VLBA ACQUISITION MEMO #316

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
HAYSTACK OBSERVATORY
WESTFORD, MASSACHUSETTS 01886

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Telephone: 508-692-4764
Fax: 617-981-0590

To: VLBA tape drive users

From: Roger Cappallo

Subject: Version 6 of RECON

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Version 6 of RECON, the recorder controller program which is resident in firmware, is finally complete. It is a major revision of version 5, since the underlying operating system, VERSADOS, was excised. To take its place, a small multi-tasking operating system was written. The code is now maintained on a PC-based Microtec Research Inc. development system, but could easily be ported to other development systems. There were also several upgrades added and bugs fixed. In order to facilitate the use of the new version, I have compiled this short list of the changes. Documentation of the new features, such as the bar code firmware, can be found in the updated versions of VLBA Acquisition Memos, numbers 71 and 238. The code may be retrieved by anonymous ftp from bashful.haystack.edu (192.52.61.16), in the directory vlba/version_6.0. The files are named rom3.s and rom4.s, and are in the Motorola S-record format.

Bug Fixes

1. Clear the reel servo contol bit on power up, so that the reel servos don't have a spin transient (done in ReCon 5.1).
2. Wait for vacuum to rise on a load (B3) command following a previous unload (B4).
3. Apply the capstan size constant (B9) in a consistent way to both speed control and footage counter calculations.
4. Ensure that drive is stopped before executing a load (B3).
5. Stop command issued to an already-stopped capstan should not switch to high gain.
6. When aborting headstack motion (CB), don't clear the relevant command values, just their current state of activity.

New Features

1. Post a slewing bit (GSW bit 13) while the slew command (BC) is active.
2. Start tasks up in a new order (TAPE, HEAD, MCIO, RSIO, ATOD, RITE, MONT, CREM, MSTR, IDLE) so that the time-critical tasks that control mechanical devices get control early in the power-up sequence.

3. Implement the bar-decoding capability. This affects locations 34, 35–3A, 73 (bit 12), 74 (bit 10), B3, and BE.
4. Limit the number of iterative positioning cycles (B7) to 3, primarily so that the tape will not position off the end of the reel.
5. Allow the user to specify the lowtape point, via command BF.
6. Eliminate dependency on battery backed-up RAM (a result of the weaning from the VERSADOS system).

Postponed for further consideration:

- Allow the user to set a maximum transport speed.
- Stop peaking when the power falls below a user-defined threshhold.
- Post a data-read flag whenever data is successfully extracted and placed in locations 1E–1F.
- Support the switch and indicator bits (as yet unattached to anything) on the new monitor board.