# Scientist (10152)

**Job Location**

UK (Head Office)

**Area / Department**

Science

**Contract Type**

Permanent

**Salary**

Competitive salary with generous pension, healthcare and leave benefits

**Closing Date**

30/11/2021

**Ref No**

10152

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, regular social events, a family-friendly environment and much more. Come and join us!

An amazing opportunity for a Scientist to join a multicultural, international team and contribute to next breakthrough in radio astronomy.

## The Role

The Scientist's role will be to champion and safe guard the scientific capabilities and accomplishments of the SKA Observatory.

The scientific interests and priorities of the community are channelled into the current SKAO design and potential future upgrades. The role entails optimally engaging the science user community throughout the construction, commissioning and operational phases. It is expected that SKAO Scientists are active researchers, with an interest in the key science areas to be explored by the SKAO.

The Scientist will report to the SKAO Director of Science and will be part of the wider SKAO Science Team. They will be expected to engage with the global science community and serve as advocates of the SKAO within both the radio astronomy and the broader astronomical community, and provide a conduit to understand and contribute to the science goals of the SKAO.

In line with our Flexible Working Policy, flexibility around working hours may be accommodated in agreement with the Line Manager where operationally viable, ensuring telescope delivery is not impacted.

## Key Responsibilities, Accountabilities and Duties

* Lead the development and verification of the SKAO science requirements and play a major role in the  commissioning of the telescopes
* Lead the development of Science Data Challenges that effectively engage the community prior to the SKAO commissioning phase
* Provide the scientific oversight in the process of translating scientific goals into  technical requirements
* Engage and work with the SKAO Engineering and Operations teams to ensure that the SKAO will  deliver maximal science within the boundaries and constraints of the project
* Engage and communicate effectively with the globally distributed scientific user community
* Travel nationally and internationally as required (typically with up to one week, up to 6 times per year)
* 25% of time will be available for personal research

## Mandatory Knowledge, Skills and Experience

* A PhD or equivalent in astronomy, physics or a closely related field
* Research experience at postdoctoral level
* Experience with large astronomical science projects
* Ability to form an effective interface between science and engineering teams
* Good communication skills
* Ability to present  work in international and other  forums
* Ability to work effectively with scientists from a variety of cultures
* A flexible team player who is adaptable to change
* Ability and willingness to travel nationally and internationally as required and when possible in the context of any international travel restrictions (typically with up to one week, up to 6 times per year)

## Desirable Knowledge, Skills and Experience

* Experience with state-of-the-art simulations of data products
* Effective scripting and programming skills

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# Project Controls Manager (10153)

**Job Location**

UK (Head Office)

**Area / Department**

Engineering and Project Management

**Contract Type**

Permanent

**Salary**

Competitive salary with generous pension, healthcare and leave benefits

**Closing Date**

24/10/2021

**Ref No**

10153

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An amazing opportunity for a Project Controls Manager to join a multicultural team and contribute to the delivery of one of the largest scientific facilities on earth.

## The Role

The Project Controls Manager is a key member of the Project Management Group who leads the project controls team, and are responsible for maintenance of the project management control system including scheduling, earned value management, budgeting, risk and change control, ensuring storage and retrieval of schedules, cost and related planning data and produce the monthly report.

The Project Controls Manager will report to the Head of Project Management and will manage the project control team, working closely with the project managers within the group and other managers, engineers and support staff across the organisation.

In line with our Flexible Working Policy, flexibility around working hours may be accommodated in agreement with the Line Manager where operationally viable, ensuring telescope delivery is not impacted.

## Key Responsibilities, Accountabilities and Duties

The Project Controls Manager will perform the following functions directly or via their team:

* Line manage the Project Control team formed of three analysts responsible for specific controls, leading and developing this team to provide a high-quality service;
* Maintain the SKAO Construction project management baseline (work breakdown structure, integrated project schedule and budget) in the project management control system (PMCS), implementing change via the agreed process;
* Maintain the project risk register, contingency log and project change request log;
* Facilitate regular status reviews with the project managers to ensure accurate, up to date information is captured in the PMCS and above logs. This includes progress against the schedule, actual costs vs budget, earned value, risk and issue updates, change requests and contract status;
* Produce regular and ad-hoc reports on the performance of the project, meeting the needs of the key internal and external stakeholder groups, such as the Programme Directorate, the Council Finance Committee, and Science & Engineering Advisory Committee;
* Support the project managers in effective use of the PMCS processes and tools, providing training and further developing the PMCS in response to project needs;
* Support the Head of Project Management and the Head of Mission Assurance in project assurance activities;
* Contribute to the SKAO procurement activities by advising project managers on the schedule, budget and scope parts of the contract documentation;
* Manage and further develop the PMCS, maintaining the schedule, budget, cost, risk and scope data via regular reviews with the project managers;
* Occasional national or international travel (typically 1-2 times per year).

