

### NEWSLETTER – NOVEMBER 2011

Since the first of these newsletters was produced, the Indlebe Radio Telescope has expanded and in fact the project team now has four radio telescopes under its wing. These are outlined briefly here.

#### 1. Indlebe Radio Telescope (IRT):

This is a fully functional radio telescope that is used as a real world platform for student project work. The specifications of the telescope are available on the website.

Following a presentation at an SKA workshop in Carnarvon (Northern Cape) in May of this year, Prof Charles McGruder (from the Western Kentucky University in the USA) has requested the use of the IRT data for an experiment that he is conducting. This is the first time that the data being received by the IRT is being used for astronomy and the team is very excited about this.

The IRT has also recently been upgraded with the installation of an Adroit supervisory control and data acquisition (SCADA) package.

#### 2. Indlebe Enkulu Radio Telescope:

The Indlebe Enkulu Radio Telescope has undergone some design changes and will now consist of an array of 16 quad loop Yagi antennas. These will be in an 8 x 8 configuration with a HPBW of approximately 3,5°, at 1420 MHz. The foundation and tower is now in place and we expect the full array of antennas to be in place before the end of the year. **Figure 1** shows an NRF supported student, Ruvano Casper, with one of the 16 antennas.

#### 3. Multifrequency Interferometer Telescope for Radio Astronomy (MITRA):

Following initial performance testing, some redesign of the antenna was necessary and a new prototype is under construction. Once complete the antenna will be tested at the South African National Antenna Test Range at Paardefontein north of Pretoria. This project has received direct financial support from the South African Department of Science and Technology. **Figure 2** shows the author along with two NRF supported foreign students with the original MITRA antenna on the roof of the engineering block of the Steve Biko Campus.



**Figure 1**

#### 4. Phased Experimental Demonstrator 2 (PED2):

Following a request to the South African SKA Project Office, when the original PED telescope was de-commissioned two of the 1,8 m parabolic reflectors, along with the peripheral hardware and software were donated to the DUT. The project team is planning to assemble this telescope on the roof of the engineering block at the Steve Biko campus. It is hoped to start work on this during 2012.

As far as students go, we continue to receive more students interested in studying to become technicians and technologists in radio astronomy engineering. The first four students from the African Partner Countries arrived in August to

begin their National Diploma studies. We now have ten students at the undergraduate level. All ten are fully supported by the National Research Foundation (NRF) in South Africa. In addition we have made an application for funding for a further four National Diploma students and one Master's student for 2012.



**Figure 2**

If you have any comments or questions please feel free to contact me by return email. Should you wish to be removed from the mailing list, please send me an email with the words 'remove me'. Please feel free to pass this newsletter on to anyone not receiving it.

Gary J van Vuuren

