Inclusion is key to our culture, ensuring everyone feels supported and empowered to contribute their best work. We recognise the intersectionality of experiences, identities, and social factors that shape each individual. By embracing diversity, we learn from the uniqueness of our people, creating a culture where all belong. CSIRO is an equal opportunity employer, recruiting based on merit and reflecting the community we serve. We value diversity in all its forms, including age, nationality, ability, culture, gender, sexuality, faith, education, and thought.

About CSIRO



CSIRO (Commonwealth Scientific and Industrial Research Organisation) is Australia's national science agency and innovation catalyst and one of the world's largest and most successful publicly funded research and development organisations.

CSIRO is one of the largest and most multidisciplinary mission-driven research agencies in the world. With 51 locations and over 6,300 people across Australia and internationally, CSIRO solves the greatest challenges through innovative science and technology to deliver world-class economic, environmental, and social benefits for Australia in a global context.

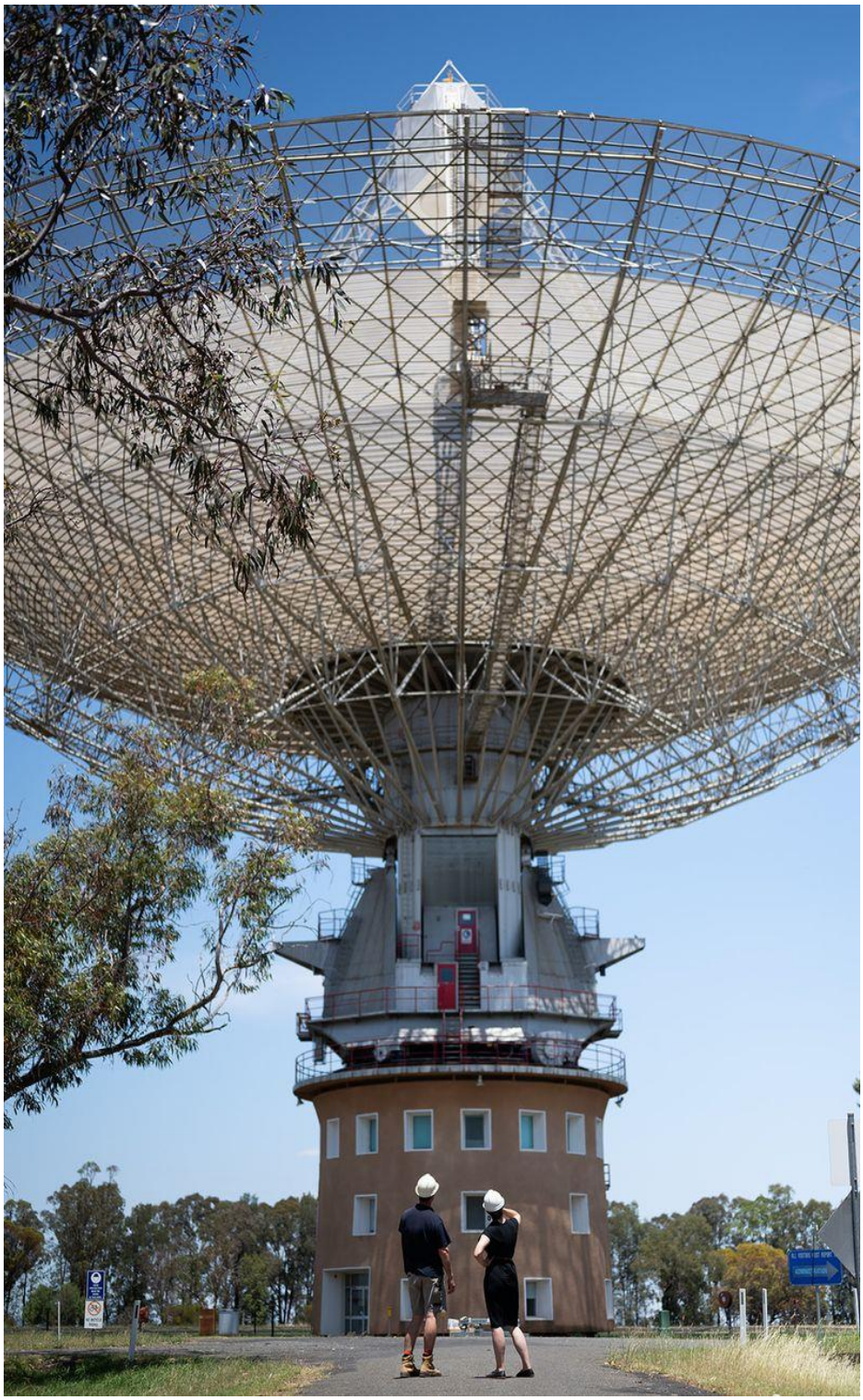
Many of CSIRO's innovations were once considered impossible. Fast WiFi, Aerogard insect repellent and the plastic Australian banknote, to name a few.

