

Position Title	Senior Research Engineer
Classification	Level 7
School/Division	Office of the Deputy Vic Chancellor (Research)
Centre/Section	International Centre for Radio Astronomy Research (ICRAR)
Supervisor Title	Senior Research Fellow
Supervisor Position Number	318215
Position Number	319978

Your work area

ICRAR is a WA State funded high profile equal joint venture established in 2009 between Curtin University and The University of Western Australia (UWA). The Centre's headquarters are located at UWA, with research nodes at both UWA and Curtin. ICRAR is one of the lead Australian organisations participating in the international Square Kilometre Array (SKA) Project. ICRAR has been further funded from 2019 to 2024 with \$60 Million by the WA State Government and equal contribution from the Joint Venture Universities. ICRAR is one of the largest astronomy organisations in Australia.

The Astrophotonics Group at ICRAR is focused on designing, building, and testing advanced photonic systems with applications in radio astronomy, optical astronomy, and space science. The group combines research expertise from people with a broad range of backgrounds including astronomy, physics and engineering. The group's core technological capability is the long-distance transfer of stabilised optical-frequency signals, and microwave-frequency signals, and timing signals, transmitted across optical fibre networks and free-space laser links.

Reporting structure

Reports to: Senior Research Fellow

Your role

As the appointee you will, under general direction, provide support in the design, build, and test an optical fibre-based frequency distribution system tailored to meet the scientific needs and logistical challenges of the SKA; as well as develop this technology for application to other high-precision use-cases across space science and astronomy research fields. You will work in the Astrophotonics group at ICRAR and collaborate with the SKA Office and other partner organisations. This hardware development and production role includes office-based design tasks as well as laboratory-based prototyping and testing. The resultant hardware will be mass manufactured and deployed on the SKA-Mid telescope.

Your key responsibilities

Administer the work associated with the construction of the Phase Synchronisation System for the SKA-MID telescope. This includes finalising the engineering design and development program; procure and assemble all the system's modules; conducting laboratory testing, field trials, and quality assurance; assist with preparing of engineering and contractual documentation for the SKA Observatory; and provide ongoing product support

Contribute to research relevant to ICRAR's priorities across Astrophotonics research fields
Oversee the procurement, logistics, and warehousing of required system components
Coordinate design and construction efforts with industry partners
Contribute to work associated with other Astrophotonics research projects including optical free-space links, and other astronomy and space science applications
Coordinate the Astrophotonics laboratory spaces
Maintain effective working relationships with colleagues in the external institutes and organisations
Regular report writing and present progress reports
Maintain records and documentation relevant to the research
Attend and contribute to relevant meetings
Other duties as directed

Your specific work capabilities (selection criteria)

Relevant tertiary qualification or demonstrated equivalent competency
Extensive experience in electronic engineering including low noise analogue electronic design, RF & microwave electronics design and Microprocessor / FPGA / digital system design and programming
Substantial experience with EDA software, ideally Altium Designer
Substantial experience with PCB technology, including materials, manufacture, assembly, testing, and quality assurance processes
Substantial experience with prototyping and hand soldering including SMT components
Experience with PLL design and optimisation
Demonstrated ability to plan and perform electronics testing in a laboratory environment
Excellent written and verbal communication skills
Excellent organisational skills and demonstrated ability to set priorities and to meet deadlines
Ability to work independently, show initiative and work productively as part of a team
Experience with optical fibre technology is desirable

Special requirements (selection criteria)

Occasional weekend work
Some after-hours work may be required

Compliance

Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including:

The University's Code of Conduct hr.uwa.edu.au/policies/policies/conduct/code/conduct

Inclusion and Diversity web.uwa.edu.au/inclusion-diversity

Safety, health and wellbeing safety.uwa.edu.au/