
SKA-Mid Head Of Science Operations (10218)

Job Location

Cape Town, South Africa

Area / Department

Telescope Operations

Contract Type

Permanent

Salary

ZAR 945,000 - 1,100,000 (basic salary) depending on experience, plus excellent benefits

Closing Date

30/11/2022

Ref No

10218

At the SKAO we are coordinating a global effort to deliver one of the largest science facilities on the planet. The SKAO telescopes will be next-generation instruments that will help to answer key questions in astrophysics, drive technological innovation and support human capital development.

More than a dozen partner countries and over a thousand scientists and engineers around the world are already on board, making the SKA project an international collaboration like no other, and one of the most ambitious science and engineering endeavours of the 21st century.

Headquartered in the UK, with telescope sites in Australia and South Africa, the SKAO will be one observatory operating two telescopes, an endeavour spanning three continents. Multinational by design, in early 2021 the SKAO became an intergovernmental organisation, one of only a select handful of science infrastructures to do so worldwide.

Construction activities for the SKAO's telescopes in Australia and South Africa started in 2021, along with a ramping up of SKAO staff in both countries. It is expected that the transition from the Construction Phase to the Operations Phase will happen around 2028.

SKAO Operations in South Africa will be conducted in partnership with the South African Radio Astronomy Observatory (SARAO). SKAO Operations in Australia will be conducted in partnership with the Commonwealth Scientific and Industrial Research Organisation (CSIRO). The Observatory will also partner closely with a global network of SKA Regional Centres through which astronomers will access science data products and a suite of tools and resources to further analyse the SKA telescopes' data.

For more information on the SKA project visit <https://www.skao.int/>

The SKA Observatory offers a competitive salary and a generous pension and benefits package. As an employee of an intergovernmental organisation, an appointee who is not a national of the country in which the role is based may be subject to personal Privileges and Immunities.

A unique opportunity for an experienced radio astronomer with significant Observatory experience to guide the operational planning and commissioning of the SKA-Mid Telescope and shape the strategic direction of the SKA-Mid Science Operations as we head towards full operations.

The Role

The SKA-Mid Head of Science Operations will be based at the Science Operations Centre in Cape Town and will be a core part of the SKA-Mid management team in South Africa, led by the SKA-Mid Telescope Director. They will work collaboratively with the Heads of Science Operations based in the UK and Australia to ensure that the SKAO delivers a coherent, efficient and effective science program.

With the SKAO now in its construction phase, planning for operations has entered an exciting period. Leading the SKA-Mid Science Operations Group, the SKA-Mid Head of Science Operations will make a significant contribution to refining the strategic direction of the group's activities, consistent with the SKA Observatory Establishment and Delivery Plan and the associated planning and policy development. The SKA-Mid Head of Science Operations will also work closely with the SKAO Commissioning team in the UK to deliver scientific commissioning and verification of SKA-Mid Telescope. Over time they will be responsible for the day to day science operations as the array is progressively handed over from construction.

SKAO is working in partnership with SRAO for the construction and operation of the SKA-Mid Telescope, and the SKA-Mid Head of Science Operations will be managing a team of both SKAO and SRAO employees.

Up to 25% of time in this role will be available for personal scientific research.

The successful candidate will have the inclusive and collaborative leadership skills needed to successfully build, manage and develop a team of operations scientists, telescope operators and data analysts in conjunction with the Science Operations teams in the UK and Australia. They will also have significant operational and scientific experience within the full range of activities required to run a successful radio observatory. This includes knowledge of the telescope systems, data processing and analysis as well as experience serving a diverse and distributed user community.

The successful candidate will draw on their standing in the international astronomy community and their established networks to be an effective point of contact for the user community, keeping them abreast of developments, gathering feedback and influencing where appropriate.

Due to the locations involved in the SKA project, in particular the UK and Australia, this role will require an ability and willingness to work outside normal hours from time to time. It will also require some domestic travel to the Karoo Site and occasional international travel.

In line with the SKAO commitment to become an employer of choice for women in STEM we strongly encourage applications from women for this role. We offer family friendly policies and the ability to work flexibly to support this aim. Those applicants wishing to explore flexible working are openly encouraged to discuss their individual need for flexibility or specific working patterns during the recruitment process.

