Australian National University

Position Description

College/Division:	College of Science
Faculty/School/Centre:	Research School of Astronomy and Astrophysics
Department/Unit:	Advanced Instrumentation and Technology Centre (AITC)
Position Title:	Software Specialist
Classification:	ANU Officer Grade 6/7 (Specialist)
Position No:	TBC
Responsible to:	Software and IT Discipline Lead
Number of positions that report to this role:	
Delegation(s) Assigned:	

PURPOSE STATEMENT:

The Research School of Astronomy and Astrophysics' (RSAA) research program maintains a high-level specialist team to develop innovative state-of-the-art ground-based and space-based optical/Infrared instrumentation and telescope systems, as well as for helping support existing telescope facilities at Siding Spring Observatory. This position provides software expertise in support of the program.

KEY ACCOUNTABILITY AREAS:

Position Dimension & Relationships:

The Software Specialist reports to the Software and IT Discipline Lead. The role is responsible for supporting the design, validation, and maintenance of software systems for approved RSAA technical programs and activities. The role also includes assisting in the development and maintenance of IT systems required for project activities. A close working relationship is required with other specialists within the AITC program, along with external partners and stakeholders. The Software Specialist follows best-practice procedures to ensure successful outcomes for complex multi-disciplinary instrumentation projects, often within the framework of international consortia. The occupant of the role is expected to maintain an aware of the state-of-the-art technology in the field and will be required to work within a matrix project management structure under the general direction of project manager(s) or more senior engineers.

Role Statement:

Under general direction the Software Specialist will:

- Carry out software engineering tasks requiring individual judgment in the application of best-practice software engineering techniques and methods.
- Maintain an awareness of, and capability in, software engineering and the application of best-practice techniques and methods.
- Support studies and evaluation of systems and equipment designs and novel concepts, including assistance in project planning estimates.
- Participate in the manufacture and integration of instruments and systems.
- Provide specialist technical advice to stakeholders as appropriate.
- Maintain and support existing equipment, including instrumentation at remote sites such as international observatories and Siding Spring Observatory.
- Assist in the development and maintenance of IT systems and software used in project activities.
- Comply with, maintain an awareness of and help promote all ANU policies and procedures; in particular those relating to work health and safety and equal opportunity.
- Perform other duties as requested, consistent with the classification level of the position and in line with the practice of multi-skilling.

SELECTION CRITERIA:

- A relevant degree (such as Computer Science, Software Engineering, Physics, Mathematics) and relevant practical experience or an equivalent combination of training and relevant experience.
- Experience in the design, production, and testing of software systems in a scientific environment. Experience in the areas of Electronics, Detector Systems, or Control Systems would be highly regarded.
- Proven experience with modern software development methodologies including experience with languages such as C++ and Python. Application of these skills to software systems deployed in a multi-threaded distributed environment on Unix and real-time operating systems is considered essential.
- Experience with systems administration of networked Unix systems.
- Demonstrated capacity to work collaboratively within multi-disciplinary teams using best-practice engineering methods.
- An understanding of project management techniques is desirable.
- Well-developed oral and written communication skills. A proven ability to document work and prepare and deliver project review materials. Excellent interpersonal skills.
- A demonstrated high level of understanding of equal opportunity best practice and a commitment to the application of EO policies in a University context.

The successful candidate must have rights to live and work in this country.

ANU Officer Levels 6 and 7 are broad banded in this stream. It is expected that at the higher levels within the broadband occupants, through experience, will have developed skills and expertise enabling them to more independently perform the full range of duties at a higher level, and that more time will be spent on the more complex functions of the position.

The ANU conducts background checks on potential employees, and employment in this position is conditional on satisfactory results in accordance with the Background Checking Procedure which sets out the types of checks required by each type of position.