Until someone, just like you, joined us and took on the challenge.

We are committed to developing and supporting a diverse workforce in its broadest sense and know diverse teams are more effective and deliver more innovative outcomes for science.

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:

- Life at CSIRO
- Personal development and learning
- Generous leave conditions and benefits
- Work / life balance



About the Australia Telescope National Facility

CSIRO operates several radio astronomy observatories and data archives that are collectively known as the Australia Telescope National Facility (ATNF). Our technology development program is the cornerstone of the ATNF and is an internationally recognised source of innovative radio astronomy instrumentation, which leads to societal impact.

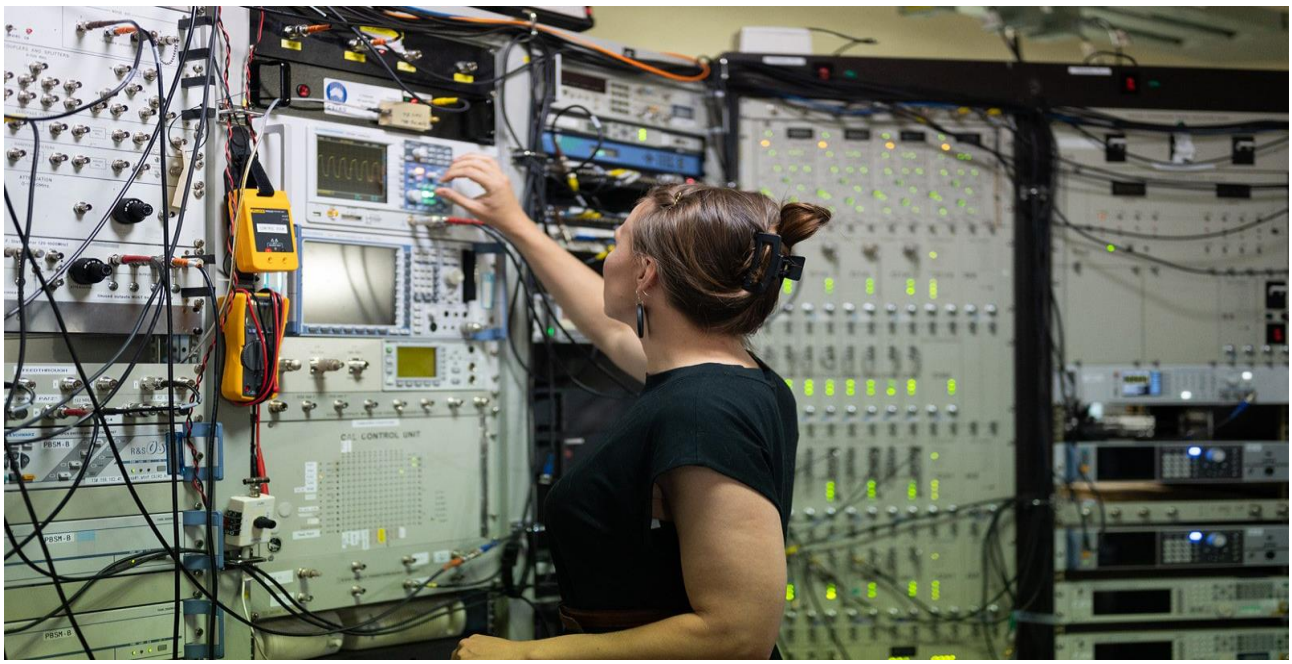
The ATNF includes:

