Haystack Status

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Projects

- Mark6 Status
- RDBE-G
- Operational Testing Status and Plans

Mark6 Status

- Software Version 1.1 Beta
  - Features:
    - Sub-grouping support
    - Mark6 service for cplane / dplane on boot up.
      - start / stop / restart / reload
    - Persistent configuration information retained
    - Bug fixes
  - dplane (data plane - r/w to disk modules)
    - Version 1.16
  - cplane (control plane - VSI-S interface)
    - Version 1.1.0

Mark6 Status

- Documentation
  - Command Set Version 1.1
  - Sub-grouping memo (use cases)
- Self test software
  - Has not been released
- Conditioning software
  - Under development
- Vdifuse - Fuse based interface to scatter gather stored disks (Under test)

Mark6 Status

- Hardware
  - New motherboards
    - Old motherboards reached end of life
  - 64G of RAM
  - CX4 or SFP+ 10G NIC cards
- Haystack has 9 systems in house
  - 3 EHT Development
  - 4 Geodesy and development
  - 2 on Correlator (Mark5 Upgraded to Mark6)
- Alma Phasing Project
  - 2 at site / 2 in transit / 1 spare

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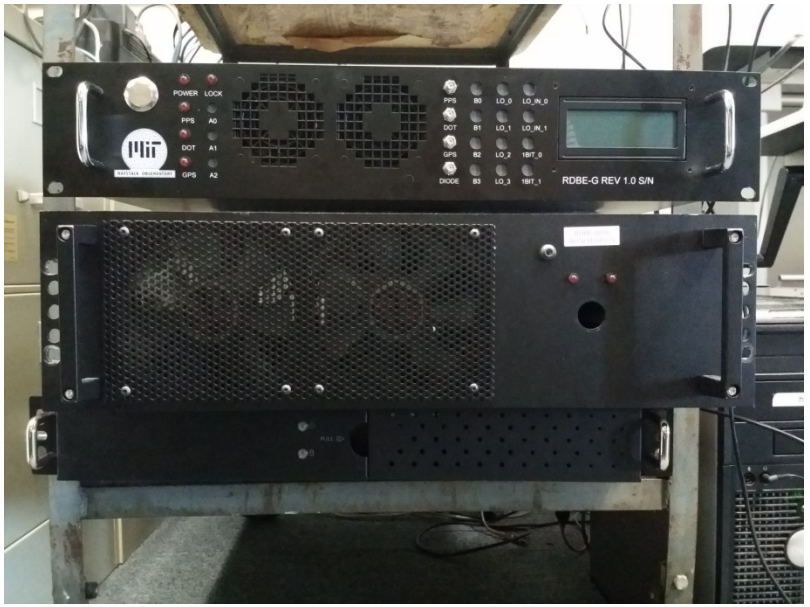
Mark6 Status

- Availability
  - Order from Conduant
    - $15,285 US for 16Gbps system
    - 60 day lead time
  - Upgrade cost for Mark5
    - $7,588 for host
    - Plus misc items

- http://www.haystack.mit.edu/tech/vlbi/mark6/index.html

RDBE-G

- Roach Digital Backend - G
- New ALC
- Haystack Synthesizer (rev'ed)
- 3U form factor (new chassis)
- Version 3.0 firmware
  - Two IFs 512Mhz bandwidth
  - 16 channels - complex data
- Display for time / diagnostic information
- Under test for VGOS
  - Wf to GGAO
- Available from Mo's
  - pricing unavailable but estimated < $18K



Operational Testing Status and Plans

- Vdifuse (Geoff Crew)
  - Scatter / Gather Fuse Interface for VDIF
    - Alma Phasing Project - verified
    - General purpose version under test
- Correlator
  - Mount Mark6 Modules with vdifuse process the data directly from the disk modules to DiFX.
  - Standard Mark6 system
    - Raid0 in slot 0
    - S/G in other slots
    - Gather / DQA scans to RAID for processing

Operational Testing Status and Plans

- Use cases status:
  - Case 1: Mark5B formatted data (PFBG 1.4)
    - Success - Fringes between RDBE's
  - Case 2: Complex VDIF data (PFBG 3.0)
    - Success - fringes between all RDBE's
  - Case 3: Mixed mode testing (3.0/1.4)
    - Two with PFBG Version 3.0 to Mark6
    - Two with PFBG Version 1.4 to Mark5C
    - Success - fringes between all systems
  - Case 4: 16Gbps to two disks (VDIF)
    - 30 second Geodetic scans (under test).

Operational Testing Status and Plans

- Case 5
  - EHT trial run (Wf to GGAO Baseline)
    - South Pole telescope gear
  - CFA and Haystack
  - R2DBE -> Mark6
    - Roach2
    - Virtex6 FPGA
    - ADC 2Ghz bandwidth
    - 16Gbps / system
  - RDBE-G (1.4 and 3.0 firmware)
  - Success : fringes detected.

Operational Plan

- Broadband Dev Westford to GGAO 12M
  - VGOS system
  - 4 RDBE-G -> Mark6 (8Gbps)
- Alma Phasing Project (64Gbps)
- Event Horizon Telescope (32Gbps)
- Integration with the field system (ongoing)
- Documentation
  - New users manual
  - Command sets

Thank you / Questions?

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