

## USER SUPPORT AND DEBUGGING TOOLS FOR THE MEERKAT CORRELATOR/BEAMFORMER

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The MeerKAT correlator/beamformer subsystem (CBF) consists of high speed networking infrastructure, servers and frequency, correlation and beam-forming engines running on SKARAB hardware. A server (CMC) runs software for control and monitoring of various CBF instruments. At the user interface level MeerKAT employs a CAM (control and monitoring) subsystem to start the CBF in specified modes as well as schedule and run observations in these modes. During operations the CBF subsystem may experience various faults and errors. These may include network errors such as excessive dropped packets and link overloads, hardware faults, memory faults and signal chain errors (e.g. numerical overflows). When these errors occur it is very difficult to effectively pinpoint and correct the fault. CBF support infrastructure is needed to perform this task. This talk will focus on the support infrastructure which consists of tools for displaying and debugging the current state of the CBF subsystem as well as sensors and snapshot blocks built into the CBF signal chain. Sensors and snapshot blocks useful for qualification and functional testing of a correlator beamformer subsystem will also be discussed.