Supervisor/Delegate Signature:		**Date:**	February 2023
Printed Name:	Jon Nielsen	**Uni ID:**	

References:

General Staff Classification Descriptors

Academic Minimum Standards

Australian National University

Pre-Employment Work Environment Report

Position Details

College/Div/Centre	**College of Science**	**Dept/School/Section**	**RSAA, AITC**
Position Title	**Software Specialist**	**Classification**	**ANUO Level 6/7 (Specialist)**
Position No.		**Reference No.**	

In accordance with the Work Health and Safety Act 2011 (Cth) the University has a primary duty of care, so far as reasonably practicable, to ensure the health and safety of all staff while they are at work in the University.

- This form must be completed by the supervisor of the advertised position and appended to the back of the Position Description.
- This form is used to advise potential applicants of work environment and health and safety hazards prior to application.
- Once an applicant has been selected for the position they must familiarise themselves with the University WHS Management System via Handbook guidance https://services.anu.edu.au/human-resources/health-safety/whs-management-system-handbook
- The hazards identified below are of generic nature in relation to the position. It is not correlated directly to training required for the specific staff to be engaged. Identification of individual WHS training needs must be in accordance with WHS Local Training Plan and through the WHS induction programs and Performance Development Review Process.
- 'Regular' hazards identified below must be listed as 'Essential' in the Selection Criteria - see ' Employment Medical Procedures' at http://info.anu.edu.au/Policies/_DHR/Procedures/Employment_Medical_Procedures.asp

Potential Hazards

- Please indicate whether the duties associated with appointment will result in exposure to any of the following potential hazards, either as a **regular** or **occasional** part of the duties.

TASK	regular	occasional	TASK	regular	occasional
key boarding	☒	☐	laboratory work	☐	☒
lifting, manual handling	☐	☐	work at heights	☐	☐
repetitive manual tasks	☐	☐	work in confined spaces	☐	☐
Organizing events	☐	☐	noise / vibration	☐	☐
fieldwork & travel	☐	☒	electricity	☐	☐
driving a vehicle	☐	☒			
NON-IONIZING RADIATION			**IONIZING RADIATION**		
solar	☐	☐	gamma, x-rays	☐	☐
ultraviolet	☐	☐	beta particles	☐	☐
infra red	☐	☐	nuclear particles	☐	☐
laser	☐	☐			
radio frequency	☐	☐			
CHEMICALS			**BIOLOGICAL MATERIALS**		
hazardous substances	☐	☐	microbiological materials	☐	☐
allergens	☐	☐	potential biological allergens	☐	☐
cytotoxics	☐	☐	laboratory animals or insects	☐	☐
mutagens/teratogens/ carcinogens	☐	☐	clinical specimens, including blood	☐	☐
pesticides / herbicides	☐	☐	genetically-manipulated specimens	☐	☐
			immunisations	☐	☐

OTHER POTENTIAL HAZARDS (please specify):

Supervisor/Delegate Name:	*Jon Nielsen*	**Date:**	*February 2023*

Australian National University

Position Description

College/Division:	College of Science
Faculty/School/Centre:	Research School of Astronomy and Astrophysics
Department/Unit:	Advanced Instrumentation and Technology Centre (AITC)
Position Title:	Senior Software Specialist
Classification:	ANU Officer Grade 8 (Specialist)
Position No:	TBC
Responsible to:	Software and IT Discipline Lead
Number of positions that report to this role:	
Delegation(s) Assigned:	

PURPOSE STATEMENT:

The Research School of Astronomy and Astrophysics' (RSAA) research program maintains a high-level specialist team to develop innovative state-of-the-art ground-based and space-based optical/Infrared instrumentation and telescope systems, as well as for helping support existing telescope facilities at Siding Spring Observatory. This position provides software expertise in support of the program.

