On 11th EVN Symposium, Bordeaux / Fr / 9.10.2012 / 123 participants

RadioNet

Wide Bandwidth Integrated 1-4 GHz Feed Development for VLBI and SKA

Part of the DIVA JRA

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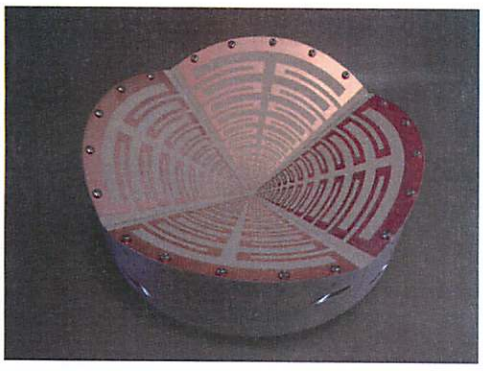
Wide-band single pixel feeds such as the wide-band Eleven feed developed in Europe through OSO/Chalmers are rapidly increasing in maturity. Compared to the traditional octave bandwidth feeds, wide bandwidth feeds, such as the Eleven feed, will create the possibility of significantly larger instantaneous bandwidth observations.

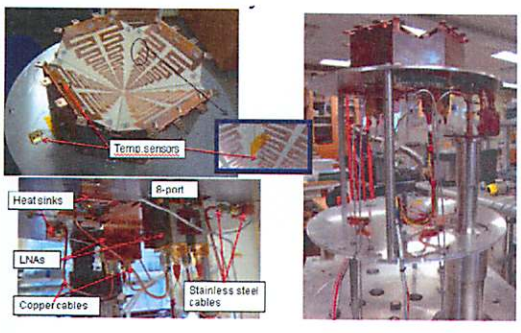
New technologies will be used for the Low Noise Amplifiers (LNA), technologies which promise excellent results for modest cryo-cooled amplifiers, processes, like 70nm mHEMTs from OMMIC and 50nm mHEMTs from IAF (Fraunhofer), Research, design and evaluation will focus on low power, wide bandwidth and very low noise temperatures.



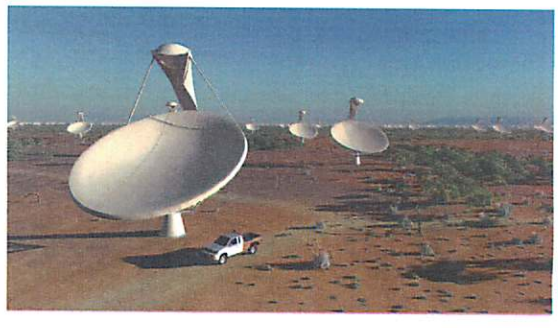
Eleven feed antenna proto-type for 1.2-14GHz

The bandwidth for the DIVA feed will be 1-4GHz

Within the SKA program this will be applicable for the Advanced Instrumentation Program (AIP): the Wide Band Signal Pixel Feed



The LNA's will be integrated with an 11-feed and cryostat and system performance will be evaluated



Artist Impression of a SKA Dish Array