## Mandatory Knowledge, Skills and Experience

* Experience in planning, tracking and reporting on large projects, programmes or portfolios;
* Proficient in the use of project management tools for at least some of the following: scheduling, earned value management, risk management, change control and/or cost control;
* Experience in leading a team;
* Experience of working collaboratively in a multicultural, multinational environment;
* Proficient user of the MS Office suite;
* Good English verbal and written communication skills;
* Recognised university degree-level education or equivalent training or equivalent experience;
* Project management qualification, certification or training;
* Proactive approach with the ability to grow in an evolving organisation;
* A flexible team player who is adaptable to change;
* Ability and willingness to occasionally travel nationally and internationally as required and when possible in the context of any international travel restrictions (typically 1-2 times per year).

## Desirable Knowledge, Skills and Experience

* Project management qualifications at IPMA Level D or above;
* Experience in line management;
* Experience of working on science infrastructure or engineering projects;
* Experience of using one or more of Primavera, Cobra, CEMAR, Jira, Confluence;
* Knowledge of NEC contracting;
* Knowledge of agile working practices;
* Familiarity with the formalism for, and requirements of, quality control environments such as ISO9001.

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# IT Support Analyst (10158)

**Job Location**

UK (Head Office)

**Area / Department**

Software Data Management and IT

**Contract Type**

Permanent

**Salary**

Competitive salary with generous pension, healthcare and leave benefits

**Closing Date**

01/11/2021

**Ref No**

10158

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A unique opportunity for an IT Support Analyst to join a multicultural, international organisation.

## The Role

As an IT Support Analyst you will maintain and work to continuously improve the IT service provided to all SKAO staff, by delivering support services and technical development tasks, and administering the asset lifecycle process. You will also perform service maintenance, liaising with the SKAO staff and the wider SKAO Community.

The IT Support Analyst reports to the IT Service Manager and works alongside the other IT Support Analysts, support staff in Australia and South Africa, as well as other specialists.

In line with our Flexible Working Policy, flexibility around working hours may be accommodated in agreement with the Line Manager where operationally viable, ensuring service delivery is not impacted.

## Key Responsibilities, Accountabilities and Duties

Working as part of the international IT Team and the wider technical community, utilising the Service Desk and other tools to deliver support.

Providing technical support for the wider Information & Communications Technology (ICT) services including performing incident, request & problem management, and support of communications, network and presentation technologies.

Operating services and service improvements such as:

Meeting and exceeding SLAs and OLAs for key activities and workflows;

Working to the IT Service policy and related processes and procedures;

Identifying and implementing automation opportunities to reduce repetitive work;

Identifying knowledge sharing, training and documentation requirements to reduce support requests and contribute to the build up of the IT knowledge base;

Maintaining and improving the IT Team’s customer relationships;

Supporting the development, production and automation of reporting tailored to specific audiences.

Supporting and maintaining meeting room systems (video conferencing, audio-visual devices and control/scheduling systems) and providing support to (sometimes large-scale) events such as conferences and large meetings where these can be physical, hybrid or virtual.

Providing guidance and support to junior members of staff in developing their skills and sharing knowledge gained through experience and training.

Operating asset lifecycle management including:

The build of IT hardware assets, customising to customer requirements;

Supporting the identification and maintenance of equipment standards;

Procuring IT Hardware and Software, working with approved suppliers;

Delivering the processes for repair, warranty and disposal of assets;

Supporting the delivery of software asset management in line with software and data residency policies.

Supporting Lean Agile project delivery of key IT projects delivering new services and improvements.

Undertaking any other duties within your capabilities as may be reasonably required.

