Australian Government

ANSTO
Science. Ingenuity. Sustainability.

POSITION DESCRIPTION

Position Title:	CAS Systems Integration Team Lead
Cluster / Business Unit / Division	Nuclear Science and Technology / Centre for Accelerator Science
Section or Unit:	Operations
Classification:	Band 6 / Band 7
Job Family:	Engineering and Technical
Position Description Number:	PD-2576
Work Contract Type:	Technical/Manager
STEMM/NON-STEMM:	STEMM
STEMM CATEGORY:	Technical

POSITION PURPOSE

The CAS Systems Integration Team Lead is responsible for leading the development, maintenance, and modernisation of diagnostic and digital systems, data acquisition tools, control software, and integration methodologies across CAS. This includes oversight of workflows through close integration with the Mechanical and Electrical Team Leads to deliver maintenance and compliance activities, software engineering design, asset management and capital works contributions.

The role supports delivery of user operations, drives digital transformation of accelerator and experimental workflows, and ensures integration of instrumentation, software, hardware and automation into all CAS capabilities. This position underpins reliability, safety, and data quality across CAS infrastructure, ensuring that core systems remain responsive to scientific and operational needs.

ORGANISATIONAL ENVIRONMENT

ANSTO leverages great science to deliver big outcomes. We partner with scientists and engineers and apply new technologies to provide real-world benefits. Our work improves human health, saves lives, builds our industries and protects the environment. ANSTO is the home of Australia's most significant landmark and national infrastructure for research. Thousands of scientists from industry and academia benefit from gaining access to state-of-the-art instruments every year.

Nuclear Science and Technology (NST) incorporate ANSTO's research, innovation, landmark research infrastructure, and associated platforms and capabilities. NST conducts research and development in relation to nuclear science and technology and connects people, transfers knowledge, and provides nuclear-based products and services for the benefit of Australia.

The Centre for Accelerator Science (CAS) is a multi-disciplinary team of scientists, technicians and engineers supporting academic and industry users across Australia and the world with a suite of accelerator instrumentation for ultra-sensitive measurement, analysis and irradiation applications. As a user facility open to all, supported by the National Collaborative Research Infrastructure Strategy, CAS informs policy, provides critical services for IAEA, and enables discovery and innovation in areas such as environment, climate and health sciences, space technologies, advanced materials for energy and quantum, and cultural heritage.

CAS operates four tandem particle accelerators and a wide range of advanced (and often bespoke, inhouse designed) engineering systems, scientific instrumentation, equipment, and technologies across twelve beamlines for accelerator science applications and twelve chemistry laboratories for specialised

sample processing. CAS offers accelerator mass spectrometry, sample preparation, ion beam analysis, ion beam implantation, and ion beam irradiation - together in one centre - backed by decades of accumulated experience in accelerator science and operations.

The CAS Systems Integration team provides development, maintenance, and modernisation of diagnostic and digital systems, data acquisition, control software, and integration across CAS equipment and assets. This includes skills and tools for integration of beamline instrumentation, remote control systems, and experimental interfaces to ensure safe, precise, and efficient operation of accelerator, laboratory and user-facing systems. CAS Systems Integration capabilities include multi language code development, PLC and virtual computer control, remote operation, beam optics modelling, applied physics, mechatronics, and nucleonics.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities

Leadership and Management (Band 6)

- Lead and manage the provision of CAS Systems Integration support, maintenance, and development to ensure safe, compliant, efficient, high-quality operation of CAS assets and systems to enable the user program to deliver high-impact research and industry outcomes
- Ensure best practice operational and safety management of CAS Systems Integration resources and work schedules to deliver on agreed KPIs, metrics, and milestones within the CAS Asset Management Plan and Business Plan, in pursuit of CAS goals and supporting NST strategies.
- Lead the CAS Systems Integration team to achieve excellence by inspiring an inclusive and innovative environment that promotes psychological safety and builds a learning and growth culture.
- Formulate and prioritise plans and objectives that translate CAS operational and technical strategy into measurable deliverables for Systems Integration technical engineering operations.
- Report on Systems Integration team performance against targets and objectives, devise new ideas and strategies for growth including for streamlining and workforce development,
- Lead or contribute to capital development plans, control system upgrades, diagnostic instrumentation and lifecycle asset management to ensure integration with CAS operational workflow and alignment with future automation and collaboration opportunities.
- Drive continuous improvement in team delivery, initiate collaborations aligned with CAS strategy, and represent technical capability in operational and planning forums

