# Position Details

## Research Projects- CSOF5

|  |
| --- |
| The following information is for applicants |
| Advertised Job Title | Senior Radio Frequency Technician / Engineer |
| Job Reference | 98159 |
| Tenure | Specified Term of 5 years  |
| Salary Range | AU$114,219 - AU$123,605 per annum (pro-rata for part-time)plus up to 15.4% superannuation |
| Location(s) | New Norcia Ground Station, Western Australia |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | Australian Citizens Only |
| Position reports to the | M+O Manager |
| Client Focus – Internal | 100% |
| Client Focus – External | 0% |
| Number of Direct Reports | 0 |
| Enquire about this job | James Leith (Human Resources Specialist Manager) via email at james.leith@csiro.au  |
| 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](https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan).

**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](https://www.csiro.au/en/about/policies/child-safe-policy).

### Role Overview

The New Norcia Ground Station supports ground-based spacecraft telecommunications as part of the European Space Agency’s Tracking Stations Network (ESTRACK), under contractual arrangements between ESA and the Commonwealth Scientific Industrial Research Organisation (CSIRO).

New Norcia operations are expanding significantly with the construction of a second 35m antenna (NNO3) currently underway. The new antenna will significantly extend the S-band and X-band capabilities of New Norcia to include K-band and Ka-bands, with cryogenic feeds and high-power klystron amplifiers.

The Senior Radio Frequency and Launch Operations Technician / Engineer provides specialist technical support for radio frequency systems including microwave uplink, downlink, telemetry processing, cryogenic and timing systems.

The position is responsible for designing and participating in RF maintenance activities on antennas, detailed corrective maintenance activities, providing support in antenna RF systems, and cryogenic systems, assisting with technical planning and automation of activities, minor project and contractor management.

Additionally, the position requires in-depth support of Launch and Early Orbit (LEOP) activities, including planning, design and performance of System Performance Tests to validate RF and telemetry performance of equipment against performance metrics for all antenna systems across S, X, K, and Ka-bands.

### This position is being offered as either full or part-time. It is anticipated that the successful candidate will attend the station for between five and eight approximately 9 hour shifts per fortnight, with some work-from-home opportunities. The position requires occasional support of launch activities on a rotating roster, that generally occur overnight.

### Duties and Key Result Areas

* Communicate effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Work as part of a multi-disciplinary, often regionally dispersed team, to carry out tasks autonomously in support of scientific research.
* Perform maintenance and installation activities, to ESA or manufacturers’ specifications, including:
	+ Commissioning, upgrading, testing, calibration and repair of equipment and subsystems.
	+ Complete planned maintenance work orders as generated by maintenance routine.
	+ Installation of new and upgraded operational software.
	+ Working to improve and automate maintenance and reporting processes.
	+ Operational software programme maintenance and system administration in a secure networked computer environment.
	+ Respond to faults, complaints, audits, investigations and incident reports.
* Provide support to the maintenance of specialised electronic equipment including feed systems, LNAs, uplink high power microwave amplifiers and baseband telemetry processing equipment.
* Perform configuration of launch telemetry recording and processing equipment according to Network Configuration Documentation (NCD), and design, perform, and report on system performance tests to ensure equipment performance against NCDs.
* Participate in launch and early orbit activities.
* Provide out of hours emergency support via telephone analysis where possible and attend onsite for diagnostics and repairs where necessary.
* Liaise with internal and external customers, including local, CSIRO, and ESA personnel. Work co-operatively with these same organisations to converge on solutions to problems or deficiencies.
* Provide mentoring to junior Electronic Systems technicians.
* Use established reporting tools and procedures to provide comprehensive reports.
* Utilise UNIX and Windows based tools in support of these systems.
* Identify potential spares issues and if necessary, determine suitable replacement parts and locate the source of supply.
* Provide specialist technical support of radio frequency systems including microwave, transmitter, receiver, cryogenic and timing systems.
* Perform investigation of operational incidents and anomalies including root cause analysis.
* Provides equipment level specialist support following ESA equipment specific training.
* RF safety checks and compliance with ARPANSA requirements in coordination with the designated CSIRO Radiation Safety Officer.
* Provide support in project management of specific tasks including:
	+ Supervising contract staff on site on specific project tasks.
	+ Provide technical guidance to contractors and information required for the proper interfacing of new or upgraded systems.
		- Provide support for configuration management including:
	+ Assist and advise in the management of system drawings and schematics to reflect as-installed configurations.
	+ Maintain appropriate recordkeeping and other tools for version control of hardware/software in use in the systems.
	+ Participate in and provide support for system performance testing, data capture and analysis to assist with ESA development work and anomaly resolution.
	+ Provide local support and facilitate the coordination, implementation and testing of ESA engineered solutions.
	+ Technology assessment and practical evaluation, contributing to specification preparation for future enhancements and planning for future upgrades.
	+ Use Computerised Maintenance and Management System (CMMS) based tools to maintain and improve where possible maintenance efficiencies and reliability of systems.
	+ Participate in planning meetings.
* 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 meet all essential criteria can be appointed.*

* Proficient in system performance and integration testing of electronic equipment.
* Proficient in the use of RF measurement equipment.
* Proficient in the programming of computer systems for test automation.
* Ability to read and understand highly complex electronic schematics.
* The ability to work effectively as part of a multi-disciplinary, regionally dispersed team, and carry out tasks autonomously.
* Excellent communication skills, both written and oral, including the ability to anticipate the interests and knowledge level of an audience and present information and feedback accordingly.
* Demonstrated ability to effectively manage several competing priorities simultaneously and carry out non-routine tasks under broad direction from relevant technical staff.

## **Desirable**

* Willing to undertake HV awareness training for HV aspects of RF transmitter operation and maintenance.
* Willingness to work at heights on antenna structures.
* Experience in signal reception and transmission at S, X, K, and Ka-band (New Norcia ground Station) to IF for Modulation/Demodulation. In particular:
	+ Signal propagation and space to ground link budget.
	+ Knowledge of RF measurement (e.g. G/T, EIRP).
	+ Understanding of frequency conversion techniques and signal measurement techniques (e.g. spectrum analyser).
* Practical experience with cryogenic receiver techniques.
* Practical experience in high power amplifier techniques.
* Hands-on mechanical skills, including the use of hand tools and high reliability soldering.
* Comprehension of French language, and willingness to undertake French language training.

## **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

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.
* Work to a call out roster for all technical staff to provide out of hours coverage for critical equipment failures.
* Support occasional pre-planned out of hours launch and early orbit activities.

*If you have any queries regarding finalising the Duties and Key Result Areas or the Special Requirements for this position, please consult with In-business HR or the Talent Acquisition Team.*

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and [Space and Astronomy](https://www.csiro.au/en/research/technology-space/astronomy-space?start=0&count=12) for more information.

CSIRO is a values-based organisation.  In your application and at interview you will need to demonstrate behaviours aligned with our values of:

* People First
* Further Together
* Making it Real
* Trusted