## Mandatory Knowledge, Skills and Experience

Experience and expertise in related technical roles (typically at least three years)

Knowledge and experience in IT service provision

Experience in asset lifecycle management and software asset management

Experience in prioritisation and queue management

Knowledge and background with IT Service Management disciplines and Frameworks such as ITIL and Change Management

Technical expert in the support of Windows client systems (currently Windows 10) and related Microsoft applications technologies

Strong communication skills with international stakeholders

Be a flexible team player who is adaptable to change

Ability and willingness to work outside of normal working hours on occasion to meet service needs

## Desirable Knowledge, Skills and Experience

Certification held in industry/community, recognised disciplines/technologies pertinent to the role (i.e. Microsoft Certified Professional)

Experience with Microsoft, Apple and Google computing devices, mobile device technologies and device management systems

Experience with Microsoft Exchange and Microsoft Online services like Azure and O365

Experience in administering and supporting Zoom or Teams, or Cloud products such as Dropbox, Google Workspace (G-Suite) and Atlassian products

Programming/scripting experience and capability across multiple platforms

Experience of Lean Agile project management

Experience of working in a globally diverse team

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# Future Opportunity - Control Systems Engineer (10159)

**Job Location**

All sites (UK, Australia, South Africa)

**Area / Department**

Software Data Management and IT

**Contract Type**

Permanent

**Closing Date**

31/03/2022

**Ref No**

10159

As shared at the Global Careers Fair virtual event on 5th October 2021, this is a generic role profile for future opportunities available with SKAO or our partner organisations within the next 12 months.

If you have the relevant experience and wish to register with us, please click the 'Apply' button and follow the steps.

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Construction activities for the SKAO's telescopes in Australia and South Africa are expected to begin later 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.skatelescope.org/>

The SKA Observatory offers competitive salaries and a generous 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.

## The Role

The SKA Computing and Software team are looking for a talented Control Systems Engineer to work under the supervision of the Control System Architect and alongside other engineers to ensure that the Control Systems for the two SKA telescopes are developed to the highest standards, providing their technical skills to all software development teams involved in the realisation.

The SKA Telescope monitoring and control systems will be based on the Tango Control System Framework (<https://www.tango-controls.org/>) and the Control Systems Engineer will also closely interact with the open source community developing the framework.

## Key Responsibilities, Accountabilities and Duties

The main functions of this role will be to:

* Work within the SKA Observation Monitoring and Control Agile Release Train in coordination with the Control System Architect and other Control System Engineers, as well as joining our TANGO Community of practice.
* Act as a technical expert in the development of the SKAO control system, by providing guidance and best practices in the development of TANGO-enabled software products.
* Actively participate in the software development activity by writing and reviewing code in critical areas of the project, working with international agile teams (e.g. Europe, India, South Africa, Australia) as needed for a given number of increments.
* Actively work within the TANGO Collaboration, contributing to the development of future versions of the TANGO framework in adherence with SKAO necessities.

## Mandatory Knowledge, Skills and Experience

The ideal candidate will bring to the team:

* Experience of software and systems engineering applied to the development of Supervisory Control and Data Acquisition (SCADA) systems.
* Familiarity with and experience of the TANGO toolkit, including TANGO device development, and TANGO client-side tools.

## Desirable Knowledge, Skills and Experience

* Practical experience of configuring instrumentation and commissioning control systems and parts of scientific instruments.
* Experience or understanding of interferometry techniques.

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# Future Opportunity - Specialist Engineer (Various Disciplines) (10160)

**Job Location**

All sites (UK, Australia, South Africa)

**Area / Department**

Engineering and Project Management

**Contract Type**

Permanent

**Closing Date**

31/03/2022

**Ref No**

10160

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## The Role

Opportunities for Specialist Engineers will be available in the following domains **-** electronic, telecommunication, electrical, or mechanical.

Engineering is a key discipline for the SKAO telescope during construction and its entire life cycle, and the work will be crosscutting into many different work packages. Our Engineers routinely work with external contractors, scientists and engineers from partners organisation, across subsystems and systems as necessary.

## Key Responsibilities, Accountabilities and Duties

* Participate with the engineering team of the SKAO in reviewing the design, testing and verification of the telescope.
* Support the deployment and operation of the digital processing system used in SKAO-Mid and SKAO-Low telescopes.
* Provide engineering analysis, technical notes and reports related to the SKAO singal processing systems.
* Participate and provide specialist assistance to working groups, colleagues and engineering project managers.
* Travel, nationally and internationally as required, to the SKAO member countries and elsewhere.
* Undertake any other reasonable duties.