- the ASKAP radio telescope with its wide field-of-view in a legislated radio quiet zone,
- the Australia Telescope Compact Array with its wide frequency coverage, quick response times and flexible configurations,
- Murriyang, our Parkes radio telescope, which is the largest single-dish radio telescope dedicated to science observations in the southern hemisphere,
- the Long Baseline Array (LBA) providing very long baseline interferometry across Australia,
- the Mopra radio telescope, which is used for single-dish observations, particularly at millimetre wavelengths and as part of the LBA
- astronomical data archives that currently provide 15PB of data, as well as various catalogues, databases and software packages used for obtaining and processing data from our facilities, and
- a comprehensive range of expertise, spanning from the intricacies of front-end receivers to deploying machine learning algorithms for analysing the vast data volumes contained within our archives.

Visit Australia Telescope National Facility - CSIRO for more information. For two semesters each year, the ATNF accepts Principal Investigator-driven proposals from the national and international community.

The ATNF has been involved with the international SKA project from its inception, has contributed to its design, and is delivering the beam-forming instrumentation and local infrastructure for the SKA-Low telescope in Australia. In Australia, CSIRO is partnering with the SKA Observatory to build and operate the SKA-Low telescope. The ATNF's locations, telescopes and engineering expertise are in an excellent position to support and extend the science goals of the SKA telescopes over the next decade.

The ATNF forms part of CSIRO's Space & Astronomy research unit, and together we aim to enable humanity to understand our Earth and Universe. This understanding, and our innovative science and technology, contributes to solving the greatest challenges, building future industry, and serving customers from across Australia and the world.



About Parkes Observatory

Murriyang, our 64-m Parkes radio telescope, is located 20 km outside Parkes in the central-west region of New South Wales, about 380 kilometres from Sydney. An icon of Australia, Murriyang is the largest single-dish telescope in the southern hemisphere dedicated to radio astronomy, and has an outstanding international reputation for exceptional performance and astronomical research. The site also hosts a 12-m radio telescope which serves as a science and engineering testbed, and a Visitors Centre that welcomes over 100,000 people per year as part of an important outreach role centred around Murriyang.

The telescope operates at wavelengths ranging from 70 cm to 1 cm. It is maintained as a state-of-the-art instrument and carries out world-class astronomical research, with pulsar and neutral hydrogen studies being predominant in recent years. Its large dish surface makes Murriyang very sensitive, and it is ideally suited to finding pulsars, rapidly spinning neutron stars the size of a small city. It is instrumental in finding over 2500 new galaxies in our local region.

The Parkes 64-m telescope's receiver fleet is currently undergoing a major upgrade, with an ultra-wide-band feed (UWL) covering 700 MHz to 4 GHz already installed and commissioned, a cryogenically-cooled Phased Array Feed (CryoPAF) under commissioning, and an additional ultra-wide-band feed covering 4 GHz to 26 GHz, with options up to 32 GHz, in execution.

While it is operated primarily for astronomy research, it continues its long history supporting space tracking activities for NASA, other space agencies, and recent deep space missions. Visit Murriyang, our Parkes radio telescope - CSIRO for more information.

Role Overview

The role of Technical Services staff in CSIRO is to provide support for scientific research in a diverse range of laboratory and field situations across a range of different research projects. This support consists of the application of accepted technical practices and the development of new practices. The work is usually carried out as a member of a centralised service.

We are seeking Senior and Junior Electronics Technicians with electronics and radio frequency system experience to join the support team for the Parkes Observatory Operations team. You will form part of a skilled, multi-disciplinary engineering team, that supporting the maintenance of low-noise radio astronomy and spacecraft receiver systems, together with associated digital electronic systems.

