# Position Details

## Research Projects- CSOF3

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| The following information is for applicants |
| Advertised Job Title | Graduate Mechanical Engineer |
| Job Reference | 72852 |
| Tenure | Specified Term of 3 years Full-time, Part-time, or Job-share (if circumstances permit) |
| Salary Range | AU$63k - AU$80k per annum (pro-rata for part-time) plus up to 15.4% superannuation |
| Location(s) | Marsfield (Sydney) New South Wales |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian Citizens and Permanent Residents currently residing in Australia
* New Zealand Citizens currently residing in Australia
* Australian temporary residents who are currently residing in Australia and have the right to work for the expected duration of the term (at least to end of June 2024), with no requirement for sponsorship.
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| Position reports to the | Mechanical and Cryogenics Engineering Team Lead |
| Client Focus – Internal | 100% |
| Client Focus – External | 0% |
| Number of Direct Reports | 0 |
| Enquire about this job | Nick Carter via email Nick.Carter@csiro.au or telephone 02 9372 4356 |
| 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. |

### Role Overview

CSIRO Astronomy and Space Science (CASS) operate several world-class radio astronomy observatories that are collectively known as the Australia Telescope National Facility or the ATNF. CASS is one of the world’s leading astronomical facilities and Australia’s premier radio astronomy research organisation. CASS is also a participant in the international Square Kilometre Array (SKA) project which has the goal of building the world’s most sensitive radio telescope.

The position of Graduate Mechanical Engineer involves mechanical design associated with the development of receiving systems and instrumentation for use in radio astronomy and space science. The CASS antennas and receiving systems operate over the frequency range 0.2 to 115 GHz and encompass the fields of cryogenically cooled microwave receivers, phased array feed systems, specialised RF electronics, digital and signal processing systems. The role includes Finite Element Analysis (FEA); thermal modelling; mechanical design and the production of engineering reports and engineering drawings to AS1100 (or equivalent). The position provides mechanical engineering support to the telescope sites, including receiver installation and maintenance.

### Duties and Key Result Areas

* Undertake mechanical design tasks including Finite Element Analysis (FEA), and thermal modelling associated with the development of antennas, receiver and feed systems, radio frequency and digital systems for use in radio astronomy and/or space science applications under the guidance of a senior engineer
* With training, produce engineering/project reports and engineering drawings to AS1100 (or equivalent) suitable for distribution to clients, suppliers and contractors
* Support the fabrication of prototype and/or proof-of-concept components or assemblies using in-house facilities
* Work effectively as an integral member of a multi-disciplinary team comprising scientists, engineers and technicians, to undertake engineering development and associated tasks under broad guidance from more senior members of staff.
* Travel to CASS observatories and other sites to assist in the maintenance, development, verification and commissioning of instrumentation.
* Work collaboratively and honestly with internal and external colleagues, clients and partners, and contribute to a range of research projects in support of CSIRO’s scientific objectives.
* Design and execute small research experiments in the field of cryogenics and assist with elements of larger test programs.
* Respond courteously and efficiently to client requests, maintaining clear communication regarding mutual expectations and monitoring client satisfaction.
* Communicate openly, effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Adhere to the spirit and practice of CSIRO’s Values, Code of Conduct, Health, Safety and Environment procedures and policy, 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.*

1. A recognised degree in mechanical engineering and/or a direct equivalent qualification.
2. Some experience in the use of a 3D mechanical CAD package, for example AutoCAD Inventor.
3. Some experience in the use of mechanical Finite Element Analysis tools, for example NASTRAN or ANSYS.
4. Proven ability to work collaboratively as part of a multi-disciplinary team and carry out tasks successfully in support of project goals.
5. Demonstrated ability & willingness to contribute novel ideas and approaches in support of scientific investigations.
6. Demonstrated ability to effectively manage a number of competing priorities simultaneously and to take direction on non-routine tasks as required.

## **Desirable**

1. The ability to the produce high quality engineering reports and engineering drawings to AS1100 (or equivalent) suitable for manufacture by suppliers and/or contractors.
2. A history of completing tasks from design/analysis through to manufacture, assembly and commissioning, including successful and proactive troubleshooting.
3. An understanding of the principles behind design of cryogenic and/or refrigeration systems and the materials used in these applications.

## **Required Competencies**

* **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.

**Special Requirements**

The successful candidate:

* will be asked to obtain and provide evidence of a National Police Check or equivalent. Please note that people with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* must be willing and able to work flexible hours at times; to spend periods of up to two weeks working at locations away from Sydney.
* must be willing and able to access and work at heights up to 100m above the ground and to work in confined spaces.

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and [CSIRO Astronomy and Space Science](https://www.csiro.au/en/Research/Astronomy) for more information.

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

1. People First
2. Further Together
3. Making it Real
4. Trusted