Key Responsibilities, Accountabilities and Duties

- Continually refine and provide input to the strategic direction of the SKA-Mid Science Operations team to support the SKAO in the delivery of an efficient and effective science program.
- Recruit and manage a high performing and inclusive team of operations scientists, telescope operators and data analysts, and ensure the development of the Science Operations Group, motivating and mentoring staff to meet the current and future requirements of the Observatory.
- Collaborate closely with SARAo in the management and development of SARAo-employed staff in the Science Operations Group.
- Work as one of the senior staff of the SKAO in South Africa, as part of the SKA-Mid Management Team, contributing to the overall operations of SKA Mid.
- Work collaboratively with the Heads of Science Operations in the UK and Australia through a Science Operations functional group to deliver a cohesive Science Operations vision. This is likely to require some travel to both GHQ in the UK and the SKA-Low Science Operations Center in Australia.
- In collaboration with the Science Operations team in the UK, make a leading contribution to the development and continual refinement of the Mid operations, commissioning and science verification plans, and in defining the requirements for early array releases and test procedures.
- Lead the SKA-Mid Science Operations Group in their contribution to SKA commissioning, working with the commissioning team in the UK.
- Implement and effectively deliver SKA-Mid science verification and operations, as the arrays are handed over from construction to operations.
- Effectively interface with the SKA user community, promote SKAO activities, gather community feedback, influence where appropriate, and facilitate appropriate support through the SKAO Helpdesk and other activities.

- Take a leading role directing the development of software required for Science Operations (controls, data acquisition, observation management), and make requests for new features, some of which may be telescope specific.
- Work closely with engineering teams to monitor and evaluate telescope performance to ensure agreed SKA data quality standards are met.
- Support SKAO-specific SKA Regional Centre operations and serve as point of contact for the local SKA Regional Centre.
- Optionally undertake a programme of personal scientific research up to 25% of employed hours and appropriately enable other science-focussed staff to do the same.
- Communicate openly, effectively and respectfully with internal and external stakeholders in the interest of good business practice, collaboration and enhancement of SKAO's reputation.
- Undertake other reasonable duties as directed by the SKA-Mid Telescope Director.

Mandatory Knowledge, Skills and Experience

- A PhD in astronomy, physics, engineering or another closely related and relevant field.
- Internationally recognised expertise in radio astronomy techniques including in the acquisition, reduction and analysis of interferometric data.
- Significant professional experience in the operations of large-scale astronomical facilities.
- Leadership skills with experience in all aspects of people management (e.g. recruitment, capability development, performance management), promoting diversity and developing an inclusive, high-performing culture. Experience in a telescope operations leadership position would be an advantage.
- Experience working with and influencing a diverse and globally distributed telescope user community and providing appropriate user support.
- Ability to work effectively with engineers and scientists from a variety of cultures, and to lead and influence people in widely differing parts of a complex and rapidly changing organisation.
- Effective oral and written communication skills in English.

Please be sure to address how you meet each of these requirements in your cover letter.

Desirable Knowledge, Skills and Experience

- Experience commissioning radio astronomy (or similar) instrumentation and capabilities.
- A demonstrated commitment to equitable practices, including accessibility, to facilitate the broadest possible access to the Observatory from the scientific user community.
- Experience managing or working as part of a geographically distributed team.
- Willingness and ability to travel nationally and internationally as required.

Equality Diversity and Inclusion Statement

SKA Observatory recognises that our diversity is a strength. We aim to create a welcoming and inclusive environment where everyone feels they belong, and diverse perspectives and ideas thrive. As such, Equality, Diversity, and Inclusion are at the core of SKA Observatory's agenda.

Our aim is to recruit and retain the most talented individuals, regardless of gender, race, disability, age, sexual orientation, marital status, religion, nationality or background.

Women have traditionally been under-represented in the fields of science and engineering; SKA Observatory welcomes and encourages female applicants.

Where applicants with a disability need facilities or adjustments to enable them to participate in the recruitment process, these will be provided.

SKA Observatory welcome all candidates, especially those from member countries.

