# Position Details

## Research Projects- CSOF4

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| The following information is for applicants | |
| Advertised Job Title | Software Systems Engineer in Space and Robotics |
| Job Reference | 94852 |
| Tenure | Specified Term of up to 36 months, Full-time |
| Salary Range | AU$89k - AU$101k per annum plus up to 15.4% superannuation |
| Location(s) | Pullenvale, QLD |
| 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 | Team Leader – Integrated Mining Technologies |
| Client Focus – Internal | 40% |
| Client Focus – External | 60% |
| Number of Direct Reports | 0 |
| Enquire about this job | careers.online@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](mailto: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

This position as a Systems Engineer will directly contribute to CSIRO's role in supporting Australia's emerging space launch industry.

The Australian Government is building new research capabilities, industry engagement and commercialisation outcomes through the Trailblazer Universities Program.  This initiative is building additional capacity to focus on problems that matter to the nation by driving research excellence and real-world impact in impact areas such as defence, food and beverage, recycling and clean energy, resources technology and critical minerals technology, and space. CSIRO is partnering with universities and industry consortia to provide specialist equipment and expertise in support of projects in these priority areas.

In the space technology priority area CSIRO is developing a Mobile Mission Operations Centre (MMOC). This mobile facility will be based in a B-Double trailer specifically designed to meet the unique requirements associated with successfully managing launches at remote sites.  This "all-in-one" facility will comprise state of the art computing, visualisation, forward simulation/modelling capabilities, as well as accommodating multi-user telecollaboration workspaces and support for in-situ manufacturing, maintenance, and assembly to meet anticipated on-site launch services.

The facility will be developed by CSIRO's Mining Technologies Research Group (MTRG), which is one of Australia’s largest mining research groups. The MTRG delivers transformational change to the mining industry with sensing, automation, and remote operations technologies. The MTRG has developed a number of world-first technologies for the Australian and International mining industry that improves safety, efficiency, and sustainability.

The MTRG is also contributing to CSIRO's emerging planetary space program, combining decades of remote and automated mining research with CSIRO's extensive space heritage in astronomy, deep-space tracking and communications, and Earth observations. As a part of the MRTG team, the Systems Engineer role will work closely with other members of the team to design and install the internal fitout for the MMOC, including HMI technologies for 30 workstations, computing infrastructure, networking and WAN communications, and multi-media equipment.

The MMOC will be based in Brisbane, however the mobile nature of the facility will see it deployed for service in other locations periodically interstate. It is expected that this role will require travel to metropolitan and regional areas in Australia to train partners in the usage of the facility and troubleshoot issues that cannot be resolved remotely.

CSIRO’s purpose is *Solving the greatest challenges through innovative science and technology.*  As problem solvers, we are sometimes also called upon to assist with solving novel challenges, and this requires teamwork and communication through the sharing of ideas among the CSIRO community and with external clients.

CSIRO also has a role in *training the next generation of researchers and communicating about science and technology.*When the facility is not being used to support rocket launch operations, it will be used to deliver information about CSIRO research and STEM outreach at events in other metropolitan and regional areas. This role will also work with team members to design and maintain the systems used to support the delivery of outreach experiences suitable for a range of different ages.

### Duties and Key Result Areas

* Contribute to Mobile Mission Operations Centre (MMOC) design discussions, working with internal and external stakeholders to identify requirements for MMOC IT systems.
* Travel periodically to MMOC construction facilities, conduct inspections, and report on progress with recommendations for any modifications during construction.
* Under limited supervision, research, test and manage the purchase of commercial off-the-shelf IT products to satisfy requirements for the MMOC systems.
* Install and maintain computing hardware and software for MMOC IT systems including workstation and server installations.
* Under limited supervision, develop scripting and programs for automating startup and shutdown procedures for MMOC IT systems.
* Create and maintain documentation for users of the MMOC IT systems.
* Develop and delivery training material for users of the MMOC IT systems.
* Remotely support stakeholder use of the MMOC and, when necessary, travel interstate to train stakeholders in MMOC operation and/or troubleshoot issues.
* Under general direction, develop scripting and programs to support use of the MMOC IT systems in the delivery of stakeholder engagement and STEM outreach materials.
* 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 clients 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 software 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.
* 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.
* Work collaboratively as part of a multi-disciplinary research team to carry out tasks in support of CSIRO’s scientific objectives.
* Adhere to the spirit and practice of CSIRO’s Values, Code of Conduct, Health, Safety and Environment procedures and policy and diversity initiatives.
* Other duties as directed.

## **Selection Criteria**

#### Essential

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

1. Relevant diploma/bachelor’s degree or equivalent relevant experience in Software Engineering or Software Systems Engineering.
2. Demonstrated proficiency with installing, maintaining, and troubleshooting Windows and Linux systems.
3. Experience with installing and maintaining computer networks (LAN/WAN)
4. Systems programming experience - some combination of shell, Python, Ruby, Perl, Powershell, or equivalent.
5. Familiarity with modern development practices, including version control, CI/CD, testing, documentation, and code quality aspects.
6. The ability to effectively manage a number of competing priorities simultaneously, carry out non-routine tasks under general direction, and investigate problems by identifying and considering the implications of a range of available alternative solutions.
7. Self-starter with the ability to work in a team environment, utilise resources effectively, meet deadlines, and adapt to a dynamic work environment while maintaining work quality and performance.

## **Desirable**

1. Familiarity with container technologies such as Docker or Kubernetes.
2. Familiarity with WAN telecommunications hardware including 5G and satellite communications.
3. Familiarity with systems software development languages (C++/C#).
4. Familiarity with user interface and web development technologies (HTML5 / CCS / Javascript).
5. Familiarity with content development (video editing, 2D and 3D multimedia creation).

## **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 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 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 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.
* This role has child safety obligations. Accordingly, the successful candidate will be required to provide evidence that they hold a valid paid/employee (not volunteer) Working with Children/ Vulnerable People Check or be willing to apply for one sponsored by CSIRO after short-listing.
* Must possess a valid Driver's Licence

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and [Mineral Resources – CSIRO](https://www.csiro.au/en/about/people/business-units/Mineral-Resources) 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:

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