

News from the
EVN Technical and Operations Group
(TOG)

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What is the TOG?

- The TOG is a body of the EVN
- It is the group of people who operate the EVN
 - Friends of VLBI
 - Technical VLBI person at each telescope
 - Correlator personnel
- Advises EVN board of directors

EVN present status

- Analogue MK IV or VLBA baseband converters
- Mark 5A recorders
- Maximum data rate: 1 Gbit/s
- Quasi continuous calibration
 - Recent change: opacity free gain curve at 22 GHz
- Automatic flagging

Planned Improvements in 2009

- Digital backends: “DBBC”
 - VLBA will install similar system
- Mark 5B recorders
 - VLBA will upgrade to Mark 5C (not yet funded)
- Maximum data rate unchanged: 1 Gbit/s
but: improves stability at correlator
 - VLBA will use a DiFX software correlator
 - VLBA initially: max. data rate 512 Mbps

DBBC advantages

- Improved bandpass shapes
- Phase differences between sub-bands predictable and stable
- Implements 80 Hz continuous calibration
- Wider sub-bands possible
 - (not for MK IV correlator)
- VSOP2 compatible as 128 MHz sub-bands are possible + Mark 5B output
- Fully backwards compatible

Data acquisition: new developments

- DBBC can deliver up to 4 Gbit/s
- Mark 5C can record up to 4 Gbit/s
- EVN directors have decided to upgrade EVN
- Requires special DBBC Ethernet interface card
 - Development: layout and firmware
 - Timescale for availability ~summer 2009
- Aim: 2 and 4 Gbit mode at antennas with sufficient bandwidth in receiver and IF system
 - 5 GHz and above
 - Upgrades of receivers and IF desirable

2009 and beyond

- Global VLBI with up to 4 Gbps
 - 6 GHz and above
- Correlation most likely via software correlators