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The new Geodetic Research Data Management System at HartRAO

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The Hartebeesthoek Radio Astronomy Observatory (HartRAO) participates in astronomic, astrometric and geodetic Very Long Baseline Interferometry (VLBI) observations using both 26- and 15-m diameter radio telescopes. These as well as additional geodetic data from a Satellite Laser Ranger (SLR), Global Navigation Satellite System (GNSS), Met4 weather stations, a new seismic network must be stored at HartRAO and made available to the scientific community. Some data are e-transferred to correlators, analysis centres and space geodesy data providers, while others are processed locally to produce basic data products. The African VLBI Network (AVN) data storage and correlation will occur at HartRAO as well.

The AVN correlation and seismic network will generate large volumes of raw data to be stored and archived at HartRAO. The current data storage systems are distributed and outdated, and management systems currently being used will not be able to handle the additional large data volumes. This necessitates the design and implementation of a new, next-generation research data management system which combines all the datasets into one database, as well as cater for current and future data volume requirements.

In terms of processing, HartRAO is collaborating with the CSIR Centre for High Performance Computing and we will operate a Dell Westmere cluster containing 2880 CPU cores (61.5 TFlops)

Professionals from different disciplines will be working together in designing and implementation of the new data and processing systems. A short overview of the project as well as a progress report will be presented.

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