Updating to 10.02 (G3S)

The first two software releases (10.00 & 10.01) for G3 gliders with the SM32 processor supported two drives, C: and D:, on both the flight and science processors. The C: contained all configuration-related files; config, bin, missions, mafiles, and state directories. The D: contained all data-related files; logs and sentlogs directories.

One update in the 10.02 release is the merging of the C: and D: drives. All files, both configuration-related files and data-related files, will be in the same drive. For those familiar with gliders using the Persistor processor, the resulting directory structure will be nearly the same. As a result, there are additional steps that need to be taken when updating a glider to this release.

The following steps can be performed without opening the glider. The “Alternative Approach” steps outline how this process can be completed if opening the glider and removing the microSD card is preferred.

1. **Set glider to boot in shell.**

2. **Backup the contents of both drives for both flight and science. At minimum, ensure you have copies of glider specific or customized files from C: and data files from D:.**

Backup files using freewave or the direct comms high-speed cable (the *Slocum Glider G3 SM32 New Processor Guide* describes high-speed communications, it can be found on the TWR Forum under the Topic “For existing Persistor users moving to the G3S processor”)

Glider specific or customized files are likely to include: autoexec.mi, flight state directory, longterm.sta, config.srf, sbdlist.dat, mbdlist.dat, customized .mi and .ma files, proglets.dat, science state directory, tbdlist.dat, nbdlist.dat, customized .ini files, cache files, etc.

Alternative Approach: Open the glider, remove microSD card (careful, microSD cards are small and fragile!), and back-up data using a card reader. At this point, only the D: drive is stored on the microSD card, so files from C: will need to be sent using freewave or the direct comms high-speed cable.

3. **Flight – Load Release 10.02 and Flash .gex File**

The following commands can be issued to a glider over freewave or the direct comms high-speed cable, glider does not need to be opened.

Power the glider on (should have booted in shell).

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```
> cd d:/
> format -f d:/          # this formats d:/ (this will delete everything!)
> dir                    # check that d:/ is now empty
> mkdir config           # make a directory called “config”
> dir                    # confirm a directory called “config” was created on d:/
> cp c:/config/autoexec.mi d:/config  # copy autoexec.mi from c:/config to d:/config
> dir config             # confirm a copy of autoexec.mi is in config on d:/
> mkdir bin
> cd c:/
> format -f c:/          # this formats c:/ (this will delete everything!)
> mkdir bin
```

Send the flash-flight.gex file from Release 10.02 to glider (using `dockzr` or `zr` command) – this may take a few minutes.