## Mandatory Knowledge, Skills and Experience

* A degree in Electronics Engineering, Physics, Applied Physics, Astronomy, or another closely related and relevant field, or equivalent experience.
* Good theoretical background and some practical experience in the following engineering disciplines:
  + - RF and Telecommunication Engineering
    - Electronic Engineering
    - Electrical Engineering
    - Mechanical Engineering
    - Signal Processing
* Experience in international projects.
* Experience in high performance computing and radio astronomical surveys.
* Experience in the modelling and design of radio astronomy instrumentation.
* Ability to communicate effectively both orally and in writing to an audience that spans a wide range of cultures and backgrounds.
* Be a flexible team player who is adaptable to changes.
* Willingness and ability to occasionally travel to SKAO partners sites as required.

## Desirable Knowledge, Skills and Experience

* A PhD or equivalent in Radio Astronomy and/or Signal Processing.
* Experience working with multicultural and geographically dispersed teams.

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# Future Opportunity - Platform Developer (10162)

**Job Location**

All sites (UK, Australia, South Africa)

**Area / Department**

Software Data Management and IT

**Contract Type**

Permanent

**Closing Date**

31/03/2022

**Ref No**

10162

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## The Role

The SKAO Computing and Software team are looking for a talented Platform Developer to work under the supervision of the Services Architect and alongside other engineers to ensure that the software platforms supporting the development and operations of the SKA telescopes are developed to the highest standards.

The SKA telescopes operate on a range of different computing models and technologies, and the project is always looking at the evolution of the technologies in this area, making this an extremely exciting and challenging role.

## Key Responsibilities, Accountabilities and Duties

The main functions of this role will be to:

* Work within the SKAO Services Agile Release Train in coordination with the Services Architect and other platform and network engineers to define the strategy and the activity to support the SKAO platform development and operations.
* Actively participate in the software development activity by writing and reviewing code in critical areas of the project, working with international agile teams (e.g. Europe, India, South Africa, Australia) as needed for a given number of increments.

## Mandatory Knowledge, Skills and Experience

The ideal candidate will bring to the team:

* Experience using infrastructure provisioning tools such as Docker, Kubernetes, Ansible, Terraform.
* Experience in automating test execution in a diversified technology environment, e.g. Python, C/C++, JavaScript.
* Proficiency with one or more Continuous Integration tools such as Jenkins, GoCD, Gitlab, Travis-CI.
* Expertise in cloud and virtualization platforms (e.g. AWS, OpenStack, GCP) and container orchestration technologies (e.g. Kubernetes, Mesos, OpenShift).
* Experience in supporting operations of highly distributed software systems.

## Desirable Knowledge, Skills and Experience

* Experience working with multicultural and geographically dispersed teams.

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# Future Opportunity - RF Engineer (10163)

**Job Location**

All sites (UK, Australia, South Africa)

**Area / Department**

Engineering and Project Management

**Contract Type**

Permanent

**Closing Date**

31/03/2022

**Ref No**

10163

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## The Role

The RF Engineer acts as an internal expert advisor within this discipline and as a technical resource for both SKAO and the project’s various multinational Consortia currently in the process of designing and developing the telescope.

The RF Engineer plays a key role, contributing to the co-ordination and management of RF hardware and software design and production matters within the overall project and the development of project management, system engineering and wider communication processes within SKAO. This role is responsible for developing SKAO’s existing RF Hardware Design and Production management activities, seeking to promote team work in resolving issues and to motivate, coach and develop people in the team to build functional skills in dealing with RF systems related requirements.

The RF Engineer also helps to shape SKAO’s strategic RF Hardware Design and Production management policies. In the wider community, SKAO’s RF Engineer may represent the organisation at national and international meetings and conferences, detailing RF engineering related project activities and articulating policy positions.

