

Software Release Notice

System: AGS/SGS
Date: 6 October 1999

Release: NASA 2.5

Modification Description:

AGS/SGS Upgrade

The following changes are planned for AGS/SGS software. This release contains modifications that have been completed since the NASA2.32.1 release.

- 1) Implement the software to incorporate a switch that interrupts the modulation signal to the HP8780 during sweep and holds it off until S/C coherent acquisition has occurred. All three sites should have a spare 4*1 switch (310-313) available for this function, so no additional hardware is necessary.
- 2) Upgrade ephemeris ingest that goes directly into SA computer to be an event that is either authorized or not authorized for that pass, i.e. scheduled, and delete the need for operator to upgrade and log into the system each time a new ephemeris is to be accepted. Change pop-up window so that ephemeris will be accepted, even without operator acknowledgement.
- 3) Prevent Boresight from activating immediately when modem is connected. Impact is potential to generate RFI. S-A will deactivate the modem upon connect and disconnect
- 4) Tape log. Another thing with this tape log is the fact we are not able to print the log for one or more tapes. S-A will add a print tape button. We have to print the log for all the tapes, and this function uses a lot of paper. Until now we have been using the Master and FTP'ed the Tape.log file from the SCC, and from there printed the tape information we want. The problem with this is that the Tape.log file only gets updated.
- 5) Provide software for the Marconi Local Oscillator generator that selects a remote R.F. reference frequency.
- 6) Corrected bug in scheduling supports characterized by the following actions. When using the scheduler, choose a satellite and push the "Pass Gen" button. All orbits for that satellite are displayed. Choose an orbit, push the "Copy pass" button, and then push the "Cancel" button to not schedule the support. If you now choose a different orbit and push the "copy pass", you'll get the same AOS and LOS time as for the first orbit.
- 7) Added diagnostics to characterize problem when error button is red after opening an S-Band receiver window. This is very repeatable at Wallops when code is started and operator hits receiver bar. After acknowledged, then it does not repeat. This problem was not noticed at Poker. Added diagnostics to identify the source of the problem and possibly fix it.
- 8) Corrected where X-Band Track Marconi would only configure to the frequency in the default and not to the frequency specified from the configuration screen.
- 9) Allow support for up to 100 Satellites and add graceful degradation if more than 100 Satellites are tried.
- 10) Corrected the track analysis problem that showed low elevation droop in the elevation delta.
- 11) Added track time bias per Satellite.
- 12) Removed shortened prepass feature that would not allow uplink to work for passes scheduled close to current time or by restarting the code close to or in the middle of a pass.
- 13) Enhanced the control of NTP. When time on top level is in red, the time is not synchronized with NTP. When it is in green, time is synchronized with NTP. Changing the time from the SCC will stop NTP. Restart NTP by pressing the start NTP time button.
- 14) Enhanced scheduler to allow orbit zero.
- 15) Corrected scheduler bug that improperly changes the recorder start time to the beginning of scheduled pass time.
- 16) Improved I/O handler to recognize and recover from 'Broken pipe'.
- 17) Added enhancement for the LandSat BER test. The BER test will check for sync and if no sync, it will automatically invert the data polarity on the Test Modulator.
- 18) Added the capability to enter a fractional bit rate for the LandSat BER clock.

- 19) Corrected S-Band pass support strip chart displaying numbers that were off by a power of 10.
- 20) Added DPS button on the recorder screens.
- 21) Corrected the fraction of a second in the status log file.
- 22) Added code to clear RF Frequency field on receiver GUI upon entering screen so that invalid value will not be displayed if the unit is off line.
- 23) Added Code to automatically associate blank tapes with selected satellite.
- 24) Added Code to allow manual control of scheduled recorders while executing a schedule, but operator must confirm this action on a “pop-up style” warning screen.
- 25) Corrected queue overflows for tracks of satellites with bad ephemeris.
- 26) Corrected status updates on recorder control screens when tape is removed from the tape log.
- 27) Added feature to start a non-coherent uplink acquisition with the Start Sweep button, when the scheduled configuration file had uplink disabled.
- 28) Added text to some numbered recorder messages. Removed unnecessary error message.
- 29) Widened fields on top level screen for recorder sources.
- 30) Corrected initialization of Marconi instruments for boresight tests.
- 31) Increased delay after reboot of the control room LAN gateway before starting to communicate with instruments to avoid RPC errors.
- 32) Fixed a bug, which only allowed 6 items in the list box of Eb/No Test results.
- 33) Added OFFLINE status for DSI Bit Sync on top-level screen.
- 34) Fixed Right Click mouse button for traversing through X-Band and S-Band instruments for both Control/Status and Configuration.
- 35) Fixed bug in Recorder Scheduler which would not stop recorder if recorder needed to be continuously resent Record command.
- 36) Added debug for Recorder Position To command.
- 37) Fixed zero on noise for X-Band Signal strength to stay in linear voltage range of 924_1 Demods.
- 38) Modified Color palette so that indicators and description have more contrast.
- 39) Reduced the number of recorder pre-roll commands, they will now be sent every five minutes, rather than every two.
- 40) Corrected the calculation of needed tape for the Ampex recorders.
- 41) Added a print pass gen. button to the schedule screen.
- 42) Added an optional flag into the remote schedule file to enable the station computer to override the Master track start/stop times and recalculate for horizon-to-horizon times.
- 43) Fixed intermittent conflicts on manually scheduled recorder events.
- 44) Added capability to configure EOS Xband BER Clock using instrument default settings.

Files Affected:

The files that were developed and/or utilized as part of NASA 2.5 are listed in Attachment 1: NASA 2.5 FILES.

