

SKALow – The INAF contribution

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INAF, along with several Italian industries, universities, and other research institutes, has been engaged in this significant project since its inception in 2002. The initial advancements occurred in 2004 with the Institute of Radio Astronomy's involvement in the EC FP6 SKADS project, using the Northern Cross radiotelescope for testing new technologies, such as analog RF optical fiber links and digital domain beamforming systems, vital for the SKALow receiving system. In 2009, a national INAF group was established, joined by colleagues from OAA, OAC, IASF-Mi, and external partners from UNIBO, UNIFI, CNR-IEIIT, and industries, driving Italian technological progress. This cross-national collaboration has positioned INAF as a leader in various technological areas, including antenna design and an innovative UAV-based test system, digital acquisition systems, and beamforming firmware. Many of these technologies have been applied to the Aperture Array Verification Program (AAVP-2010) and the Aperture Array Design Consortium (AADC-2016). Following the System SKA Critical Design Review, the baseline design of the entire SKALow receiving system is predominantly "Made in Italy". The initial Aperture Array Verification System (AAVS1/2/3) prototypes were installed with substantial contributions from INAF staff. Additionally, INAF participated in the initial observations, verification, and commissioning of these instruments, furthering the industrialization phase. Presently, INAF holds a pivotal role in the SKA Low antennas, receivers, and signal processing system, deeply involved in the construction of the telescope's first release (AA0.5).

sessioni congresso

Tecnologie avanzate e strumentazione

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