# Position Details

## Research Projects – CSOF3/CSOF4

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| The following information is for applicants |
| Advertised Job Title | Mechatronic Engineer  |
| Job Reference | 93170 |
| Tenure | Specified Term of 3 years Full-time or Part-time (minimum 0.8 FTE) |
| Salary Range | **CSOF3:** AU$68,148 – AU$86,733 per annum + up to 15.4% superannuation**CSOF4:** AU$89,680 – AU$101,459 per annum + up to 15.4% superannuation\* Applications may be considered across two capability levels, and the successful candidate will be appointed at the level commensurate with their skills and experience. |
| Location(s) | Lucas Heights (Sydney), NSW |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian/New Zealand Citizens
* Australian Permanent Residents
* Australian Temporary Residents currently residing in Australia with an existing valid visa and full working rights to cover the duration of the specified term (at least until December 2026), with **no requirement** for visa sponsorship by CSIRO.
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| Position reports to the | Sensor Prototyping Hub Lead, Team Leader |
| Client Focus – Internal | 90% |
| Client Focus – External | 10% |
| Number of Direct Reports | 0 |
| Enquire about this job | Andrew Filisetti via email Andrew.Filisetti@csiro.au or phone +61 3 6232 5116 |
| 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

**CSIROs Future Science Platforms (FSPs)** represent an investment in science that underpins innovation and has the potential to help reinvent and create new industries for Australia. The [Autonomous Sensors Future Science Platform](https://research.csiro.au/autonomous-sensors-fsp/) (AS FSP) will accelerate the generation of new tools to enable growth of digital decision making within domains; combining fundamental sensor research with autonomous engineering solutions to provide new advanced sensing and platform technologies for the environmental monitoring, health monitoring, mining, agriculture, and manufacturing domains.

There are two research themes within the Autonomous Sensors FSP – Fundamental Sensor Research and Advanced Engineering for Autonomy. The third pillar of the FSP, the Sensor Prototyping Hub, is a new initiative within CSIRO that will coordinate and grow CSIRO’s current strengths in fundamental sensor development and autonomy. The Hub will act as a bridge between engineering and technical capabilities within CSIRO and projects in need of prototyping expertise. It will serve to fast-track new technology engineering development for trial deployment and further build our engineering capabilities.

The Mechatronic Engineer will contribute to the objectives of the Sensor Prototyping Hub by developing new sensor technology. Based at Lucas Heights (Sydney) the Mechatronic Engineer will work in a team environment, initially on projects involving X-ray and radio frequency-based sensors. Sensor applications span a range of industries such as mining, biosecurity and food quality. The Mechatronics Engineer will work closely with scientists, other engineers within the sensor prototyping hub, and electronics technical staff in developing hardware and/or software underpinning sensor operation, solving a range of challenging, real world engineering problems. The engineer will be required to deliver a range of selected engineered solutions that may span the range of design and integration of mechanical systems, circuits, general and embedded software, communications, use and/or design of test equipment to characterise sensor performance or the development of documentation to enable researchers to conduct experiments repeatedly in the laboratory or field.

Applications are invited across two capability levels and the successful candidate will be appointed at the level commensurate with their skills and experience.

### Duties and Key Result Areas

* Undertake the design, implementation and validation of relevant mechanical and electronic hardware systems.
* Understand mechanical and electronic integration principles for prototype systems.
* Undertake laboratory testing and field trials of developed systems in various environments.
* Perform some non-routine analyses or technology development activities using a range of techniques, often working on a number of parallel tasks.
* Work with discretion to decide on the timing of operations within the work team’s plan and plan ahead to meet experimental and/or project demands.
* Independently test possible solutions to resolve identified problems.
* 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 collaboratively as part of a multi-disciplinary applied research team, to carry out tasks under limited direction in support of scientific research.
* Adapt and/or develop original experimental methods, mechanics, hardware and devices in support of existing and further research.
* 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.

***Additional duties at the higher CSOF4 level may also include:***

* Undertake a wide variety of tasks or tasks with a high degree of specialisation.
* Under general direction, contribute to research and/or technology through the development of original and adapted experimental methods, equipment or software.
* Show initiative to seek new approaches to meet experimental or technological needs when encountering new problems where methods are not defined.
* Participate in the identification and definition of research and/or technological problems with colleagues.
* Liaise with senior colleagues to determine their needs and take personal responsibility for their satisfaction.
* Participate in planning projects and accept responsibility for scheduling and completion of major parts of the project, including evaluation of options, experimental design, data collection and analysis, user and customer research, user experience and/or mechanical/electronic design, implementation and delivery.
* Make significant contributions to the interpretation and communication of research or technological results and may collaborate on drafting presentations to, and/or detailed written reports for, clients and the scientific and/or technology community.

## **Selection Criteria**

#### Essential

*Under CSIRO policy only those who meet all essential criteria can be appointed.*

1. Relevant bachelor’s degree (with honours) or master’s degree in mechatronic engineering, or related area.
2. High level written and oral communication skills with the ability to communicate effectively across internal technical teams.
3. Demonstrated ability to design and integrate mechanical devices and electronic circuits, including mechanical/electronic design/ basic software and/or firmware development.
4. A practical, hands-on approach to solving engineering problems.
5. Demonstrated ability in mechanical and/or electrical design software and document preparation that may describe designs, test results, system validation or manufacture.
6. Familiarity with the function or use of modern sensors and devices, e.g., laser, vision, inertial, radar or robotics.
7. Ability to work effectively as part of a multi-disciplinary team and carry out tasks under general direction from research team leaders.

***For appointment at the higher level (CSOF4), the additional essential criteria will also include:***

1. Significant industry experience with mechatronic design activities or prototyping.

## **Desirable**

1. Demonstrated programming experience in C/C++, Python, MATLAB or similar.
2. Instrumentation, control and automation design and development skills, particularly as they relate to automating systems of sensors and laboratory/ field platforms.
3. Experience with any of the following: mechanical design, mIoT/ Networked systems, microcontroller programming, signal communication fundamentals, developing software interfaces using GUIs, for industrial instrumentation and sensors, PLC programming and safety circuits.

## **Required Competencies**

## **CSOF3 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.

## **CSOF4 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:** 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:**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 may be subject to conditions including provision of a national police check as well as other security/medical/character clearance requirements.

* The successful candidate will be asked to obtain and provide evidence of a National Police Clearance or equivalent. Please note that individuals with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* The successful candidate will be required to obtain and maintain a security clearance at the ANSTO site.

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. To find out more visit us [online](http://www.csiro.au/)!

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

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

Find out more about CSIRO [Mineral Resources](https://www.csiro.au/en/Research/MRF)