The "How to Apply" information contained within the SKA Observatory recruitment portal provides more detail regarding our application and selection approach.

Product Assurance Engineer (10224)

Job Location

Cheshire, UK (Head Office)

Area / Department

Engineering

Contract Type

Permanent

Salary

GBP 45,000 - 55,000 depending on experience, with excellent benefits

Closing Date

25/11/2022

Ref No

10224

At the SKAO we are coordinating a global effort to deliver one of the largest science facilities on the planet. The SKAO telescopes will be next-generation instruments that will help to answer key questions in astrophysics, drive technological innovation and support human capital development.

More than a dozen partner countries and over a thousand scientists and engineers around the world are already on board, making the SKA project an international collaboration like no other, and one of the most ambitious science and engineering endeavours of the 21st century.

Headquartered in the UK, with telescope sites in Australia and South Africa, the SKAO will be one observatory operating two telescopes, an endeavour spanning three continents. Multinational by design, in early 2021 the SKAO became an intergovernmental organisation, one of only a select handful of science infrastructures to do so worldwide.

Our Global HQ is located near the buzzing city of Manchester at the historic Jodrell Bank Observatory, a UNESCO World Heritage site located in the Cheshire countryside. It is home to a rapidly expanding international team of more than a hundred, working in a highly collaborative and inclusive way, in coordination with SKAO teams in Australia and South Africa as part of a global astronomy and engineering community.

Being part of Team SKA means contributing to something extraordinary: a uniquely exciting project to advance human knowledge that will last for decades. In return, we offer a diverse multicultural working environment, 30 days annual leave plus public holidays, a generous pension scheme, visa and support with relocation (if applicable), regular social events, a family-friendly environment and much more. Come and join us!

An ideal role for a candidate with experience in developing and implementing quality assurance plans on major capital projects, able to influence stakeholders to ensure customer requirements and applicable standards are met.

The Role

The SKAO Product Assurance team is responsible for the definition and implementation of the quality assurance and control activities for the MeerKAT Extension and SKA Projects. The MeerKAT Extension Project will construct and incorporate 20 radio dishes into the now operational MeerKAT telescope (currently consists of 64 radio dishes and it is a precursor to the SKA Telescope). The Extended MeerKAT will be used to perform science program during the time leading up to the MeerKAT integration into the SKA Telescope.

Reporting to the Product Assurance Manager, the Product Assurance Engineer will be responsible for the practical implementation of the quality assurance requirements of the SKA project, providing regular updates to the project team. This requires regular contact with the contractors to review and evaluate their work outputs at the different stages of the contract to ensure that they follow the processes defined in their quality plans; their solutions comply with requirements, applicable standards and regulations; and enlist the support of Subject Matter Experts as needed when carrying out these activities. Thus, the Product Assurance Engineer plays a major role in assuring the quality of the delivered products and their subsequent integration into the SKA Telescope system.

The Product Assurance required for SKAO will involve several challenges which are unique to research infrastructures. The successful candidate will rise to these challenges and overcome them to help deliver a world leading science facility. This will require good

problem-solving skills, flexibility and adaptability to the ways of working in a research environment in order to come up with innovative theoretical ideas to problems and translating them to practical solutions for implementation.

The Product Assurance Engineer will be based at the SKAO headquarters in the UK but will also work in the field at contractors sites, the SKAO test facilities and the Telescope construction sites. Therefore, regular international travel to these sites will be required. Some duties may require occasional extended stays of up to 4 weeks in host countries, subject to visa requirements.

SKAO is committed to providing a flexible working environment meeting the requests of our Colleagues whilst also fulfilling the needs and objectives of the Observatory. We encourage open conversations during the interview and application process in relation to any specific requirements, and later with line managers to assess individual flexible working arrangements alongside the needs of the organisation and responsibilities and accountabilities of the specific role and team.

