

POSITION DETAILS

POSITION TITLE	SENIOR SYSTEMS ENGINEER – CONDITION MONITORING
DIRECTORATE	Engineering & Maintenance
DIVISION	Major Works
REPORTS TO	Condition Monitoring Systems Manager
KIND OF EMPLOYMENT	Permanent Full Time
POSITION NUMBER	various
ANZSCO Code	263213
PCAT Code	1119192
Job Code	81000338
CLASSIFICATION	RC6
HEALTH ASSESSMENT CATEGORY	HAC: Category 3 Vision: Nil Hearing: Category 3
APPROVED BY	Deputy Executive Director Major Works
DATE APPROVED	October 2015
Agency Website	www.sydneytrains.nsw.gov.au

PRIMARY PURPOSE

Support Condition Monitoring project delivery by leading Systems Engineering and Engineering Assurance activities for systems or high complexity projects within a multidisciplinary environment to ensure that the overall integrated system solution meets business needs, is value for money, delivered with engineering due diligence in a timely manner.

Hold and exercise Engineering Design Approval Authority for Sydney Trains' Condition Monitoring systems.

Provide stewardship, technical leadership, engineering support and services on Condition Monitoring system assets throughout the system's lifecycle from conception to disposal including day-to-day technical management and operation of Condition Monitoring system.

ORGANISATIONAL ENVIRONMENT

Sydney Trains provides train services throughout the Sydney metropolitan area and was established in July 2013. Its vision is to keep Sydney moving by putting the customer at the centre of everything it does and delivering safe, reliable and clean rail services to the people of Sydney. The organisation is focused on providing sustainable, efficient and cost effective services.

KEY ACCOUNTABILITIES

1. Lead and direct trade studies/optioneering activities on Condition Monitoring system including the development of technical options, operations concept, system modelling, and concept evaluation leading to a technical solution recommendation that balances both technical and non-technical aspects of the solution.
2. Structure and manage System Engineering activities associated with performing Functional Analysis (e.g. functional tree, functions/component matrix, physical tree, and functional block diagram) on Condition Monitoring systems by validating system boundaries, internal and external interfaces, architectural functions, and mapping of architecture functions to sub-systems.
3. Lead and manage Condition Monitoring system integration design activities including technical requirements definition, logical decompositions, and system interface management to ensure effective and successful integration of Condition Monitoring systems with Sydney Trains' operational and corporate/business systems. Lead activities associated with Condition Monitoring project stakeholder expectation definition and management including identification of stakeholders, stakeholder requirements definition, conversion of stakeholder requirements into system technical requirements, and stakeholder requirements validation.
4. Develop and implement engineering assurance activities for Condition Monitoring systems including system engineering management plan (SEMP), system verification and validation plan, technical risk management, and system configuration management to ensure ongoing system integrity. Assess reliability, availability, and maintainability of both existing and new Condition Monitoring systems on a regular basis to identify issues or areas of potential improvements. Champion and implement continuous improvement initiatives to ensure continued optimal performance of Condition Monitoring system.
5. Lead and direct Maintenance Requirements Analysis (MRA) and Failure Modes Effect and Criticality Analysis (FMECA) and reliability analysis activities in developing Condition Monitoring system's Technical Maintenance Plans to achieve optimal system maintenance strategy. Provide engineering assurance input into Condition Monitoring project's acquisition strategy, procurement and contract management activities.
6. Lead and implement quality assurance processes, including internal audits and technical review gates (e.g. SDR, PDR, CDR) for Condition Monitoring systems work to ensure strict compliance with specifications and standards, Sydney Trains' Engineering Design and Configuration Management processes. Lead activities around engineering due diligence work for condition monitoring systems to ensure that the critical risks associated with the system are addressed using a reliable, diligent, and defensible approach.
7. Facilitate change management activities associated with commissioning of any new Condition Monitoring systems into operation by pro-actively engaging key stakeholders and monitoring system performance to ensure benefit realisation and system integrity.
8. Execute safety responsibilities, authorities and accountabilities consistent with Sydney Trains safety management system requirements which are defined in SMS document number SMS-02-RG-3058.

