



PRESS RELEASE

Tellumat
June 17, 2010
Page 1 of 2

Tellumat completes KAT 7 feed assemblies in race to host giant SKA radio telescope

Massively challenging project puts company and country at the forefront of knowledge

Tellumat, the turnkey technology development and manufacturing group, has completed the feed cluster sub-assemblies for the KAT 7 radio telescope that is currently being erected at Carnarvon in the Northern Cape.

The units, destined for each of the KAT 7 array's seven telescopes, will receive and amplify data captured in the form of radio frequency (RF) emissions from celestial bodies. Tellumat's delivery to KAT 7 also includes software to process the data, allowing for a close study of the cosmos.

The KAT 7, whose construction was commissioned by the Department of Science and Technology, could ultimately lead to South Africa winning the right to host the Square Kilometre Array (SKA). Four countries bid for the privilege, which will bestow immense scientific prestige on the victor, but only South Africa and Australia remain in the running.

The next step in the race is successful completion of the following stage in the project – the Meerkat telescope – by 2011. Tellumat Technology Group (TTG) managing executive Bennie Langenhoven explains that KAT 7 is being built as a 'pathfinder' or proof of concept for Meerkat (itself the final pathfinder for SKA, whose construction will commence in 2012).

On completion, Meerkat will be one of the world's largest radio telescopes in its own right, spanning 80 dishes. Nevertheless, it will be dwarfed by SKA, whose 3000-plus 12-15 metre dishes will have a total footprint of one square kilometre.

Big feat

Tellumat was awarded the KAT 7 contract based on its proven RF expertise and involvement in an early demonstration prototype for the KAT 7, namely the XDM dish erected in 2007 at Hartebeesthoek.

The company earned plaudits by being among the first subcontractors to deliver its portion of the KAT 7 contract on time, on budget and within specification. "It was nothing short of an enormous feat, given the numerous challenges," Langenhoven says.

Conrad Thomas, engineering manager for TTG, says the main challenge has been the technological complexity of the project. "You work at the very frontiers of current knowledge and are led by specifications that feature extremely tight tolerances but are nevertheless subject to refinement over time. It's a high-risk, uncertain undertaking in which you're constantly learning. It's awesome."

Smiley van Zyl, project manager for the development, tells of the logistical difficulties of liaising with a huge range of subcontractors.

Other challenges included harsh operating conditions and the sensitivity of equipment to RF interference. Thomas says much design, system engineering and project management work went into eliminating interference, including using scheduled bursts of data feeds to a monitoring and control room,



PRESS RELEASE

Tellumat
June 17, 2010
Page 2 of 2

cryogenically cooling equipment and even banning RF communication on certain frequencies in the area, to ensure a frequency-quiet operating area.

Thousand at the core

Langenhoven says if South Africa wins the SKA contract, its core will be at Carnarvon (1000 dishes), with another 2000 to 3000 radiating out in clusters throughout Africa. "The total capture area of the dishes will be one square kilometre, but the configuration is not a simple square patch in the middle of the Karoo."

Using a variety of communication mediums, including fibre and satellite, Carnarvon and other sites will be backhauled to Cape Town, where the vast data volumes will be processed at South Africa's High-Performance Computing Centre in Rosebank. The processed feeds will be accessible to overseas scientific communities via South Africa's undersea telecoms cables.

"We are enormously privileged to be part of the world's largest terrestrial-based astronomical research project," says Langenhoven. "Whether South Africa wins SKA or not, we are creating a legacy that will benefit the country's scientific community, education, the economy and the nation as a whole."

Ends.

About Tellumat

Tellumat is an innovative, black empowered, South African technology company that has achieved a B-BBEE Status Level 3 rating, as well as being a "Value-Adding Enterprise" in terms of the DTI's Codes of Good Practice. It consists of three major trading divisions; Communications, Defence and Contract Manufacturing, and three partly owned companies; SIA Solutions (Pty) Ltd, Encee Engineering (Pty) Ltd and SIMpill (Pty) Ltd. Tellumat services three primary market areas, namely wireless voice and data communications, defence communication systems and high precision electronic and mechanical manufacturing. Tellumat is a world-class business focused on innovation, offering our customers dynamic and competitive technology products and services. We focus on understanding our customers' needs and forming long-term strategic alliances with likeminded enterprises worldwide.

www.tellumat.com