Key Responsibilities, Accountabilities and Duties

Quality Management System

- Contribute to the development of each Statement of Work to ensure quality requirements are clearly specified in contracts
- Review contractors' quality policy statements and plans to enable the Project Managers to accept them
- Monitor the implementation of the contractors' quality plans
- Work with Subject Matter Experts, Project Managers, and Contractors to identify critical items and raise early warnings, and follow up with their resolution
- Liaise with the Project Managers to ensure relevant disciplines - especially in specific risk areas - are available on the client side to support the quality assurance activities
- Regularly report to the project team on the overall implementation of the contractors' quality plans
- Lead the conduct of Quality Audits of allocated contracts and support other Product Assurance team members with the conduct of their audits
- Convene and/or attend and minute meetings including Early Warning meetings where related to product quality
- Log Learning from Experience (LfE) for all activities and ensure they are embodied in entry criteria into all reviews
- Maintain quality records that include contractor's progress records including where applicable imagery

Tests and Inspections

- Review contractor's test and inspection plans

- Clarify with the contractor those products which the scope states are to be tested or inspected before receiving and delivery to working areas
- Ensure that off-site tests or inspections are passed before items are delivered
- Identify and clarify with the contractors the standards to be applied in the manufacture, assembly, integration, inspection and test activities of the project
- Carry out planned mandatory inspections to assess the manufacturing, assembly, integration, inspections and test operations that are performed by the contractors to ensure they comply with the quality requirements, applicable standards and regulations
- Incorporate the considerations of SKA Safety Management in the scrutiny of test and inspection results
- Monitor, witness and report on tests and inspections activities
- Advise the Project Manager on the outputs of test and inspection activities that might affect payments and completion

Defect Notifications

- Notify contractors of nonconformances and defects
- Ensure all nonconformances are timely resolved in accordance with the agreed non-conformance management process
- Ensure the Defects Register is up to date throughout the duration of the contract
- Advise the Project Manager regarding the acceptance of defects and uncorrected defects
- Issue Defects Certificate

Mandatory Knowledge, Skills and Experience

- Degree in manufacturing engineering or related disciplines, or equivalent experience
- Experience in carrying out quality assurance related activities on major capital projects (typically at least three years)
- Demonstrable understanding of one or more of both mass production and bespoke manufacturing processes that pertain to electronic equipment, civil works, plant/machinery, large fabricated structures and distribution systems (power, data, fluids)
- Experience of planning and carrying out of test and inspections on equipment and systems
- Experience of safety management systems
- Knowledge and implementation of ISO 9001 (or equivalent) in major capital projects
- Strong willingness to develop and maintain own knowledge in the area of quality assurance and control
- Ability to listen and communicate effectively, verbally and in writing
- Ability to influence and change behaviour of internal and external stakeholders
- Self-motivated problem-solver, proactive and flexible team player who is adaptable to change
- Ability and willingness to travel extensively, including for possible extended stays of up to 3 months in Australia and South Africa (subject to visa limitations)

Desirable Knowledge, Skills and Experience

- Knowledge of working in the space or research infrastructure (preferably astronomy) industries
- Knowledge of the design and production of specialist scientific equipment such as cryogenics
- Understanding of systems engineering processes and familiarity of ISO/IEC/IEEE 15288 standard
- Understanding of agile software development processes
- Quality Assurance certifications
- Knowledge of NEC4 contracting
- Knowledge and experience of Contract Event Management and Reporting (CEMAR) tool
- Membership of, or eligibility for membership of, recognised national or international organisations such as International Register of Certificated Auditors

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Women have traditionally been under-represented in the fields of science and engineering; SKA Observatory welcomes and encourages female applicants.

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Junior Software Project Manager (10226)

Job Location

Cheshire, UK (Head Office)

Area / Department

Project Management

Contract Type

Permanent

Salary

GBP 34,000 - 43,000 depending on experience, with excellent benefits

Closing Date

25/11/2022

Ref No

10226

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Being part of Team SKA means contributing to something extraordinary: a uniquely exciting project to advance human knowledge that will last for decades. In return, we offer a diverse multicultural working environment, 30 days annual leave plus public holidays, a generous pension scheme, visa and support with relocation (if applicable), regular social events, a family-friendly environment and much more. Come and join us!

An exciting opportunity for a Junior Project Manager to join an international team and support the delivery of SKAO Software for the largest radio telescopes on the planet.