## Key Responsibilities, Accountabilities and Duties

* Contribute to the management and control of RF Hardware Design and Production issues within the SKA Project.
* Work collaboratively with colleagues both in SKAO and the wider SKA development Consortia to achieve compliance with project RF engineering requirements. This includes:
  + Undertaking peer reviews and verification tasks as needed to obtain confirmation that assumptions underpinning engineering designs, data, analysis methodologies, and interpretation of results have been validated.
  + Identifying and proposing solutions to issues associated with RF Hardware Design and Production.
  + Being the interface with supplier engineers to understand design, testing, verification and deployment issues.
  + Assessing and ‘owning’ project risk issues linked to RF Hardware Design and Production.
  + Providing specialist advice on specific RF Hardware Design and Production issues as needed.
  + Contributing to the development of methodologies and protocols for project management and systems engineering processes within the project.
  + Promoting team work, motivating, coaching and developing people in the team to build functional skills in dealing with RF Hardware Design and Production related requirements.
  + Developing supporting documentation and materials including demonstrations, presentations, training, etc.
* Participate in and initiate meetings with various stakeholders as required:
  + Propose/initiate and manage discussion groups and resolution team activities as dictated by project development events.
  + Act as SKAO representative on RF Hardware design and Production topics on international site hosting or Consortia committees.
  + Represent the SKAO at external domestic and international technical meetings detailing RF Hardware Design and Production related project activities and articulating policy positions.

## Mandatory Knowledge, Skills and Experience

* Degree in an engineering or scientific discipline.
* Wide-ranging knowledge of RF Hardware Design and Production issues associated with the diverse equipment and systems operating in the frequency range of 50 MHz to 24 GHz.
* Understanding of commissioning, testing, compliance and verification processes used within the RF engineering arena.
* Exposure to EMC testing, qualification, standardization procedures, etc.
* Ability to use computers as planning and analysis tools, preferably with experience in the use of currently available RF engineering related software.
* Computer literate – routine use of MS Office package (Word, Excel, PowerPoint, etc.) combined with excellent writing skills for emails, reports, documentation.
* Excellent one-to-one interpersonal skills for dealing with a wide range of people, including the ability to transfer knowledge to other members of the engineering team within the SKAO.
* Willingness and ability to undertake international travel as required and work with multinational and multicultural teams.
* Ability to work alone or as part of a team as required.
* Ability to develop an appreciation of the role of a domain specialist in large scale scientific projects.
* Resilient under pressure, self-motivated and adaptable to change.
* Experience (typically at least seven years) in a similar or related role within the public, military, scientific or commercial sectors.

## Desirable Knowledge, Skills and Experience

* Post-graduate qualification in a directly related discipline.
* Knowledge of relevant RF engineering working practices within the Radio Astronomy community.
* Broad-based general technical knowledge and analytical skills to support problem solving.

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# Future Opportunity - System Engineer (10164)

**Job Location**

All sites (UK, Australia, South Africa)

**Area / Department**

Engineering and Project Management

**Contract Type**

Permanent

**Closing Date**

31/03/2022

**Ref No**

10164

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## The Role

The System Engineer is a member of the SKA Observatory Project Engineering team. Individual postholders provide system engineering support to the project, both generally and in specific roles.

Within the SKA Office our System Engineers work closely with the relevant SKA Office engineers, project managers and/or domain specialists. The systems engineer is responsible for managing the requirements at the telescope level for the L1 requirement baseline. The systems engineers also support the PDTs to manage the product requirements and product interfaces.

Although the primary focus of the System Engineer is to actively participate and support the SKA Senior Systems Engineer in all aspects of the overall system engineering, participation in the engineering effort at SKA system and SKA product levels is also required.

## Key Responsibilities, Accountabilities and Duties

* Provide support, guidance and mentoring of System Engineering discipline and methods across the project, but in particular at the interface with the Element Consortia.
* Provide expert support to the drafting and maintenance of system requirements.
* Participate in lower level reviews from a general System Engineering perspective.
* Provide critical assessment of the drivers and results of the SKA prototyping programmes at Element level.
* Provide support to the Project Engineer.
* Work closely with regional SKAO management staff.
* Undertake other reasonable duties as directed by the Project Engineer.

## Mandatory Knowledge, Skills and Experience

* University degree in Physics or Engineering, another closely related and relevant field, or equivalent experience.
* Membership of, or eligibility for, membership of recognised national or international system engineering institutes.
* Broad technical knowledge of the system engineering of high technology systems, such as large observatories, space systems, telecommunications networks, nuclear power plants, etc.
* Experience in the system engineering of large high-value, high-technology projects.
* Industry experience and/or successful collaborative links with industry.
* Good oral and written communication skills.
* Ability to work closely with multicultural and geographically dispersed teams.
* Willingness and ability to represent the SKAO in international and other forums.
* Willingness and ability to travel nationally and internationally as required, to SKAO consortium locations and centres.

In addition, the successful candidate will have one or more of the following groups of essential knowledge, skills and experience:

Group 1

* Experience of development, implementation and execution of verification programs and acceptance processes in large projects in high technology environments.
* Experience of procurement against national/international standards, such as those concerning physical environments, EMC, etc.

