



Characterisation of the Kuntunse single dish telescope

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1 Introduction

The Square Kilometre Array (SKA) project has increased interest in radio astronomy across Africa, emphasizing the need for expanded telescope infrastructure. To address the limited VLBI participation, the African VLBI Network (AVN) was established, identifying 26 redundant Intelsat antennas across 19 African countries for conversion into radio telescopes. One of the first conversions, the Ghana Kuntunse antenna, strategically positioned between South Africa and Europe, enhances EVN's UV coverage and enables extensive observations of the Milky Way. The Kuntunse telescope is currently in its final commissioning phase and early science operations, where its capabilities in single-dish mode are being tested for continuum and spectral source observations.

2 Method

As part of the early science operations tests a telescope characterization campaign was conducted using standard calibration sources and systematic observations.

3 Results and Discussion

The System Equivalent Flux Density (SEFD) was determined to be 250 Jy, while the system temperature (T_{sys}) was measured to be 110 K.

4 Conclusion

The characterization results confirm that the telescope meets the expected sensitivity requirements for high quality radio astronomical observations. Future work will focus on long term monitoring and performance optimization in varying observational conditions.