Mark 4 Minimum Operational Capabilities

Processing Capabilities

- Multi-station (8 max) processing
- Single-thread correlator command file
- 16 channels/station max over 32 tracks
- 32 complex lags/baseline
- 140 ips operation (7.875 Mbps from 56 kbpi tape track);
  280 ips may also be possible with additional set of reproduce modules.
- Tapes stop at end of each 'task' (i.e. processed scan)
- Supports Mark 4-style playback units only
- Supports Mark 3A/Mark 4/VLBA tape formats in 1:1 fan-out mode
  with no barrel-roll or quasi-random encoding

Processing Setup

- Observing schedule from 'schedVEX' file
- VSN's derived from SNAP/'logVEX' file
- Correlator configuration from 'corrVEX' file

Operator Interface

- GUI playback-drive control and status
- Command-line correlator control

Control Computer

- HP 'C' or 'J' class HP-UX machine
- 10 Mbps Ethernet networking

Tape Library

- Socket connection to Mark IIIA tape library on A900

Output Formats

- Directory structure essentially identical to Mark IIIA unix structure
- Root and correlator-data files in Mark 4

Post-correlation processing

- fourfit
- will use familiar Unix software (aedit, etc)

Mark 4 Target Operational Capabilities

Processing Capabilities

- Multi-station (16 max) processing
- Multi-threaded (4 threads max) correlator command file; will handle sub-array processing efficiently
- 16 channels/station max over 64 tracks (requires 2nd headstack)
- Simultaneous autocorrelation on all stations
- Full spectral-line support to 4096 lags
- Full cross-polarization processing support
- 280 ips operation (15.75 Mbps from 56 kbpi tape track)
- Continuous tape motion from task to task when appropriate
- Supports Mark 4-style playback units only
- Supports Mark 3A/Mark 4/VLBA tape formats with fanout, barrel-roll and quasi-random encoding
- Data-mirroring support
- LO-offset support
- 'adhoc' model support (tentative)

Processing Setup

- Observing schedule from 'schedVEX' file
- VSN's derived from SNAP/'logVEX' file
- Correlator configuration from 'corrVEX' file

Operator Interface

- GUI playback-drive control and status
- GUI correlator status
- Command-line correlator control

Control Computer

- HP 'C' or 'J' class HP-UX machine
- 100 Mbps Ethernet networking

Tape Library

- Tape library using commercial software on PC-based system
- Possible integration with NRAO 'tracks' system

Output Formats

- Directory structure essentially identical to Mark IIIA unix structure
- Root and correlator-data files in Mark 4
- Fully transparent format-version control

Post-correlation processing

- fourfit
- will use familiar Unix software (aedit, etc)