KEY ACCOUNTABILITY AREAS:

Position Dimension & Relationships:

The Senior Software Specialist reports to the Software and IT Discipline Lead. The role is responsible for supporting the design, validation, and maintenance of software systems for approved RSAA technical programs and activities. The role also includes assisting in the development and maintenance of IT systems required for project activities. A close working relationship is required with other specialist within the AITC program, along with external partners and stakeholders. The Senior Software Specialist follows best-practice procedures to ensure successful outcomes for complex multi-disciplinary instrumentation projects, often within the framework of international consortia. The occupant of the role is expected to maintain an aware of the state-of-the-art technology in the field and will be required to work within a matrix project management structure under the broad direction of project manager(s) or more senior engineers.

Role Statement:

Under broad direction and working with a considerable degree of autonomy the Senior Software Specialist will:

- Carry out software engineering tasks requiring individual judgment and initiative in the application of best-practice software engineering techniques and methods.
- Maintain an awareness of, and capability in, software engineering and the application of best-practice techniques and methods.
- Undertake studies and evaluation of systems and equipment designs and novel concepts, including development of financial and project planning estimates.
- Lead the manufacture and integration of instruments and systems. As required, lead software engineering aspects of instrumentation projects which could include project planning and tracking.
- Provide specialist technical advice to stakeholders as appropriate.
- Maintain and support existing equipment, including instrumentation at remote sites such as international observatories and Siding Spring Observatory.
- Lead in the development and maintenance of IT systems and software used in project activities.
- Comply with, maintain an awareness of and help promote all ANU policies and procedures; in particular those relating to work health and safety and equal opportunity.
- Perform other duties as requested, consistent with the classification level of the position and in line with the practice of multi-skilling.

SELECTION CRITERIA:

- Progress towards a relevant post-graduate degree (such as Computer Science, Software Engineering, Physics, Mathematics) and extensive relevant practical experience or an equivalent combination of training and relevant experience.
- Extensive experience in the design, production, and testing of software systems in a scientific environment. Experience in the areas of Electronics, Detector Systems, or Control Systems would be highly regarded.
- Extensive experience with modern software development methodologies including experience with languages such as C++ and Python. Application of these skills to software systems deployed in a multi-threaded distributed environment on Unix and real-time operating systems is considered essential.
- Experience with systems administration of networked Unix systems.
- Demonstrated ability to work collaboratively within multi-disciplinary teams using best-practice engineering methods. Experience in managing software projects, including an ability to supervise and mentor junior staff.
- An understanding of project management techniques.
- Well-developed oral and written communication skills. A proven ability to document work and prepare and deliver project review materials. Excellent interpersonal skills.
- A demonstrated high level of understanding of equal opportunity best practice and a commitment to the application of EO policies in a University context.

The ANU conducts background checks on potential employees, and employment in this position is conditional on satisfactory results in accordance with the Background Checking Procedure which sets out the types of checks required by each type of position.

Supervisor/Delegate Signature:		**Date:**	February 2023
Printed Name:	Jon NIelsen	**Uni ID:**	

References:

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lifting, manual handling	☐	☐	work at heights	☐	☐
repetitive manual tasks	☐	☐	work in confined spaces	☐	☐
Organizing events	☐	☐	noise / vibration	☐	☐
fieldwork & travel	☐	☒	electricity	☐	☐
driving a vehicle	☐	☒			
NON-IONIZING RADIATION			**IONIZING RADIATION**		
solar	☐	☐	gamma, x-rays	☐	☐
ultraviolet	☐	☐	beta particles	☐	☐
infra red	☐	☐	nuclear particles	☐	☐
laser	☐	☐			
radio frequency	☐	☐			
CHEMICALS			**BIOLOGICAL MATERIALS**		
hazardous substances	☐	☐	microbiological materials	☐	☐
allergens	☐	☐	potential biological allergens	☐	☐
cytotoxics	☐	☐	laboratory animals or insects	☐	☐
mutagens/teratogens/ carcinogens	☐	☐	clinical specimens, including blood	☐	☐
pesticides / herbicides	☐	☐	genetically-manipulated specimens	☐	☐
			immunisations	☐	☐

OTHER POTENTIAL HAZARDS (please specify):

Supervisor/Delegate Name:	*Jon Nielsen*	**Date:**	**February 2023**