Hardware Requirements:

N/A

Validation Procedures:

NASA 2.5 will be validated through continued daily testing at NASA/SGS/11m for scheduled satellite passes. In addition, the following actions can be performed to validate some upgrades included in this release:

- 1) Verify normal operation of uplink.
- 2) Verify that remote ephemeris is automatically accepted without user intervention.
- 3) Verify that X-Band and S-Band emitters do not automatically come on line on modem connect.
- 4) Verify that Print Tape Log button is present and that it prints selected tap log.
- 5) Verify Marconi Signal generator's reference frequency is selectable via the instruments default screen.
- 6) Verify that option to close the tape log screen with the '-' was removed.
- 7) Verify that when using the scheduler, choose a satellite and push the "Pass Gen" button. All orbits for that satellite are displayed. Choose an orbit, push the "Copy pass" button, and then push the "Cancel" button to not schedule the support. If you now choose a different orbit and push the "copy pass", you get the different AOS and LOS time from the first orbit.
- 8) Verify that the X-Band Track Marconi will configure to a frequency other than the default frequency.
- 9) Verify that 100+ satellites do not crash the workstation.
- 10) View a track analysis and see that the low elevation droop in the elevation delta is gone.
- 11) Enter in different time bias for each satellite and observe the time bias change at prepass.
- 12) Schedule a pass just before the pass is to begin and verify that all the configurations are loaded and uplink is successful.
- 13) Stop NTP and verify the time on top level is highlighted red. Start NTP and verify the time on the top level is highlighted in green.
- 14) Use autoephemeris to reschedule a pass with recorders scheduled just before the pass is to begin, verify the recorder start times did not changes to the new pass start time.
- 15) Verify that "broken pipe " error is not seen during other testing.
- 16) Verify that LandSat BER test successfully syncs on at least 3 consecutive tests.
- 17) Verify that a fractional bit rate for the LandSat BER clock can be used.
- 18) Verify the S-Band pass support strip chart is displaying correct numbers.
- 19) Verify the DPS button on the recorder screens.
- 20) Verify Status Log times for each line item now contain the correct fraction of a second.

- 21) Verify that RF Frequency is cleared for offline instruments.
- 22) Verify that blank tapes are automatically associated with the currently scheduled satellite.
- 23) Verify that recorders settings can be changed during a scheduled pass.
- 24) Verify that a print pass gen. button was added to the schedule screen.
- 25) Verify that Master track can be calculated with horizon to horizon times.

Acceptance Procedures:

During Test Tracks on various satellites, please check the following:

- **Master sends schedule and ephemeris to the SCC**
- **SCC configures equipment correctly**
- **No unexplained error messages occur during the track**
- **Command uplink is successful, if required**
- **Data is captured on recorders , if required**
- **Tape Log contains correct counts for passes, if required**
- **PostPass logs are processed by the Master**

Known Bugs or Limitations:

Some open DRs may not be resolved in this release due to their planned inclusion in future releases.

Installation Procedure:

SA personnel will install this release manually. Scott Schaire on site at Poker will test these changes in between live passes. Once approved by the board, it will be used for live passes, and Svalbard will be updated.

To install this release, create a rel2.33 directory in the /home/aaas/releases directory. Copy Install and nasa2.33.tar.Z in to this directory. From /home/aaas/releases/rel2.33, run ./Install nasa2.33.

The installation script will create new bin and etc directories and modify the bin and etc links to look at the new release directories. The old etc directory will be copied to the new etc directory. New executables will be placed in the new bin directory. The following new default files will replace the old default files: sbandSynth.defaults, xbandCh1Synth.defaults, xbandCh2Synth.defaults, xbandCh3Synth.defaults, xbandCh4Synth.defaults, xbandTestSynth.defaults, xbandTrackSynth.defaults. Remove sysdflt.bin from the etc directory. Fixconfig will be run on the configuration files to fix possible corruptions related to the Marconi Track Synthesizer. NTP scripts will be copied in to the root directory.

The .ntpSynclnfo and .start_ntp files in the root directory (cd /) need to be modified for the correct time server IP address.

In the /home/aaas directory, edit the .cshrc file. Edit the station environment variable to identify the station: setenv Station "AGS 11m" or setenv Station "SGS 11m".

Documentation Affected:

N/A

Comments:

John Kollarek will support this software installation from S-A and his number is (770) 903-3624.

Approval:

The software modifications described in this release notice has been validated and accepted.

_____ NASA WGS Project Manager	_____ Date
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SOFTWARE RELEASED:

The software modifications described in this release notice have been completed and released to ground station operations.

_____ System Manager	_____ Date
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_____ NASA Program Monitor	_____ Date
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Attachment 1
NASA 2.5 Files

The bin Directory:

AntennaControlStartup
Nasa
NasaStart
PostPass
Start
Stop
authent
configud
control
dpsHndlr
dpsSupp
dst410
errhandler
eup
executive
getNtpSyncInfo
ioh
pedcont
postPassShell
rci_client
rci_rmt
rci_server
recon
recsch
resetLANGateway
resetLANGateway2
rmqs
schedmon
snyHndlr
start.awk
start_ntp
status_l
stop.awk
stop_ntp
sup
tapelog
terminal
testexec
time_code_handler
track
uactask
winPrint

The etc Directory:

system.ini

Need to remove sysdffit.bin upon installation in order for fractional bit rate for test clock to work.

The etc/hpib directory:

N/A

The etc/config directory:

Need to run config conversion tool here.

fixconfig

The etc/defaults directory:

sbandSynth.defaults

xbandCh1Synth.defaults

xbandCh2Synth.defaults

xbandCh3Synth.defaults

xbandCh4Synth.defaults

xbandTestSynth.defaults

xbandTrackSynth.defaults

The / directory:

.ntpSyncInfo

.start_ntp

.stop_ntp