The Role

The SKAO Project Managers form the primary managerial link between the SKA Observatory and the contractors and consultants based in the member countries of the Observatory to ensure successful project delivery and, ultimately, scientific outcomes.

The Junior Software Project Manager will be working in a diverse, international team and will be supported in developing their knowledge and skills by being exposed to the complexities of the SKA project and the techniques required to manage it. The Junior Software Project Manager will have autonomy in the work assigned, but will also be supported to grow professionally while contributing to achieving the SKAO objectives. Formal and informal training opportunities are available in respect to NEC4 contracts, relational contracts, SAFe, PM qualifications, and specific tools.

Reporting to the Software Project Manager, the Junior Software Project Manager will contribute to the delivery of the SKA Software, including the software that prepares and manages the observations executed by the Mid and Low Telescopes and the associated data processing.

The role will be based at the SKAO Headquarters at the iconic Jodrell Bank, Cheshire, UK, and will require some international travel to contractors and SKAO offices (typically for one week, every 3 months).

SKAO is committed to providing a flexible working environment meeting the requests of our Colleagues whilst also fulfilling the needs and objectives of the Observatory. We encourage open conversations during the interview and application process in relation to any specific requirements, and later with line managers to assess individual flexible working arrangements alongside the needs of the organisation and responsibilities and accountabilities of the specific role and team.

There may be occasions where this role requires the post holder to work across different time zones and, in line with SKAO policy, flexible working hours will be supported in agreement with the line manager.

Key Responsibilities, Accountabilities and Duties

- Participate in the delivery of distinct software elements and contribute to the delivery of the whole SKAO Software, ensuring that legislation, policy and frameworks are adhered to.
- Oversee the work of a number of contractors and/or stakeholders central to the successful delivery of the SKAO Software.
- Identify and assess potential safety implications of proposed activities, taking the relevant corrective action or escalating to the relevant manager to ensure a safe and secure working environment for all.
- Build and maintain working relationships with contractors to ensure maintenance of data integrity. This may include the monitoring of progress according to the software development processes and/or against roadmaps, schedule, budget and earned value.

- Support tender, evaluation processes for elements of work packages, complying with organisational procedures to select suppliers.
- Utilise established systems to track key programme/project metrics, benefits, budgets, risks and highlight variances/trends in order to support the management of the SKAO software development and the governance of its associated contracts.
- Adapt project management procedures to fit with SKAO software development processes to support continued improvements, performance and efficiency.
- Contribute to the development and implementation of continuous improvements in project management and software development processes.
- Communicate and liaise with internal and external stakeholders to help them understand project objectives and progress, and support effective collaboration.

Mandatory Knowledge, Skills and Experience

Hard skills

- Relevant university degree or equivalent experience.
- Project Management qualification or training with good understanding of project management methodologies, including but not limited to EVM, Risk and Schedule management.
- Excellent ability of working with common IT and Project Management tools, including, but not limited to: Google suite (Drive, Docs, Sheet,), Primavera P6, Confluence, Jira.
- Experience of working in a project management or in a project support role in a science or engineering-based project (typically at least two years) where software development represented a significant fraction of the scope of deliverables.
- Good understanding of modern software development practice.
- Basic knowledge of contract management and procurement procedures.

Soft skills

- A team player who is comfortable with taking initiatives and withstand ambiguity associated to continuous process improvements.
- Ability and willingness to proactively continuously learn and put their experience at the service of the project.
- Good analytical and autonomous problem-solving skills, with the ability to gather data and use this to inform understanding, decision and action.
- Positive attitude towards stakeholders and stakeholder management.
- Availability to work with geographically distributed teams.
- Effective oral and written communication skills in English.

Desirable Knowledge, Skills and Experience

- Experience of working within multi-disciplinary, multi-national projects with team members in different time zones; working for an IGO and/or in the astronomy field.
- Experience working on projects that include a high degree of technology and software development; experience/qualification with the Scaled Agile Framework®.
- Experience of projects implementing hybrid agile/waterfall solutions.
- Fluent in one or more language other than English.
- Experience in NEC4 contracting and/or relational contracts and/or dealing with in-kind contributions.
- Ability and willingness to travel internationally as required.

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