Group 2

* Experience of preparing Reliability, Availability, Maintainability analyses of large enterprises, including dedicated critical safety analyses.

Group 3

* Experience of requirements analysis, trade-offs and engineering budgeting of large high-value, high-technology projects.
* Experience of Model Based System Engineering.

## Desirable Knowledge, Skills and Experience

* Experience in the system engineering of large high-value research and development projects, in radio astronomy, telecommunications or defence.
* Technical knowledge of radio astronomy instruments, and radio astronomy techniques.
* Knowledge of, or a demonstrable interest in, the development, operation and ethos of large scale international research infrastructures such as observatories.
* Experience in design for volume production and/or in large-scale manufacturing and assembly.
* Familiarity with the formalism for, and requirements of, quality control environments such as ISO9000.

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# Future Opportunity - UX Specialist (10165)

**Job Location**

All sites (UK, Australia, South Africa)

**Area / Department**

Software Data Management and IT

**Contract Type**

Permanent

**Closing Date**

31/03/2022

**Ref No**

10165

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## The Role

The SKAO Computing and Software team are looking for a talented UX Specialist to work under the supervision of the Web Systems Architect and alongside other engineers to ensure that the user facing software systems across the SKA telescopes are developed coherently and according to the highest usability standards. The user interfaces for the SKA telescopes will be mostly web based. Providing a consistent and ergonomic user experience across a number of diverse sub-systems will need guidance, in coordination with the agile development workflow followed by SKAO.

The UX Specialist is responsible for setting up, running, and reporting on all aspects of qualitative and quantitative user experience research, for developing a deeper understanding of Institute clients, and for delivering findings that can translate insights into action. A Lean mindset united with a good understanding of UX principles will be essential.

## Key Responsibilities, Accountabilities and Duties

The main functions of this role will be to:

* Work within the SKAO Agile Release Trains to support the development of all user interfaces across the system in a lean-agile development cycle.
* Actively participate in the software development activity by acting as a subject matter expert, providing guidance to development teams and setting clear principles for UX design and development.

## Mandatory Knowledge, Skills and Experience

* Experience of software and systems engineering applied to the development of Web applications and services.
* Experience of creating visually pleasing graphic designs for web applications and pages.
* Experience of testing and analysing user behaviour using a variety of methods to improve the user experience.
* Experience of using lean principles in user interface design.
* Experience of software development with JavaScript based frameworks (e.g. React, TypeScript and/or AngularJS).
* Experience of communicating with a wide variety of stakeholders in diverse roles to understand their requirements.

## Desirable Knowledge, Skills and Experience

Experience working with multicultural and geographically dispersed teams.

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# Future Opportunity - Database Developer (10166)

**Job Location**

All sites (UK, Australia, South Africa)

**Area / Department**

Software Data Management and IT

**Contract Type**

Permanent

**Closing Date**

31/03/2022

**Ref No**

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## The Role

The SKAO Computing and Software team are looking for a talented Database Developer to work under the supervision of the Services Architect and alongside other engineers to ensure that the software platforms supporting the development and operations of the SKA telescopes are developed to the highest standards.

The SKA telescopes operate on a range of different computing models and technologies, and the project is always looking at the evolution of the technologies in this area, making this an extremely exciting and challenging role.

## Key Responsibilities, Accountabilities and Duties

The main functions of this role will be to:

* Work within the SKAO Services Agile Release Train in coordination with the Services Architect and other platform and network engineers to define the strategy and the activity to support the SKAO database development and operations.
* Contribute to the definition of the database architecture with particular attention to our globally distributed operation model.
* Be responsible for and drive the consolidation of the technical choices for database implementation across the different areas of development for SKAO.

## Mandatory Knowledge, Skills and Experience

* Experience of software engineering to support and develop Relational Databases and associated services.
* Experience with SQL databases such as MariaDB, MySQL and Postgres.
* Experience with No-SQL or document oriented databases such as Elasticsearch (Solr, Lucene, ElasticStack) and Redis.
* Experience with time-series databases such as OpenTSDB, InfluxDB, and Prometheus.
* Ability to write SQL queries, stored procedures, and perform basic database development leveraging SQL database standard.
* Experience with developing database web-APIs in Python or PHP.
* Experience in configuring and operating distributed data storage systems.

