

**SKA ORGANISATION
BASED JODRELL BANK, UNITED KINGDOM
Engineering Project Manager
Application deadline: 11th December 2014**

Competitive Salary and Flexible Benefits

Job Title: Engineering Project Manager

Reference: EPM/14

Reports To: Head of Project

Location: Jodrell Bank Observatory, Cheshire, UK

Closing Date for applications: Closing date for receipt of completed applications is 11th December 2014. For details of how to apply please see below.

Submission of applications: Email to jobs@skatelescope.org

Organisation Background

The Square Kilometre Array (SKA) is a global project to build a multi-purpose radio telescope that will play a major role in answering key questions in modern astrophysics and cosmology. It will be one of a small number of cornerstone observatories around the world that will provide astrophysicists and cosmologists with a transformational view of the Universe. The SKA will be constructed in two distinct phases. The major science goals for the first phase, SKA1, will be to study the history and role of neutral Hydrogen in the Universe from the dark ages to the present-day, and to employ pulsars as probes of fundamental physics.

Since 2008, the global radio astronomy community has been engaged in the development of the SKA as a major part of the 'Preparatory' phase of the project. The Preparatory phase ended in December 2011 and, following a number of major changes, the international SKA project has now progressed to the 'Pre-Construction' phase (2012-15) with the establishment of a new legal entity, the SKA Organisation, on 14 December 2011. Eleven countries are now participating in the project, with others engaged in discussions concerning possible membership. The SKA Organisation is now headquartered in a purpose-built building at Jodrell Bank Observatory in Cheshire, UK.

General Description

The Office of the SKA Organisation ("SKA Office") will lead the SKA system design and oversee the supporting developments and designs within the globally distributed SKA work packages (WPs). To accomplish this goal the SKA Office will employ highly qualified scientists, project managers, system engineers and domain specialists. Work packages for the design of the major SKA subsystems (Elements) are contracted on a small number of work package consortia who are responsible for the management, execution and delivery of the work packages. The technical strategy and philosophy of the project are strongly based on system engineering principles.

SKA Organisation is overseen by a Board of Directors comprising of two Directors from each of the member nations. The Board maintains a close relationship with the work of the SKA Office, it meets 3 to 4 times a year and there is a frequent need for the provision of papers and other communications on a range of issues, both at the time of Board meetings and out of session.

Job Description

The SKA Office Engineering Project Manager will report to the SKA Head of Project and will be responsible for the follow-up of the design work undertaken for a particular Element of the SKA. The Project Manager will provide updates to the schedule planning and costs, will manage the specifications and statements of work for the design activities.

Within the SKA Office the Project Manager will work closely with the relevant SKA Office engineers, system engineers and domain specialists. As a team they will work and interact very closely with their counterparts within the management and technical team(s) of the relevant Work Package Consortium(s). The Project Manager will have authority of the costs and resources allocated within the SKA Project Office for the execution of the particular design activity.

The Project Manager will ensure that the SKA Element project management products delivered by the Work Package Consortium(s) are coherent with overall SKA Office project requirements and will be responsible to integrate these products into the project level tools and systems.

Although the primary focus of the Project Manager will be the management effort of the particular SKA Element, he/she will also be required to actively participate and support the SKA Head of Project in all aspects of the overall project management.

As Project Manager of engineering teams it will be expected that the post-holder will have domain expertise/knowledge within one or more of the critical technology areas of the applicable SKA Element.

Because of the distributed nature of the SKA the communication and interaction with the work package consortia and precursors/pathfinders project managers, communication will be an important aspect of the Project Manager's responsibilities.

All Engineering Project Managers have common duties and responsibilities, which are detailed below. In addition to these the Engineering Project Manager is assigned to, and responsible for, one or more of the following specialisations:

- Central Signal Processing (CSP)
- Aperture Arrays (AA)
- Signal and Data Transport and Synchronisation and Timing (SaDT)

The key responsibilities, accountabilities and duties, and the essential and desirable knowledge, skills and experience criteria (below) cover all of the above assignments.

