POSITION DESCRIPTION

Position Title:	Senior Controls Engineer
Cluster / Business Unit / Division	Clayton Campus
Section or Unit:	Controls & Scientific Computing Group
Classification:	Band 6
Job Family:	Engineering and Technical
Position Description Number:	PD-1851
Work Contract Type:	Professional/Technical
STEMM/NON-STEMM:	STEMM

POSITION PURPOSE

The Senior Controls Engineer is responsible for providing control system solutions that support the needs of the science teams through effective design, development, implementation, and support activities and expected to be developing skills in a specialist area of expertise.

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.

The Australian Synchrotron (AS) is a division within the Australian Nuclear Science and Technology Organisation (ANSTO) and one of the nation's premier science facilities that provides a vibrant focal point for researchers from Australia, NZ and further afield. The facility provides world-leading technical capability that delivers better and faster experimental techniques that enhance current fundamental and applied research. The facility promotes international collaboration to enable leading-edge R&D that will greatly benefit Australia and our regional neighbours.

The Controls and Scientific Computing team is responsible for enabling world-class synchrotron tools to support the Australian Synchrotron in achieving its objectives. High performance solutions come through the effective interaction of Controls and Computing with the Synchrotron's Engineering and Science teams. Controls and Computing ensures it is world-class by collaborating with peers in large science facilities nationally and internationally. Controls and Computing develops standards and specifications and engages external suppliers to provide optimal solutions. Where an appropriate solution cannot be sourced, the team designs solutions in-house.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities

- Manage projects that cover a broad range of control system activities to ensure timely delivery that meets expectations.
- Develop conceptual / detailed design; development and implementation of control systems across the facility and within the area of responsibility to provide functional and reliable control systems that support, the needs of the facility.
- Program, build or configure software that is used in the control systems using defined engineering processes and procedures.

- Perform an appropriate level of test and integration activities for the software and hardware systems deployed in the facility.
- Provide operational support by trouble shooting, diagnosing and solving problems with the installed control systems across the facility.
- Develop and communicate procedures and work instructions related to controls systems to ensure appropriate level of knowledge and skill is available to support key aspects of the control system.
- Develop and maintain collaborative relationships with subject matter experts at other comparable facilities and within industry to ensure the AS remains competitive internationally and fosters collaboration.
- Undertake additional duties as required and during period of leave of other staff.

Decision Making

This role makes decisions related to:

- Design / implementation / testing strategies. Guidelines exist for some standard procedures, but the role often involves developing new approaches and processes.
- Solving problems that have caused an immediate disruption to operations when on call and on-site.
- Choice of hardware components to purchase in accordance with standards.
- Sequencing work assignments to achieve desired priorities.
- Influence the decisions of group leaders/managers e.g., on appropriate resourcing of projects and solutions to problems.
- Daily delivery of knowledge specific to their area of expertise.
- 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

- Ensuring the successful implementation of strategic objectives and project completion whilst managing conflicting priorities and deadlines.
- Keeping abreast of recent developments in field, ensuring continual improvement and implementation of best practise.
- Improving customer service, response times and delivery efficiencies.
- Maintain effective relations and communication with clients, vendors, team members, engineers in other teams, and collaborators.
- Ability to communicate across engineering and scientific disciplines. Interpret scientific requirements and translate them to a control system specification.
- Develop, apply and maintain standard solutions.
- Provide solutions in a timely manner. Deployment of solutions is done during shutdown maintenance windows. Planning of work and your availability during these windows is essential.

KEY RELATIONSHIPS

Who	Purpose
Internal	
Principal Scientists, Group Leaders, Mechanical/Electrical Engineers, Technicians, Control Engineers (team)	• Regularly or more often to work collaboratively together on projects/provide advice and instructions on control systems, priorities where higher level input is required and to provide advice on technical feasibility/practicality on challenges relevant to their areas of responsibility
Scientists	• Frequently to discuss performance of control systems and develop requirements for new systems
Procurement Department	• To liaise for procurement as required

External	
Experts/colleagues at other facilities	• As required depending on requirements to maintain knowledge of technical developments at other facilities which may be relevant and transferrable. Seek and provide advice as required.
Specialist contractors/Suppliers	• Monthly or as required to seek specialist services or advice or to purchase specialist equipment

POSITION DIMENSIONS

Staff Data	
Reporting Line	Reports to the PLC Team Manager
Direct Reports	Nil
Indirect Reports	The role may be assigned a delivery / project team or an individual to deliver a scope of work and will be required to monitor progress, quality of work and take ultimate responsibility for the outcomes. Leadership responsibilities also extends to management and responsibility for contractors, interns, work experience students and their work.

Financial Data (2021/2022)
Revenue / Grants
Operating Budget
Staffing Budget
Capital Budget
Assets

Special / Physical Requirements	
Location:	Clayton Working in different areas of designated site/campus as needed
Travel:	May be required travel to ANSTO sites from time to time
Physical:	Office based physical requirements (sitting, standing, minimal manual handling, movement around office and site, extended hours working at computer) Labour intensive physical requirements (sitting, standing, frequent manual handling) Standing for long periods Frequent movements (climbing, stooping, kneeling, crouching, crawling) Public speaking Wearing personal protective equipment for the handling of hazardous and/or radioactive materials
Radiation areas:	May be required to work in radiation areas under tightly regulated 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

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

ORGANISATIONAL CHART

Ref AS Organisation Chart

KNOWLEDGE, SKILLS AND EXPERIENCE

Tertiary qualification (minimum Bachelor's degree) or higher level in an engineering discipline or equivalent qualification with a minimum of 5 years or more working experience in Control systems/PLC design.

Essential

- Experience designing and implementing distributed control systems.
- The ability to program in at least one programming language with exposure to low level device programming.
- Knowledge of data acquisition and real time control systems.
- The ability to perform and document design reviews relative to data acquisition and real time control.
- The ability to develop relevant working standards and instructions relative to control systems.
- The ability to quickly understand scientific concepts to a sufficient level to provide the support needed.
- The ability to communicate and collaborate with various technical groups, engineers, scientists, other experts in their field to gain accurate and relevant information.
- The ability to work autonomously or with limited supervision.

Desirable

- An engineering degree in either electrical, electronic, instrumentation or software.
- Experience in a science environment or light source facility
- Advanced skills in C/C++. Software development experience on Linux and/or PLC platforms.
- Experience with embedded controls, VME systems, motion controls, Instrumentation, PLCs, safety systems.
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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:	Bryce Karnaghan	Name:	Paul Martin
Title:	PLC Team Manager	Title:	Senior Manager, Controls & Scientific Computing
Signature:		Signature:	
Date:		Date:	

Appendix 1

ANSTO Job Families
Accounting & Finance
Administration
Communications & Marketing
Compliance & Regulation
Engineering and Technical
Human Resources
ICT & Digital Solutions
Information & Knowledge Management
Legal
Manufacturing
Monitoring & Audit
Operations
Organisational Leadership
Project & Program
Research
Science
Security & Intelligence
Senior Executive
Service Delivery
Strategic Policy
Trades & Labour