Technical Engineering Expert (Band 6)

- As a Systems Integration engineering expert, provide engineering leadership and project management to advance the technologies, systems, capital and capability developments within CAS asset portfolio to ensure they remain world class and meet international safety and quality standards.
- Design and develop innovative instrumentation and engineering methodologies and techniques, evaluate and apply new and emerging technologies to ensure CAS meets stakeholder needs and organisational outcomes.
- Apply expert knowledge to ensure the highest technological, safety, and quality standards are maintained in all designs, developments, and commissioning of new and ongoing equipment in CAS.
- Utilise technical and engineering knowledge and expertise to examine, interpret, check and validate methods and results to provide engineering analysis and ensure accuracy of results produced.
- Apply extensive experience to train, supervise, and guide Operations staff, supporting technicians and engineers to ensure maintenance is completed in full and in a timely manner
- Provide expert advice and supervision to CAS staff, users (scientists, researchers, post-docs, students), visitors and contractors to ensure safe and effective work within the facilities in compliance with safety, licence, and legislative regulations.

- Collaborate and exchange information within the national and international accelerator science operations community and other engineering groups in NST and ANSTO.
- Produce technical reports for stakeholder engagement and project close outs, and presentations for workshops, conferences, and technical forums

Technical Engineering Specialist (Band 7), performing the above at specialist expert level

- Lead the planning, coordination and the delivery of complex of capital and operational programs across multiple disciplines. Ensure the maintenance and development of the facilities follows best in class methodologies and are aligned with CAS business needs and strategic priorities and enables the adoption of the latest technical trends that benefit accelerator-based research.
- Identify and manage operational risks through regular reviews and early-stage planning to determine any unforeseen issues that will impact on the future operation of the facilities and to allow for sufficient time for planning and the implementation of risk mitigation strategies.
- Evaluate the design and development work of peers and project contributors to assess the suitability to business needs and assess and provide guidance on technical performance, safety, maintainability and environmental compliance.
- Develop and maintain active professional networks nationally and internationally through engagement with peer facilities, technical forums, conferences, and other strategic collaborations.
- Represent ANSTO and CAS in technical planning discussions and external forums and use networks to foster value-add partnerships with local and global communities, to inform and shape strategic decisions and planning for future capability direction, interoperability and innovation in CAS technologies, accelerator systems, and instrumentation
- Undertake additional duties as required, including coverage during period of leave of other staff.

Decision Making

- The ANSTO values, organisational corporate plan, operational excellence program, NST strategy and CAS business plan provide the context for the position.
- Assess desired outcomes and provide advice to internal and external stakeholders and collaborators on the feasibility and methodology for CAS Systems Integration capabilities to their research projects
- The role exercises independent judgment in technical decision-making related to infrastructure reliability, maintenance response, and engineering method selection, within defined resource and safety parameters.
- The position works within a framework of legislation, ANSTO policies, professional standards and resource parameters. Within this framework, the position will be provided with the parameters in which to operate the facilities including decisions pertaining to project planning and resource allocation. The position has independence for decision making on methods and approaches for project planning and allocation of resources within CAS Systems Integration and is fully accountable for delivering outcomes within agreed timeframes and budgets.
- The position is fully accountable for the accuracy, integrity and quality of the content of advice provided to users, staff, and CAS Head of Operations and is required to ensure that decisions are based on sound evidence.
- Determine work priorities within the context of agreed work plans and schedules and consult with the CAS Head of Operations on complex, sensitive and major issues that have a significant impact on the facility operations.
- The position will be provided a budget developed by management within the constraints of which the position is expected to operate. The position will have authority to assign and approve expenditure within limits designated by the delegations manual and approve work hours and staff leave requests.