Key Responsibilities, Accountabilities and Duties

The key responsibilities, accountabilities and duties for the Engineering Project Manager include:

- The maintenance of agreements and/or contracts including the management and finalisation of amendments in accordance to approved processes.
- Attendance and participation in regular progress meetings and technical reviews.
- Collaborate with the work package consortium project manager(s) to ensure:
 - Effective planning and scheduling of the applicable SKA Element,
 - Management and reporting against the schedule,
 - On time and within budget, high quality delivery and review of the deliverables,
 - Delivery of project control information for the integration and maintenance of the project control and reporting system within the SKA Office,
 - Monitoring, integration and reporting of the risk management activities.
- Management of the applicable Element change requests as required,

- In collaboration with the system engineer(s) assist and guide the applicable work package consortium to plan and execute prototyping programmes to ensure maximum value to the SKA.

Essential Knowledge, Skills and Experience

You will have:

- University degree in Physics or Engineering, another closely related and relevant field, or equivalent expertise.
- A proven record and demonstrated ability to manage and deliver outcomes in medium to large complex projects.
- Demonstrated knowledge of international project management standards and the application thereof.
- Demonstrated knowledge of the management of system engineering based projects; And/Or
 - Demonstrated knowledge of the management of software based system engineering projects.
- Demonstrated technical knowledge in one or more of the critical technology areas of the following SKA Elements:
 - Central Signal Processing
 - Large signal and data transport networks and network topologies, fibre transmission technologies, and/or synchronisation and timing networks for large distributed systems.
 - Aperture Arrays
- Good oral and written communication skills and the ability to influence people in widely differing parts of a complex organisation.
- Strong ability to work with staff and teams from diverse cultural backgrounds.
- Willingness to present the SKA Office in international and other forums and willingness to travel to SKA consortium locations and centres.
- Membership of, or eligibility for membership of, recognised national and international project management institutes.

Desirable Knowledge, Skills and Experience

The following competencies are desirable:

- Experience in project management in a research or scientific environment may be considered an advantage.
- Experience in project management in a radio astronomy environment will be considered an advantage.
- Experience in software project management in a research or scientific environment may be considered an advantage.
- Experience in software project management in a radio astronomy environment will be considered an advantage.
- Industry experience, and/or a track record in successful collaborative links with industry.
- Familiarity with the formalism for, and requirements of, quality control environments such as ISO9000.

Potential Assignment Details

EPM: Central Signal Processor (CSP)

The effort within this Element of the SKA will cover various disciplines and technologies of digital processing systems including the hardware and associated firmware/software necessary for the

generation of visibilities, pulsar survey candidates and pulsar timing from the SKA telescope receptor arrays.

EPM: Signal and Data Transport and Synchronisation and Timing (SaDT)

The effort within this Element of the SKA will cover various disciplines and technologies of signal and data transport and synchronisation and timing systems including all hardware and software necessary for the transmission of data and information between the Elements of the SKA and the generation and distribution of timing signals throughout the SKA.

EPM: Aperture Arrays

The effort within this Element of the SKA will cover various disciplines and technologies for the low frequency aperture array front end of the SKA including the local station signal processing and hardware required to combine the data from the antennas, and the transport of this data to the aperture array station processing.

For more information on the SKA project visit <http://www.skatelescope.org>. The SKA Organisation offers a competitive salary, a generous company pension scheme, annual bonus and a flexible benefits package. The successful applicant's workplace will be located at the SKA Office's new headquarters in Jodrell Bank Observatory.

How to apply

Please send a CV and covering letter, including details of your current remuneration, to jobs@skatelescope.org, quoting reference EPM/14. Applications should include a summary of your project experience, **detailing how you meet the essential and desirable knowledge, skills and experience criteria**, and the names of at least three professional referees, one of whom must be your current employer (or most recent employer if not currently working). Closing date for receipt of applications is 11th December 2014.

When applying please state where you saw the vacancy advertised.

Equal Opportunities Statement:

SKA Organisation is committed to being an equal opportunities employer. Our aim to is recruit and retain the most talented individuals, regardless of gender, race, disability, age, sexual orientation, religion or nationality.

At all stages of the recruitment process and beyond, we strive to treat applicants and employees with a high standard of care, honesty and politeness.

Women have traditionally been under-represented in the fields of science and engineering; SKA Organisation 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. If you need equipment or adjustments to enable you to complete your application and/or attend an interview then please let us know.