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Driving innovation in signal processing



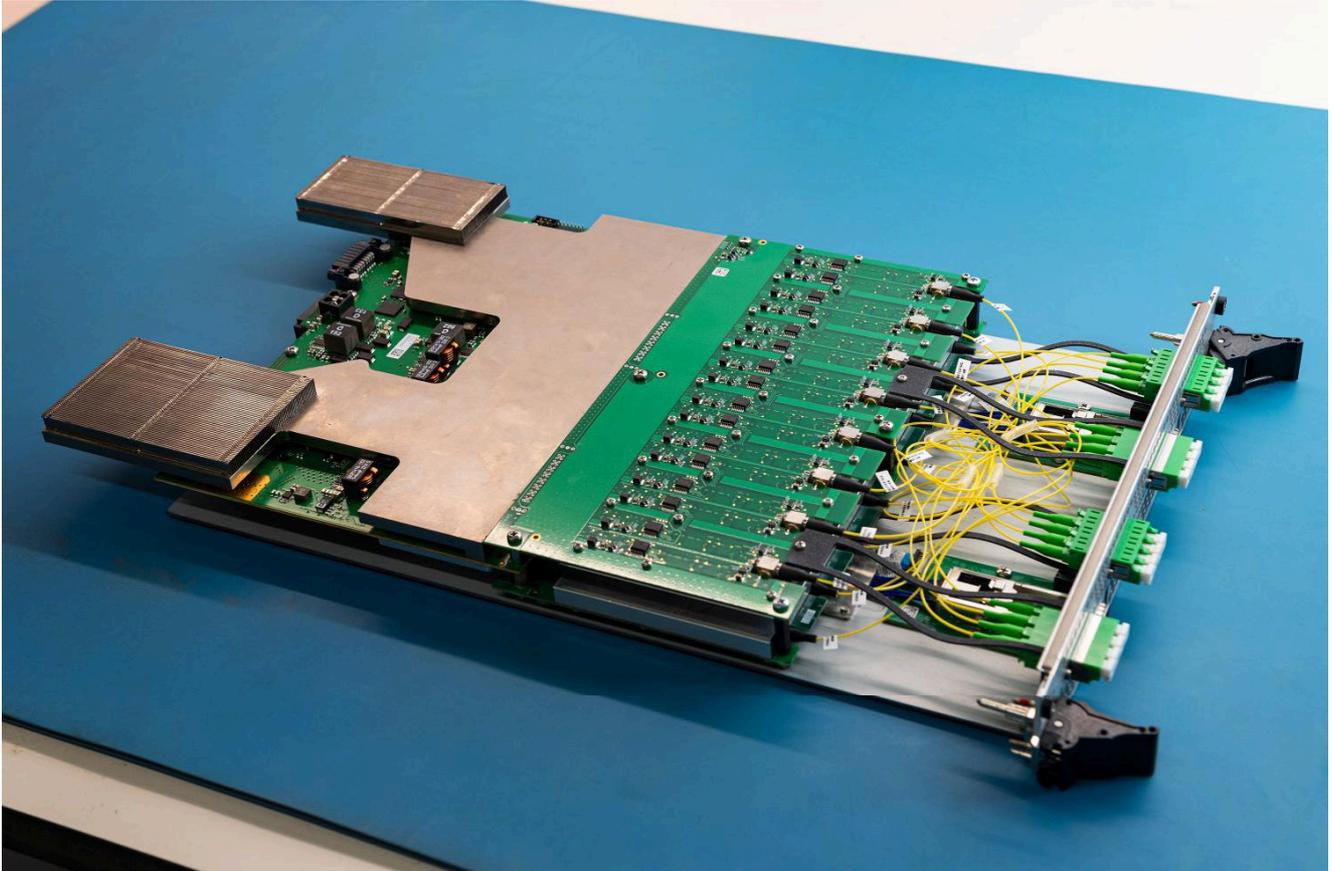
IMPACT

SKA-Low is sometimes called a “software telescope” because its antennas have no moving parts; astronomers can digitally point in different directions through advanced data processing techniques. A tremendous computing burden for the telescope will be making sense of the billions of “streams” of incoming data generated by its 131,072 antennas across 65,000 radio frequencies simultaneously.

Founded in 1978, Elemaster has established itself internationally as a Mechatronics Service Provider, offering design and production services for electronic devices with high technological content. Elemaster and their collaborators across several countries deliver the highly specialised signal processing subsystem (SPS) hardware for SKA-Low. Starting from the baseline designs made by Italy’s National Institute for Astrophysics (INAF), Elemaster began the industrialisation phase, building digital, software-enabled circuitry to help interpret radio light before it is transported hundreds of kilometres for further processing.

Over 50 people are working on the SKA project at Elemaster in different fields, from engineering to manufacturing, test development and reliability. The company is expanding its capabilities by constructing a new state-of-the-art R&D Centre in Osnago, Italy.

Valentina Cogliati, President and CEO of Elemaster Group says: “Such a challenging project has made us further improve our capabilities: the new Elemaster SKAO Lab will host hardware for testing and software development in a controlled environment simulating the Australian site installations.”



An Elemaster tile processing module. Credit: SKAO/Max Alexander

“ We are so proud to have been selected by the SKAO to participate in this extraordinary high-tech project. It will allow us to reinforce valuable collaborations with the scientific teams of our partners and confirm our role as a driver of innovation.

– **Valentina Cogliati** President and CEO of Elemaster Group





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Tile processing modules being tested in an anechoic chamber. Credit: Elemaster





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We recognise and acknowledge the Indigenous peoples and cultures that have traditionally lived on the lands on which our facilities are located. In Australia, we acknowledge the Wajarri Yamaji as the Traditional Owners and Native Title Holders of *Inyarrimanha Ilgari Bundara*, the CSIRO Murchison Radio-astronomy Observatory, the site where the SKA-Low telescope is being built. *Inyarrimanha ilgari bundara* means "sharing sky and stars" in the Wajarri language.

