

# SKA-India

## Leveraging Collaboration for Indian Science and Industry

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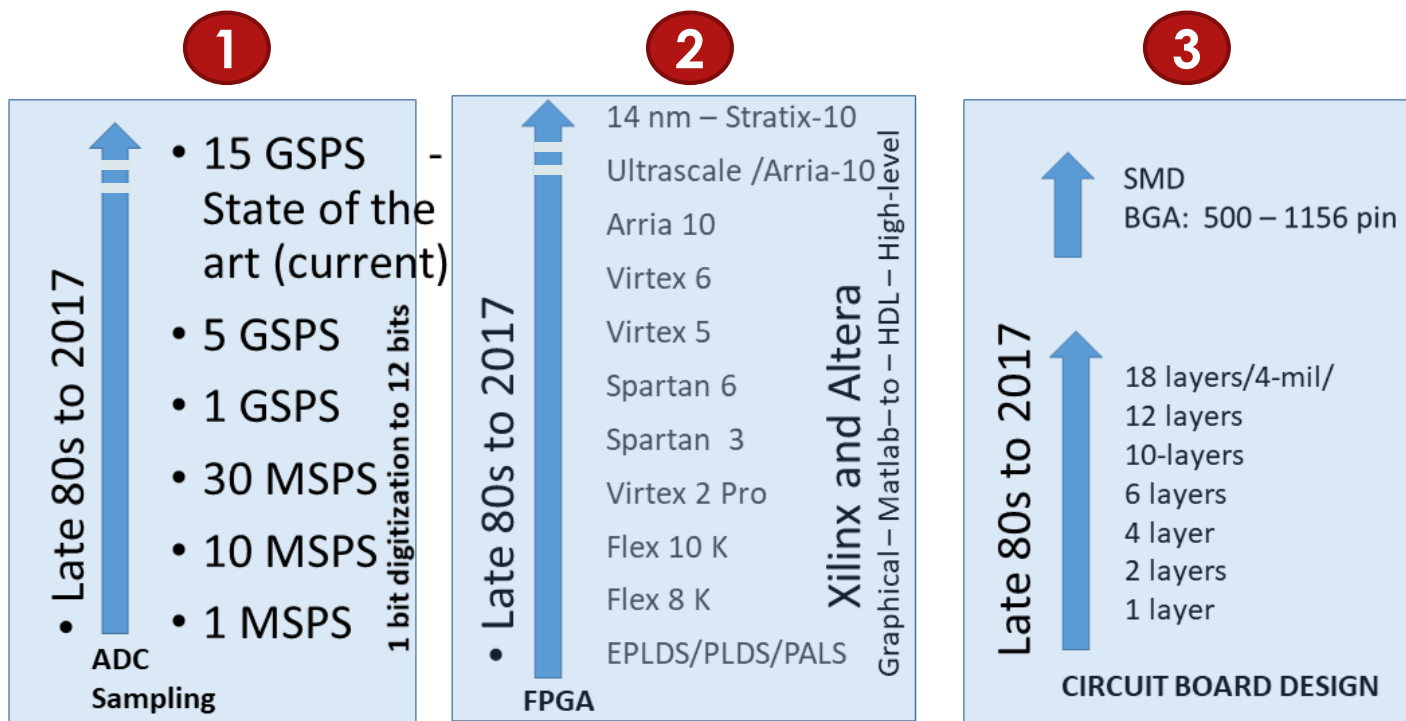
Cutting Edge  
Science  
and  
Cutting Edge  
Technology

# Radio Astronomy Instrumentation Expertise

INDIAN SCIENCE INSTITUTES and INDUSTRY – Major Contributors



## Relevant Technology within India



Cutting Edge  
Science  
and  
Cutting Edge  
Technology

**4** Make State of-the-art technology products from India

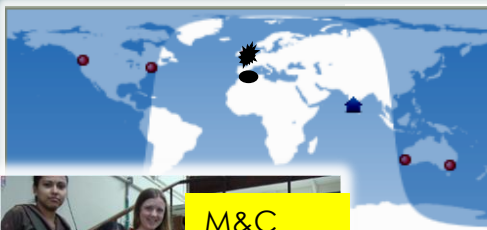
# Murchison Widefield Array



1 SKA-Low site in Western Australia  
SKA Precursor telescope - MWA



2 128 Antenna Digital receivers  
Design / HW / FW / Commissioning



Receiver Review Meet at RRI 2011

Readiness Review



M&C Meeting



Vani, Madhavi, Kamini, Vinutha, Ragavendra, Brian, Bob and Ed

3 RAMAN RESEARCH INSTITUTE with an International\* team

Infrastructure

Costs

Receiver Digital Boards for 512T  
A Status Update

Project Meeting

Overview  
Remote monitoring features  
Before 512T production  
Rx (d) Boards for 512T  
Use of the Telescope: 32T -> 512T

working areas

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THE NEW INDIAN EXPRESS  
BANGALORE TUESDAY 17 SEPTEMBER 2013

## Indian Links to Cutting Edge Radio Telescope

The \$51 million radio telescope became operational this July

By Poppy Bhattacharya

Bangalore: Imagine having access to the beginning of the universe and the ability to predict space weather and image stars...



Dr Vani K. Kashi, Madhavi K. and Kamini K., engineers at Raman Research Institute, who were involved in building the Murchison Widefield Array Radio Telescope (MWA) in Western Australia

WOMEN ON TOP  
Three women engineers from Raman Research Institute (RRI) in Bangalore, Karnataka, Vani K. Kashi, Madhavi K. and Kamini K. worked with other scientists at RRI from the concept to implementation stage of the MWA.

Progress at Home  
The senior trio of engineers and some scientists set up another Giant Meter Wave Radio Telescope (GMRT) in Pune about six years ago. It studies the sun and pulsars. Pulsars are stars that have



4 Industry involvement:  
Design - Assembly - Validation

- 1) Kamal Electronics
- 2) HiQ Electronics
- 3) SMILE Electronics

5 Student Participation

6 Synergy - Relevant experience & beyond

SKA Low LFAA



Panel members:

Persistent Systems: **Ms Snehal Valame**

Tata Consultancy Services: **Mr Vikas Kumthekar**