- The levels of authority delegated to this position are those approved and issued by the Chief Executive Officer. All delegations will be in line with the ANSTO Delegation Manual AS-1682 (as amended or replaced.

Key Challenges

- Sustaining excellence in CAS Systems Integration capabilities and operations as a world-class facility, identifying and prioritising opportunities to advance capabilities, and maintain strong working relationship across engineering, scientific and operational teams to support shared platform goals.
- Keeping pace with emerging technologies, regulatory requirements, innovation in field, to ensure continual improvement and implementation of best practise and future readiness.
- Delivering results and outcomes to the required standards and timeframes, given the need to be agile and responsive to opportunities, and adapt in an often changing and unpredictable environment.
- Understanding the objectives of a wide range of operational needs and capital projects to ensure the provision of expert advice to facilitate successful project outcomes.
- Performing technical work and designing solutions in short or changing timeframes, to ensure maintenance of world leading capabilities of the facility.
- Collaborating across disciplines to ensure safe and effective systems integration into broader accelerator, beamline, and user infrastructure - often under tight shutdown or delivery windows.

KEY RELATIONSHIPS

Who	Purpose
Internal	
CAS Head of Operations (Line Manager)	• Receive direction and guidance • Provide regular updates on key tasks, issues & priorities • Provide expert, authoritative and evidence-based advice • Support and implement staff engagement and quality recruitment • Negotiate and report on budgets and resources consistent with objectives, plans, targets and goals • Staff performance (APEA review of staff) and attendance and instruction on dealing with staff issues or problems • Recommend and gain endorsement for improvement or development plans and goals and other initiatives
CAS Management Team (Peers)	• Support team members and work collaboratively to contribute to achieving outcomes • Contribute to CAS decision making processes, planning and goals • Collaborate and share accountability • Negotiate and resolve conflicts
CAS Systems Integration team technicians and engineers (Direct Reports)	• Provide management, guidance and support • Provide coaching, career counselling, mentoring, supervision, instruction, direction, support, recognition, training, and performance and attendance monitoring & review. • Communicate work plans and activities and monitor outputs. • Monitor trends, performance and progress against the operational plans and communicate adjustments to work priorities which may be required to ensure delivery against the plan

CAS Team Leaders	• Optimise shared resources, coordinate scheduling, and deliver integrated accelerator science and technical engineering capabilities. • Contribute to group discussions, decision making processes and planning. Participate in meetings, share information and provide input on issues • Collaborate and share accountability • Negotiate and resolve scheduling or lab access conflicts
NST staff (scientists, researchers, post-docs) and staff across ANSTO organisation	• Develop and maintain effective working relationships and open channels of communication • Understand user requirements and desired outcomes • Provide expert advice, analysis and training • Support organisation-wide initiatives, strategic projects, and workgroups
External	
Collaborators from Universities, Industry, National and International Research organisations.	• Ensure CAS Systems Integration capabilities are fit for purpose and world class • Provide expert advice, analysis, training, guidance and supervision • Build and maintain relationships and partnerships
Suppliers	• Negotiate specifications and costs for procurement and contracts for service and delivery schedules

POSITION DIMENSIONS

Staff Data	
Reporting Line	Reports to the CAS Head of Operations
Direct Reports	2 x Computer Engineer 1 x Software/Mechatronics Engineer (capital funding dependent)
Indirect Reports	

Financial Data (2025/2026)	
Commercial Revenue / NCRIS Grants	
Operating Budget	$100k
Staffing Budget	$0.5M
Capital Budget	$200k
Assets	

Special / Physical Requirements	
Location:	Lucas Heights Working in different areas of designated site/campus as needed
Travel:	May be required travel to ANSTO sites from time to time Infrequent travel both internationally and nationally
Physical:	Office based physical requirements (sitting, standing, minimal manual handling, movement around office and site, extended hours working at computer) Laboratory facility and workshop physical requirements ((lifting, standing for long periods, operating machinery, equipment) Public speaking Wearing personal protective equipment for the handling of hazardous materials

