Global financial slump could affect funding of huge radio telescope project

By Ben Maclennan

IT was not clear how the global financial slump would affect funding of the multibillion rand Square Kilometre Array radio telescope, the project's international director, Professor Richard Schilizzi, said yesterday.

"What will happen with the international financial crisis, nobody knows. But it is a concern," he told a media briefing.

South Africa is competing with Australia to host the telescope, which will allow scientists to peer back in time almost to the birth of the universe.

Schilizzi said the total cost of the project, to be bankrolled mainly by European and US government-funded agencies, would be e1.5 billion.

Of this, e150 million was being spent over five years on preliminary projects including perfecting system design and sorting out policy and organisational issues.

These should be resolved by 2012, which would allow the agencies to then finalise the site and decide on funding.

He said the "first science" from the telescope should emerge by 2017.

The telescope consisting of up to 3 000 receiving dishes, each 12 to 15 metres across, would feed into what would "probably be the most powerful computer on the planet".

Schilizzi said if the project was awarded to South Africa, half of the dishes would be set up at a site outside Carnarvon in the Karoo, and the others in countries as far afield as Ghana and Mauritius.

The telescope, designed to pick up radio rather than light waves, would be 50 times more sensitive than any of its type yet built.

He said scientists wanted to use the telescope to study emissions generated when the first stars and galaxies were formed some 750 million years after the "big bang" that gave birth to the universe 14 000 million years ago.

It would also help them unravel the mysteries of the phenomenon known as "dark energy", the force that was driving the apparent acceleration of the expanding universe.

"We have absolutely no idea what it is," he said.

He said the telescope would use a significant amount of electricity. Initial estimates were 40 to 50 megawatts for the Carnarvon array alone, and he hoped South Africa's energy problems would be solved by the time it went on line.

South Africa has already started work on the Meerkat project, designed as an array of 80 radio telescopes at Carnarvon that will serve as an experimental prototype for the full array. South African project director Bernie Fanaroff said Meerkat's first 12 metre diameter dish, made of a resin-fibreglass compound flame-sprayed with aluminium to provide a reflective surface, would probably be put up in April.

Next week will see international astronomers, government representatives and figures from business and industry attend a Square Kilometre Array forum in Cape Town. It will follow a three-day workshop on the technical challenges of building the telescope.

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