The antennas and receiving systems operate over the frequency range of 50 MHz to 26 GHz and includes cryogenically cooled receivers, radio frequency digital and analogue electronics, fibre optic systems as well as digital receivers, beamformers and correlators. The role will integrate, commission, and support these systems.

The electronic technicians need to provide technical, operational and maintenance support to a range of existing equipment and projects, including general electronics design and development, field installation, as well as fault-finding and repairs to electronic and electromechanical systems. The role is responsible for the maintenance of laboratory facilities on-site and supports the installation, commissioning, and maintenance of electronics systems at other Space & Astronomy observatories.

CSIRO S&A is committed to providing a safe and inclusive work culture and implementing initiatives to improve diversity and equity within our workplaces. This role is offered on a full-time or part-time basis.

Duties and key result areas at CSOF3

- Work within a small multi-disciplinary team, sharing your knowledge and skills with other staff, provide technical, operational and maintenance support in a range of technical disciplines to the highest levels of availability required for the National Facility.
- Fault find and repair electronic and electromechanical modules to the component level.
- Provide general analogue and digital electronics design and construction support.
- Maintain laboratory facilities and inventory.
- Support procurement of electronic equipment, components, and other laboratory items.
- Undertake and complete tasks under technical direction to meet experiment and/or project demands.
- Travel to other S&A observatories and other sites to assist with the installation, commissioning, and maintenance of electronic and electromechanical systems.
- Carry out regular safety inspections and effect prompt repairs as required and keep up to date with the latest relevant regulations.
- Assist in a range of site activities and interact and co-operate with other technical and non-technical staff to ensure the safe and efficient operation of the observatory systems.
- Liaise with the internal group responsible for buildings and other corporate infrastructure and support their contractors in fulfilling this role where necessary.
- Liaise with S&A staff from other observatories to help undertake collaborative projects as required.
- Communicate openly, effectively and respectfully with all staff, clients, contractors and suppliers in accordance with good business practice, collaboration and enhancing CSIRO's reputation.
- Adhere to CSIRO's Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.

- Other duties as directed.

Additional duties and key result areas for CSOF4 appointment

- Support in the development and maintenance of records for asset management, maintenance management and standard operating procedures.
- Oversee the activities of less experienced staff and provide on-the-job training as required.
- Undertake fault diagnoses and maintenance on radio frequency equipment.
- Undertake EMC and RFI testing, finding and mitigation to maintain a radio quiet environment required for radio astronomy.
- Maintain and program control systems and PLCs are desirable.

Selection Criteria at CSOF 3

Essential

1. A minimum of an advanced diploma (or equivalent training and experience) in electronics, emphasising analogue and digital techniques.
2. Demonstrated understanding of analogue, digital electronics.
3. Strong attention to detail, including demonstrated skills in technical problem-solving, specifically fault finding, repair and service of digital and analogue electronic equipment.
4. Excellent practical skills, including demonstrable soldering and surface mount experience; the assembly of printed circuit boards (PCBs), electronic modules and cable assemblies; and general workshop equipment such as drill presses and hand tools.
5. The ability to work effectively within, and positively contribute to, a small team of technical staff and to work with minimal supervision as required.
6. Demonstrated experience developing safety documentation, such as activity-based risk assessments, and a commitment to safe work practices, environmental sustainability and the principles of equity and diversity.
7. Due to the specific duties and/or conditions associated with this role, it is essential that the preferred applicant can climb steep stairs and ladders and work on structures at height of up to 60m and at times works in confined spaces (occasionally)

Desirable

1. Hold a current First Aid Certificate or be willing to obtain.
2. Hold an ACMA Open Cabling Licence, or ability to obtain.
3. A valid Australian Class ‘C’ driver’s licence.

Additional criteria for a CSOF4 appointment (highly desirable)

1. Experience with CAD packages used for mechanical, electrical or Electronics design (Such as Altium Designer, AutoCAD, OrCAD, Sketchup etc).
2. Experience with at least *one* of the following:
    - Test and measurement instruments (Spectrum & network analysers, oscilloscopes, signal generators) and their software control.

