**Autopilot/Ground Station Software configuration Management**

The GIT open-source configuration management tool is used to maintain an audit trail of all software changes and to do backups on the local ground station PC and on the Safety-Critical Avionics Systems Branch (SCASB) machine “dantzig”. Changes are “commited”A Tortoise “export” command is done to get a tree of source files that are temporarily stored in “exports” on the desktop. This tree below the /trunk/ directory is dragged into the /EARL/ directory to upload a configuration before a deployment.

The configuration-managed Edge 540T data system uses contained in the /EARL/ directory on the SCASB machine “dantzig”. There is a directory corresponding to each aircraft configuration /R2/, /R3/, /R4/, and common directories /EdgePrognoser/, /libs/, /BHMUKF\_mfiles/, and /EdgePrognoser/ which supply subroutines to N803RE (R3) as an example. Under /EARL/R3/BHMUKF is a “setup\_R3\_BHMUKF.m” script.

There is a corresponding copy of these directories under C:\Edge\trunk\R3\BHMUKF\ on the local machine. When it is run from this directory the above directories will be searched for files to compile, link and load the online code.

Selected items:

|  |  |
| --- | --- |
| Edge540R3\_BHMUKF.mdl | Simulink model that loads the PC/104 for flight |
| setup\_R3\_BHMUKF.m | Script to load the Edge540R3 Simulink model and define the flight plan and batteries used. |
| setup\_R3\_BHMUKF\_testharness.m | Script to run the Simulink model in simulation mode (not online) |
| file\_dump.mdl | Simulink model to copy the saved data after a run to the host. |
| Harvest\_R3\_BHMUKF | Script to load filedump.mdl and copy the saved data to the host |
| /GroundStation/LabView\_VI  /slv\_R3\_BHM\_GndStation.vi | LabView diagram to program the ground station display. |
| /config/BatteryData\_10032014.xlsx | Battery parameter spreadsheet |
| /config/CalSheet\_R3\_08192014.xls | ADC calibration factor spreadsheet |
| /config/SignalList\_R3\_08012014.xls | ADC channel list spreadsheet |

Excerpt from software checklist:

**PC/104 Related SW**

PC/104 mdl

Edge540R3\_BHMUKF

PC/104 firmware

xPC Target 5.2

BHM Gnd Station

/slv\_R3\_BHM\_GndStation.vi

Backups are done by using the svnadmin command “hotcopy” on the development PC. A path to the local repository is used to copy “from” and a path to the removable media is used to copy “to”.

svnadmin hotcopy [local directory to copy from] [remote directory to copy to]

Example:

svnadmin hotcopy c:\Edge2014repo\_eb\ e:\svn\_backups\Edge2014repo\_eb\Edge\_03062015\_1