```
> dir                    # confirm flash-flight.gex is now present on the C: drive
> mv c:/*.gex c:/bin     # move flash-flight.gex into the bin directory
> dir bin                # confirm flash-flight.gex is now in the bin directory
> cp c:/bin/flash-flight.gex d:/bin  # put a copy of the .gex file in the bin directory on the D: drive, not a critical step but will save having to re-send later
> flash-flight
> y                      # this should burn the new software and merge the two drives
```

After flashing: There should only be one drive (named C:/). The contents of the old C: drive are gone and the contents of the old D: drive still exist. If you try to type ‘cd d:/’ it should not work.

Now, the rest of the ‘glider’ files from Release 10.02 need to be sent to the glider.

First, send zmext.dat to glider (using `dockzr` or `zr` command) *# this file is what allows the glider to sort files into the appropriate directories, so it is important that this file be placed first…*

`> dir` *# zmext.dat should be sitting on the C: drive*

`> cp c:/zmext.dat c:/config` *# copy zmext.dat into the config directory (alternatively, the mv command could be used)*

`> dir config` *# confirm there is a copy of zmext.dat in the config directory*

`> del c:/zmext.dat` *# delete the copy of zmext.dat on c:/*

Send the Release 10.02 flash-flight.gex file to the glider (`dockzr` or `zr`) – this has already been flashed but was removed when the two drives were merged.

Send all additional files from Release 10.02 and glider specific files (`dockzr` or `zr`).

Complete a quick check to ensure all critical files are present and files are where you expect.

Alternative Approach: An alternative to this step (Step 3.) is listed below.

4. Science - Load Release 10.02 and Flash .gex File

From GliderShell `> consci`

`> n` *# when prompted about running program standalone, choose No*

`> s` *# when prompted to Hit one of the following … exit to shell*

`> boot shell` *# set science to boot in shell*

`> cd d:/`

`> format -f d:/` *# this formats d:/ (this will delete everything!)*

`> dir` *# check that d:/ is now empty*

`> mkdir bin`

`> cd c:/`

`> format -f c:/` *# this formats c:/ (this will delete everything!)*

`> mkdir bin`

Send the flash-science.gex file from release 10.02 to glider (using `dockzr` or `zr` command) - this may take a few minutes.

`> dir` *# confirm flash-science.gex is now present on the C: drive*

`> mv c:/*.gex c:/bin` *# move flash-science.gex into the bin directory*

`> dir bin` *# confirm flash-science.gex is now in the bin directory*

`> cp c:/bin/flash-science.gex d:/bin` *# put a copy of the .gex file in the bin directory on the D: drive, not a critical step but will save having to re-send later*

`> flash-science`

`> y` *# this should burn the new software and merge the two drives*

After flashing: There should only be one drive (named C:/). The contents of the old C: drive are gone and the contents of the old D: drive still exist. If you try to type 'cd d:/' it should not work.

Now, the rest of the 'science' files from Release 10.02 need to be sent.

`> mkdir config`

First, send zmext.dat to glider (using `dockzr` or `zr` command) *# this file is what allows the glider to sort files into the appropriate directories, so it is important that this file be placed first...*

`> dir` *# zmext.dat should be sitting on the C: drive*

`> cp c:/zmext.dat c:/config` *# copy zmext.dat into the config directory (alternatively, the mv command could be used)*

`> dir config` *# confirm there is a copy of zmext.dat in the config directory*

`> del c:/zmext.dat` *# delete the copy of zmext.dat on c:/*

Send all additional science files from Release 10.02 and glider specific files (`dockzr` or `zr`).

Complete a quick check to ensure all critical files are present and files are where you would expect.

Alternative approach: An alternative to this step (Step 4.) is listed below.

5. **Set science to boot in app. Type `ver` and verify the correct release is now present. Remove power from the freewave for 10 seconds to switch back to GliderShell. Type `ver` and verify the correct release is now present.**

6. **Confirm appropriate glider specific files are present (i.e. autoexec.mi, longterm.sta, proglets.dat, mbd/nbdlist, sbd/tbdlist, etc.). Confirm glider boots and operates without error.**

Step 3. *Alternative Approach*: Open the glider and remove the microSD cards (careful, microSD cards are small and fragile!). Using a card reader, format the card (this will delete everything off the card!), then copy the appropriate files from release 10.02 onto the card, along with glider specific files. Place cards back in glider. Power the glider on (should have booted in shell). At this point, both drives still exist. The D: drive has the new software and C: still has the previous version and files. The new release .gex file (found in the bin directory) needs to be copied from D: to C: in order to flash it.

```
> format -f c:/  # this formats c:/ (this will delete everything!)
> dir            # check that c:/ is now empty
> mkdir bin      # make a directory called “bin”
> cp d:/bin/flash-flight.gex c:/bin
                 # copy the .gex file from d:/bin to c:/bin
> dir bin        # confirm flash-flight.gex is now in the bin
directory on C:
> flash-flight
> y              # this should burn the new software and merge the
two drives
```

Step 4. *Alternative Approach*:

```
> consci
> n              # when prompted about running program
standalone
> s              # when prompted to Hit one of the following …
exit to shell
> boot shell     # set science to boot in shell
```

At this point, on the science processor, both drives still exist. The D: drive has the new software and C: still has the previous version and files. The new release .gex file needs to be copied from D: to C: in order to flash it.

```
> format -f c:/  # this formats c:/ (this will delete everything!)
> dir                  # check that c:/ is now clear
> mkdir bin      # make a directory called “bin”
> cp d:/bin/flash-science.gex c:/bin
                 # copy the .gex file from d:/bin to c:/bin
> dir bin        # confirm flash-science.gex is now in the bin
directory on C:
> flash-science
> y              # this should burn the new software and merge the
two drives
```

Software

New releases of Flight and Science code starting with version RELEASE_10_0 can be found at the Slocum Glider user forum. As always, Teledyne Webb Research (TWR) highly recommends reading the ‘readme.txt’ before installing new software on a vehicle.

https://datahost.webbresearch.com/

https://datahost.webbresearch.com/files.php?cwd=/glider/production/readme.txt