Radiation areas:	May be required to work in radiation areas under tightly regulated conditions Perform duties with and in an area where hazardous chemicals or materials are handled under tightly controlled safety conditions
Hours:	Willingness to work extended and varied hours based on operational requirements After hours work may be required for short and infrequent periods
Clearance requirements:	Satisfy ANSTO Security and Medical clearance requirements Maybe required to obtain and maintain appropriate federal government clearance

Workplace Health & Safety	
Specific role/s as specified in AP-2362 of the ANSTO WHS Management System	All Workers Managers / Leaders / Supervisors Other specialised roles identified within the guideline a position holder may be allocated to in the course of their duties

KNOWLEDGE, SKILLS AND EXPERIENCE

Band 6

1. Degree level engineering qualification **or** equivalent experience gained from within scientific infrastructure environment
2. An in-depth understanding of accelerator engineering and/or scientific and laboratory systems to an operational and diagnostic level.
3. Extensive experience developing techniques and equipment, conducting investigations, using advanced diagnostic equipment, and analysing diagnostic data to develop hypotheses.
4. Demonstrated extensive experience and expertise designing, installing, commissioning, and operating a variety of different instruments, plant, and systems often to solve high risk and high impact problems.
5. Significant prior experience troubleshooting complex multiple parameter instruments and systems and a proven ability to investigate and resolve problems within and outside your main field of qualification.
6. Demonstrated experience and proven success as the technical lead in the development of methodologies, techniques, engineering investigation or upgrade/enhancement projects.
7. Ability to lead and co-ordinate work activities of other staff to achieve effective outcomes.
8. Demonstrated experience providing technical leadership and coaching to technicians and engineers and external work experience personnel.
9. Demonstrated ability to undertake duties independently and expertly.

In addition to the required knowledge skills and experience above the Band 7 level will require:

1. Expert-level ability to design and implement system architectures involving diagnostics, remote controls, data acquisition, and interlock integration.
2. Recognised authority in identifying and resolving cross-platform infrastructure risks related to control systems, obsolescence, or digital integration.
3. Proven contribution to facility strategy through design foresight, scalable architecture development, and user-aligned engineering.
4. Established profile in national or international control system or scientific automation communities, contributing to best practice exchange and technology roadmap alignment.

VERIFICATION

This section verifies that the line manager and appropriate senior manager/executive confirm that this is a true and accurate reflection of the position.

Line Manager	**Delegated Authority**
Name:	Name: Ceri Brenner
Title: Head of Operations, CAS	Title: Director, CAS
Signature:	Signature:
Date:	Date:

CAS Systems Integration **Team Lead Linked Role (PD-2576)**

Band 6 to Band 7 Transition Checklist

Name:	
Commencement Date:	
Assessment Date:	

Note: Full written submission demonstrating and justifying how the employee meets the requirements must also be attached.

Requirements for transition	**Met Criteria**
Demonstrates leadership and independent delivery of complex Systems Integration development projects that support CAS facility operations.	Yes No
Leads the integration of control systems, diagnostics, and automation platforms into operational workflows across CAS accelerator and experimental systems.	Yes No
Provides authoritative technical oversight of instrumentation/software solutions, including design validation, safety assessment, and maintainability review.	Yes No
Identifies system-level risks (e.g., obsolescence, integration failure, downtime impacts) and implements mitigations through forward planning and upgrade strategies.	Yes No
Represents CAS technical capability in cross-functional forums (e.g., digital transformation planning, beamline control strategy, user program integration).	Yes No
Maintains and applies insights from professional networks and external partnerships to ensure CAS remains aligned with national and global best practices in control and automation.	Yes No
Coaches and mentors engineers and technicians across Systems Integration functions to build internal capability and resilience.	Yes No
Contributes to CAS-wide platform strategy and planning by identifying future infrastructure requirements and aligning system development to organisational objectives.	Yes No

Manager Recommendation:

I have reviewed the employee's competence in accordance with Linked Role PD-2576 and certify that the employee meets all requirements for transition and recommend transition from Band 6 to Band 7 be endorsed.

Manager Name:	
Signature:	
Date:	

General Manager Assessment

I have assessed the submission and confirm that the employee meets all requirements for transition from Band 6 to Band 7.

General Manager Name:	
Signature:	
Date:	