KEY RELATIONSHIPS

INTERNAL – across/within Sydney Trains

MAIN CONTACT and PURPOSE

- Engineering & Maintenance Directorate – to coordinate engineering requirements, coordinate design and other planning activities and to ensure specifications are in line with standards requirements
- Condition Monitoring Project Managers; Transport for NSW (TfNSW) - for collaboration, development and reporting

EXTERNAL – outside of Sydney Trains

MAIN CONTACT and PURPOSE

To provide to or receive information from:

- Office of the National Rail Safety Regulator (ONRSR)
- Australian Railway Association (ARA)
- Infrastructure owners (ARTC, QR, VIC Rail)
- Asset Standards Authority (ASA)
- Rolling Stock Operators (PN etc)
- Heritage Operators
- Standards Regulators and Test Houses.
- Rail Cooperative Research Centre (CRC)
- System Vendors & Suppliers

DECISION MAKING

The position is fully accountable for the formulation of advice and coordination across all operational objectives.

Independent decision making requirements of the position include:

- Engineering solution proposals and technical design

Collaborative decision making requirements of the position include:

- Engineering solution to be implemented

CHALLENGES

- Integrating Condition Monitoring system technologies into railway environment with relatively long asset life.
- Strict adherence to Engineering process while at the same time, delivering efficiency and setting a platform for increased commerciality

POSITION IMPACT

DIRECT REPORTS:	N/A
BUDGET (CapEx/Salary):	N/A

SELECTION CRITERIA

(include any required Licences or accreditation required by the position)

- Tertiary qualifications in the field of either Systems Engineering or Engineering Assurance, or in a similar field with this expertise.
- A minimum of three years' experience in practical application of Systems Engineering methodologies across system development life-cycle stages from requirements analysis to verification and validation.
- Demonstrated past experience in performing the following analysis (in the context of Systems Engineering) for a number of systems: Functional Analysis, RAMS analysis, and FMECA analysis
- A thorough knowledge of Systems Engineering frameworks, processes and Model Based Systems Engineering (MBSE) tools with UML or SysML
- Demonstrated experience in system stewardship role providing engineering assurance and recommendations covering both technical and non-technical aspects (e.g. commercial, contracts, maintenance) of the system.
- Recent experience with an Authorised Engineering Organisation (AEO), Asset Standards Authority (ASA), in transport, defence or aviation industries is desirable.
- Demonstrated interpersonal skills and collaborative approach working with a multi-discipline team in a highly dynamic environment.
- Strong oral/written communication skills, including the ability to prepare detailed technical specifications/documents and providing briefing to both technical and non-technical audience

PERFORMANCE STANDARDS

Dimension	Performance Level
SAFETY	<ul style="list-style-type: none"> Safety goals achieved through personal commitment, no harm to self or others & participation in safety initiatives Opportunities for continuous improvement identified and reported Competence for role is achieved through proactive self-development and training Hazard and incident elimination approached proactively Safety and management systems utilised for self and peers Safety procedures and practices implemented and applied
CUSTOMER	<ul style="list-style-type: none"> Agreed methods & measures followed and ensure reliable results for customers Customer expectations & service standards in the areas of timeliness, information, passenger safety & cleanliness understood and delivered within agreed timeframes Immediate customer satisfaction achieved through use of initiative Customer feedback used to influence process improvements
FINANCIAL	<ul style="list-style-type: none"> Reliable results achieved by utilisation of agreed methods and measures Improvements suggested and processes constructively questioned Cost savings achieved through effective use of resources Suggested improvements and constructively questioned processes to improve Targets, due dates and quality standards met
LEADERSHIP	<ul style="list-style-type: none"> Actively listened to and built positively on others' ideas Displayed fairness, exhibited trust and created real teamwork and sharing Business direction, team purpose and change agenda understood, agreed to and work activities aligned Sought formal and informal development opportunities for growth Proactively sought and maintained collaborative working relationships with peers and manager to deliver results Demonstrated awareness of relevant community issues

BEHAVIOURS

Critical behaviours	Behaviour Statement
SAFETY	<ul style="list-style-type: none"> Look out for your mates and customers and immediately raise awareness to any safety risks or hazards. Accept personal responsibility for your own safety, your team, and your customers. Follow safety rules
PRIDE	<ul style="list-style-type: none"> Take care of your kit and your workplace Wear your uniform or lanyard with pride Be ready to lend a hand to customers and team mates Share with others about what makes you proud to work here
ACCOUNTABILITY	<ul style="list-style-type: none"> Be on time. Follow through the promises you make Meet deadlines through careful planning Find the information you require to make a timely and informed decision.
COLLABORATION	<ul style="list-style-type: none"> Talk in a respectful and open way to customers and your team mates Provide and accept honest and constructive feedback from others Act with self-awareness of your impact to others
EXCELLENCE	<ul style="list-style-type: none"> Arrive prepared, informed and enthusiastic to deliver excellent customer service and results. Warmly greet and reach out to your colleagues and customers by anticipating their needs. Work hard to always do more than what others expect.