UNSW CANBERRA

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POSITION DESCRIPTION

Space Systems Engineer – Concurrent Design Facility Manager

Position Level	7/8
Faculty/Division	UNSW Canberra (ADFA)
School	School of Engineering and Information Technology (SEIT)
Position Number	00030888
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Position Summary

The University of New South Wales is one of Australia's leading, research-intensive universities. UNSW has more than 50,000 students, and campuses in Sydney and Canberra – the latter at the Australian Defence Force Academy (ADFA). It has more industry links, and more top technology entrepreneurs, top CEOs and millionaires amongst its alumni than any other Australian university.

As part of the investment in the research initiative UNSW Canberra Space, the university has developed the in-house capability to carry out innovative, routine and affordable in-orbit space research. To date, the group has developed and flown five satellites, including Australia's most complex home-grown space mission and arguably the world's most complex cubesat mission ever, the M2 formation flying / on-board AI / S&T demonstration mission. Our goal is to use our capability to perform high impact science and technology development that will in turn make a significant contribution to meeting Australia's need for safe and secure access to space-based technologies for economic, social and strategic benefit.

UNSW Canberra and the French Space Agency CNES have jointly developed the Australian National Concurrent Design Facility (ANCDF) co-located on the UNSW Canberra campus at the Australian Defence Force Academy, for the preliminary design and assessment of new space mission concepts. This facility rapidly assess the technical, programmatic and financial/commercial feasibility of candidate space mission concepts in order to provide early-stage input to the planning and development of the portfolio of future missions. It has become a key national asset which is available to the wider Australian space community to encourage and foster collaboration and the adoption of high quality professional approaches to space engineering, thereby helping the growing sovereign space capability grow and mature. In the past two years, UNSW Camberra Space have completed studies in the facility for a number of government and university organisations.

A typical study in the facility brings together professional engineers from UNSW Canberra Space, representing the various flavours of engineering expertise needed to perform the technical analyses and test mission and spacecraft concepts to satisfy requirements, and the customer. The people, their interactions, and the expertise with which they drive the underpinning software engine, are key to the outcomes delivered. Critical to the process is the facilitator– a role not unlike the conductor of an orchestra.

Accountabilities

Specific accountabilities for this role include:

At Level 7 :

- Planning of CDF studies together with the customer, understanding customer needs and proposing a CDF-based solution, including negotiation of scope and cost
- CDF session planning, defining number and contents of sessions and allocating team members in conjunction with parallel team projects
- Facilitating CDF studies which includes
    - Moderation of detailed (space-focussed) technical discussions
    - Ad-hoc adaptation to discussion outcomes or unforeseen circumstances
    - Balancing group v. individual needs (leave no one behind and don't bore everyone else)
    - Organising study logistics
    - Handling CDF IT infrastructure (incl. electronic whiteboard, screen sharing, video-conference hardware and software)
    - Documenting CDF studies by providing a report structure, writing and/or delegating individual chapters, harmonising contents, and finalising the review process together with the customer
- Cooperate with all health and safety policies and procedures of the university and take all reasonable care to ensure that your actions or omissions do not impact on the health & safety of yourself or others.
- Ensure hazards and risks are identified and controlled for tasks, projects and activities that pose a health and safety risk within your area of responsibility.
- Align with and actively demonstrate the UNSW Values in Action: Our Behaviours and the UNSW Code of Conduct.

At Level 8, in addition to Level 7 above :

- Providing strong leadership for the ongoing development of the ANCDF facility, including software and process
- Providing strong leadership for training and development of staff from across the broader UNSW Canberra Space team in CDF skills and processes, and lead the development of a possible future dedicated CDF team
- Working with the broader UNSW Canberra Space team in the delivery of skills and training with the use of the ANCDF.

Skills and Experience

At Level 7 :

- A degree in Engineering or related discipline with subsequent relevant experience or equivalent competence gained through any combination of education, training and experience.
- Strong background in space mission systems engineering including broad experience of mission types (e.g. optical and RF Earth observation, exploration, advanced concepts such as on-board processing) and the analysis and sizing of satellite subsystems
- Experience in defining typical space systems engineering artefacts in early design stages such as requirements analysis, trade-off identification and baseline selection, risk assessment and risk mitigation strategy, technology readiness assessment and development roadmap, project schedule and cost estimates, testing and validation plan
- The ability to use satellite design and other software such as IDM-CIC, MS Excel, VBA, Python, Java, Git
- Strong customer focus, negotiation skills and understanding to address competing and potentially weakly-defined customer needs, and ability to extract technically viable requirements and subsequent solutions to meet those needs
- Experience with a wide variety of group work methodologies (e.g. whole-group discussions, small-group work, individual work, polling) and confident facilitation of multi-discipline, diverse groups of up to 20 or more highly-skilled experts subject to time and information constraints
- Ability and capacity to implement required UNSW health and safety policies and procedures.

At Level 8, in addition to Level 7 above :

- Experience in managing and ongoing development of a technical capability or facility of similar nature to the Australian National Concurrent Design Facility
- Experience in leading (including training, coordinating, coaching, mentoring) teams with multidisciplinary skillsets and diverse backgrounds
- Experience in using processes and technical capabilities of similar nature to the ANCDF for the purpose of education, skills and training

Pre-Employment checks required for this position

- Verification of Qualifications
- Criminal History Check
- Identification Check