## Desirable Knowledge, Skills and Experience

* Experience working with multicultural and geographically dispersed teams.

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# Future Opportunity - High Performance Analysis Algorithm Developer (10167)

**Job Location**

All sites (UK, Australia, South Africa)

**Area / Department**

Software Data Management and IT

**Contract Type**

Permanent

**Closing Date**

31/03/2022

**Ref No**

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## The Role

The SKAO Computing and Software team are looking for a talented High Performance Processing Developer to work under the supervision of the Data Processing Architect and alongside other engineers to build highly performant and scalable software that can face the many known and unknown challenges of next-generation radio telescopes.

A good candidate should be keen on exploring and implementing rigorous software engineering practices to help us balance modifiability and throughput requirements.

## Key Responsibilities, Accountabilities and Duties

The main functions of this role will be to:

* Help build and maintain libraries of base algorithms for radio astronomy.
* Build complex distributed pipelines with well-understood scientific and computational performance characteristics using execution frameworks.

## Mandatory Knowledge, Skills and Experience

* Experience with distributed data-intensive processing algorithm development.
* Experience with profiling and optimisation techniques, especially for high-throughput applications.
* Understanding and experience of signal processing algorithms, for instance Fourier transformations, gridding and (de)convolution methods.
* Experience of software development in Python and C/C++ programming languages.

## Desirable Knowledge, Skills and Experience

* Ability to rapidly learn about new techniques and technologies, and how they can be integrated.
* Experience with integrating hybrid processing infrastructure (e.g. accelerators).
* Experience with employing various distributed execution frameworks.
* Knowledge of radio astronomy data processing pipelines and their scaling properties.

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# Project Cost Analyst (10168)

**Job Location**

UK (Head Office)

**Area / Department**

Engineering and Project Management

**Contract Type**

Permanent

**Salary**

Competitive salary with generous pension, healthcare and leave benefits

**Closing Date**

08/11/2021

**Ref No**

10168

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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, regular social events, a family-friendly environment and much more. Come and join us!

An amazing opportunity for a Project Cost Analyst to join an international, multicultural team and contribute to the delivery of the largest science facility on earth.

## The Role

The Project Cost Analyst will focus on planning and maintaining the programme budget as well as controlling forecast and actual costs against it, working closely with the Project Controls Team, project managers and engineers across the programme, and the Finance team.

In line with our Flexible Working Policy, flexibility around working hours may be accommodated in agreement with the Line Manager where operationally viable, ensuring telescope delivery is not impacted.

## Key Responsibilities, Accountabilities and Duties

* Maintain the Work Breakdown Structure (WBS) and Cost Book, including implementing approved changes and ensuring the forecast budget is as accurate as possible.
* Assist project managers and senior stakeholders with decision making by modelling proposed changes.
* Support the data and information flow between various systems and teams (particularly including Finance), including supporting testing of system interfaces to improve efficiencies.
* Provide input to monthly reports as follows: actual costs vs planned costs by WBS, S-curves, variation explanations, forecasts and commitments.
* Critically evaluate and adapt as required the aspects of the project management control system pertaining to financial management.

## Mandatory Knowledge, Skills and Experience

* Qualification to university degree level or equivalent experience.
* Qualifications or training in Project Management such as PMQ, PRINCE2 or PMP.
* Experience (typically at least 2-3 years) working as a project manager on small-medium projects or in a project office or control team on large or complex projects.
* Ability to maintain, analyse and report on project controls, in particular cost management.
* Experience and proficiency using project management, financial and collaboration IT systems or tools such as Primavera, JIRA, Confluence, ERP, MS Office.
* Experience in evaluating and adapting such tools or processes to suit the needs of the organisation.
* Ability to influence people in widely differing parts of a complex organisation.
* Cultural awareness: ability to work effectively with colleagues in a multicultural environment.
* Good English oral and written communication skills.
* A flexible and self-motivated team player who is adaptable to change.

## Desirable Knowledge, Skills and Experience

* Membership of, or eligibility for membership of, recognised national or international project management and/or engineering institutes.
* Qualifications or training in accountancy.
* Experience in risk, issue, change management, earned value analysis or schedule management.
* Experience of engineering projects.
* Industry experience, and/or successful collaborative links with industry.
* Willingness and ability to represent the SKA Observatory in international and other forums.
* Willingness and ability to travel to SKAO partner locations and centres as required.

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