- Atomic clocks (i.e., hydrogen masers & Rubidium clocks), GPS receivers and associated precision timing protocols.
- Fibre optic systems (RF over fibre or digital protocols over Fibre Gbit/s), including cable management, splicing, and testing.
- Industrial Ethernet, SCADA, 4-20mA signalling, Modbus, I2C or SPI low bitrate and communications for monitoring and control.
- Familiarity with maintaining, and programming PLC and servo control systems.
- Radiated emissions measurements, equipment magnetic and RF shielding, design for electromagnetic compatibility (EMC) and Radio Frequency Interference finding and measurement.
- Satellite ground stations and RF transceiver systems.

Not sure if you meet all the criteria?

Don't let that stop you from applying. We recognise there are many pathways to developing skills and experience, and we can consider appointing at different levels depending on what you bring. If you have more experience and capability than outlined, the role may be upgraded to a higher level; likewise, if you are still developing in some areas, we may be able to offer the role at a lower level. If you'd like to discuss whether this opportunity could be the right fit, please contact the person listed on page 1.

Required Competencies at CSOF3

- **Teamwork and Collaboration:** Proactively seeks and considers the ideas and opinions of others from within and outside the team to help form decisions, plans or actions.
- **Influence and Communication:** Puts forward ideas by presenting factual information supported by data, definitions, examples, illustrations or other aids, which will assist in conveying meaning.
- **Resource Management/Leadership:** Provides instruction and assists other staff to complete allocated tasks and activities.
- **Judgement and Problem Solving:** Identifies and considers the implications of a range of available alternatives in order to select the most appropriate response to problems of a familiar or recurring nature.
- **Independence:** Recognise and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).
- **Adaptability:** Willingness to change ideas or perceptions based on new information, contrary evidence or other people's points of view. Prepared to try out different approaches.

Required Competencies at CSOF4

- **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:** Allocates activities, directs tasks and manages resources to meet objectives. Provides coaching and on the job training, recognises and supports staff achievements and fosters open communication in the team.
- **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:** Recognise and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).
- **Adaptability:** Willingness to change ideas or perceptions based on new information, contrary evidence or other people's points of view. Prepared to try out different approaches.

Setting you up for success

We understand that not everyone works in the same way and sometimes people may require reasonable support and adjustments to perform at their best. Whether related to the recruitment process and or the role itself, this may include options such as providing different methods of communication, flexible hours or physical adjustments to work methods. If you feel comfortable, we encourage you to share any support and adjustments you may need to carry out the inherent requirements of the role. Please reach out to the careers.online@csiro.au if we can help you to equitably participate in our recruitment process or the role itself.

CSIRO values

CSIRO is a values-based organisation committed to values-based leadership.

Value	Descriptor	Behaviour
People first	Our priority is the safety and wellbeing of our people. We believe in, and respect, the power of diverse perspectives. We seek out and learn from our differences.	• Respectful • Caring • Inclusive
Further together	We achieve more together than we ever could alone. We listen and collaborate, in teams, across disciplines, across boundaries. We embrace ambiguity and use discussion and persistence to generate unique solutions to complex problems.	• Accountable • Authentic • Courageous
Making it real	We do science with real impact. We thrive when taking on the big challenges facing the world. We take educated risks and defy convention. We celebrate successes and failures and leverage them to learn as we strive to be the force for positive change.	• Partnering • Cooperative • Humble

Trusted	We're driven by purpose but remain objective. We fight misinformation with facts. We earn trust everywhere through everything we do. We trust each other and we hold each other accountable. Together our actions drive Australia's trust in CSIRO.	• Curious • Adaptive • Entrepreneurial

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.

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.
- The successful candidate must be willing and able to work and travel outside of normal hours on occasion as part of an after-hours/on-call support system, and to assist with upgrades and maintenance. Overtime pay and/or flex leave will be applicable as per policy.
- The successful candidate must be open to spend occasional periods of up to two weeks at a time working at locations away from Parkes.