

Field System Future Plans

September 2003 TOW

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❖ **FS 9.6.10 (shortly after TOW)**

- FS reports more detail on Mark 5 errors
- Conditional compilation for ftok() usage
- Other small items generated by this meeting

❖ **FS 9.6.11 (4th quarter 2003/1st quarter 2002)**

- Integrated Mark 5A support
 - Eliminate the need for mk5=... commands for normal operations
 - Monit display of disk pack used and remaining capacity
 - Predicted bank swap times
- Phase-cal extraction support for Mark IV decoders
- Automatic recording of FS abnormal termination messages to a file.
- Complete support for station dependent detectors and no available noise diode in the new ONOFF. This will require reorganization of existing station dependent detector support at the SNAP command level, which will impact fivpt and Tsys measurements as well.

❖ **Longer term items**

- S2 DAS support, provided by Mario Bérubé
- Band switching
 - Most of the items for this are complete with the improved Tsys features
 - Band configuration procedures added to set-up DRUDG. The DRUDG control file will be expanded to include a table of station defined procedures that can be used to set-up local station equipment for a band. These procedures can also be used manually by the operator as needed. Note that use of the existing SAVE_FILE command can be used in these procedures and INITI to recover the receiver set-up between FS terminations and restarts.
 - Add a command LOCONFIG, that will be added after the LO= commands in the IFD set-up procedure. This can be used as trigger to start configuring the Los, if doing so in each individual LO= command might cause problems. By default, LOCONFIG will be a NO-OP, but it can be defined locally and do whatever is necessary for LO configuration in one step.
 - CALON and CALOFF SNAP variables. This intended to deal with stations that different cal control methods for different bands. The idea is that variables will be introduced into SNAP, specifically two: CALON and CALOFF. These can be defined by the band set-up procedures described above and used as \$CALON and \$CALOFF in procedures when the noise diode needs to be controlled.

FS Future Plans

- Pointing software clean-up
 - Eliminate redundancies in pointing configuration information by introducing a source coordinate database file and reorganizing point.prc and ctlpo.ctl (acquir control file).
 - Documentation clean-up to reflect new procedures and utilities
- NTP
 - Will not be used directly in FS. We plan to use a different approach than originally envisioned because questions have been raised about the reliability of NTP if some servers are misbehaving. Instead of using NTP time in the FS directly, we will compare the computer's NTP time to the FS time. If they differ by too much an error message will be generated. We can detect whether NTP thinks it is "sync'd" to a server and will not report an error unless it is.
 - FMSET will include an indication of whether the computer time is "sync'd" to NTP
 - Develop an "adaptive" clock model so that for small changes in the formatter time, the FS time will follow the formatter. Large changes will not be followed so that integer clock jumps can be detected. The difference between large and small changes has to be investigated, less than 0.1 seconds over a minute is possible. This may also remove the need to update the model manually.
- TNX ("Thanks") command expansion
 - This command currently provides a syntax to eliminate the display of errors that the operator knows can't be fixed and should be ignored
 - Will be extended to allow different error messages with the same number and two letter code to be distinguished
 - Will not allow an error that has not occurred to be masked off.
- FSVUE
 - Initial implementation of an integrated X client (Tcl/Tk) FS Operator Interface for FS
 - Initially add-on, eventually main interface
 - Includes log display (scrolling doesn't jump on new input) and operator input windows
 - Buttons to allow you to examine logs, help, and run various utilities: monit, logp, msg, and others.
- ERRCH
 - Initial implementation of a display program for monitoring error
 - Multiple colors (and histogram) for different severities
- Two head recording changes to make VLBA/MarkIV/VLBA4 more compatible have been shelved
- Fast set-up. The time between source scans will be shortened when there is no head motion and the formatter setup does not change. The FORM commands will be modified to not set up the formatter if the current mode is the one desired. Other commands will be modified as necessary to reduce the total time required. Documentation for all modified commands will be updated to reflect the changes.
- Improved Tsys
 - Most items completed

- Post processing program to generate AIPS (ANTAB) format TSYS, WX data

❖ **Additional Future Items**

I. IF patching automation

I think this depends on hardware that hasn't even been designed yet. We are eagerly awaiting any ideas, but since there is no hardware it hard to estimate the time needed. I assuming we just need to add one relatively simple SNAP command (a special version of PATCH and a way to control which version is used).

II. Mark IV decoder support

This is beyond the phase-cal monitoring discussed below, mainly a few SNAP commands to control the decoder manually. Most of the effort here is actually divining what is needed and developing documentation

III. Phase-cal control monitoring from VEX schedules

- A. Support for VLBA digital switch board
- B. ANTAB table from post-processing

IV. Browser based documentation.

V. Update Documentation, particular pointing and coding section.

VI. Integrate Harro's real time fringe software into the FS

Is this item obsolete because of Mark 5?