Cycle 0 capabilities

JAO held a meeting on March 4, 2011 to decide on the observing capabilities available to the community for Cycle 0.

The Call for Proposals will offer the following capabilities:

- 16 antennas
- 4 receiver bands (band 3, 6, 7 and 9, i.e. ~3, 1.3, 0.8 and 0.45mm)
- Maximum baseline length: from 125m (small array) up to 400m (large array)
- Minimum baseline length: 18m
- Spectral modes:
  Continuum: one mode with bandwidth 7200 MHz with resolution of ~30 MHz.
  Spectral line: six modes with resolutions[1] of ~25, 50, 100, 200, 400 and 800 kHz and bandwidths of (respectively) 225, 450, 900, 1800, 3600, 7200 MHz per polarization.
  (For all of these modes both polarizations are used. A single-polarization mode with resolution of about 12kHz and ~225 MHz bandwidth will also be available.)
- Observational Modes:
  Single field interferometry
  Pointed mosaics with up to 50 pointings. (The loss of sensitivity due to overheads is estimated at ~20% for 50 pointings and ~10% for 25 pointings.)
- Amplitude calibration accuracy for Band 3 better than 5%.
  Calibration in the higher frequency bands is likely to be less accurate. The goals are: better than 10% in bands 6 and 7, and better than 20% in band 9.

The following capabilities will not be offered for Cycle 0, but intensive testing and Science Verification using these features will continue with a view to having them ready for Cycle 1:

- Polarization measurements
- Zero-baseline (i.e. single-dish) observations

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[1] The figures given are the approximate FWHM of the frequency response, allowing for the effect of a window function to suppress ringing. The bandwidths quoted allow for the loss of some additional channels at the edge of the band beyond the minimum number foreseen in the design.