SKA ORGANISATION
Job Particulars
SKA Computing Lead
Application deadline: 30th September 2015

Competitive Salary and Flexible Benefits

Job Title: SKA Computing Lead
Reference: CL/01
Reports To: SKA Project Engineer

Closing Date for applications: Closing date for receipt of completed applications is 30th September 2015. 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 (2012-17) with the establishment of a new legal entity, the SKA Organisation, on 14 December 2011. Ten governments are now participating in the project, with others engaged in discussions concerning possible membership. The SKA Organisation is headquartered in a purpose-built building at Jodrell Bank Observatory in Cheshire, UK.

General Description
The Office of the SKA Organisation ("SKA Office") leads the SKA system design and oversees the detailed design being undertaken within the globally distributed SKA work packages (WPs). To accomplish this goal the SKA Office employs highly qualified scientists and engineers, project managers and system engineers. Work packages for the major SKA subsystems (elements) are contracted to 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.

The Role

The SKA Engineering team are staff with extensive experience in a particular field of interest to the SKA. They may cross work breakdown structure boundaries and advise more than one work package manager. They support the SKA Project Engineer in the generation of the top level requirements and engineering activities. Domain specialists provide engineering performance analysis as well as costing and other information to work package managers.

The SKA Computing Lead is a domain specialist, a technical hands-on leader, but with additional broader duties. The SKA Computing Lead will have significant experience and expertise in some or all of definition, design and implementation of common computing architectures, imaging processing and/or calibration algorithms, monitoring and control systems and data management. The SKA Computing Lead will be the key source of computing knowledge and expertise within the SKA Office.

The ideal candidate will be familiar with methods and algorithms used in radio astronomy imaging and/or in the real-time aspects of controlling a complex radio telescope system. In addition to the Key Duties outlined below, it is expected that the SKA Computing Lead will engage in design work with the Science Data Processor and Telescope Manager consortia.

Key Duties, Accountabilities and Responsibilities

Under the direction of the SKA Project Engineer the postholder will:

- Provide technical leadership in their area of domain expertise.
- Support the SKA Project Engineer in the generation of the top-level requirements, design and any re-baselining activities.
- Provide engineering performance analysis as required.
- Provide updates and reports as necessary.
- Work with Work Package Consortia (WPC), the Science Data Processor and Telescope Manager in particular, as appropriate to provide guidance, advice and technical assistance in their domain area of expertise.
- As required, engage in WPC and other reviews in their areas of expertise, or if required, in other areas.
- As required, contribute significantly to the design work undertaken in their domain area of expertise.
- Participate in team projects, and to provide specialist assistance to working groups, colleagues and WPCs.
- Travel, as required, to any of the SKA countries.
- As required, provide advice and guidance to SKA Office Project Managers and System Engineers.
- Undertake training in the financial, occupational health and safety, and human resource management procedures applicable to the SKA or its partners.
- Undertake any other reasonable duties as directed by the post holder's line manager or a member of SKA Organisation Senior Management Team.

Mandatory Qualifications, Experience and Knowledge:

- Recognised university degree-level education/training in engineering or physical sciences.
- Analytical skills: experience with analysis/simulation, design tools and programming languages.
- Experience with design in the relevant field of specialty.
- Good English oral and written communication skills.
- Experience in presenting work orally at meetings and other forums.
- Specialist knowledge, encompassing design and application, of the relevant field of specialty.
- Specialist knowledge and experience in a solid subset of the following, and working knowledge of the others, unless otherwise specified:
    - Extensive experience in the design, definition and implementation of
        - Common computing architectures
        - Imaging processing algorithms

        - Calibration techniques and algorithms
        - Data management, data archives and data analytics methods
    - Familiarity with monitoring and control systems for complex scientific instruments
    - Familiarity with state-of-the-art radio telescopes
    - Familiarity with the theory and practice of radio interferometry
    - Familiarity with astronomical observation management and observatory operations processes
    - Knowledge and practical experience of parallel processing techniques and High Performance Computing and Cloud Computing.

Desirable Qualifications, Experience and Knowledge:

- 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.

For more information on the SKA project visit http://www.skatelescope.org. The SKA Organisation offers a competitive salary, a generous company pension scheme and a flexible benefits package. The successful applicant's workplace will be located at the SKA Organisation's Global 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 CL/01. 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 30th September 2015.

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.