Launching Second Balloon

I. Purpose:

This document describes how to launch a second Balloon-Borne Sounding System balloon in case the first balloon flight fails.

If you need to launch a second balloon before the previous sounding is over, the second radiosonde must transmit on a different frequency from the previous one. You will have to 1) manually terminate the current sounding; 2) retune the new radiosonde to a different frequency; and 3) restart the DigiCORA III process. The purpose of this section is to explain how this is done.

Note: This is a deviation from the standard procedure and should be used only under unusual circumstances.

II. Cautions and Hazards:

- Take care during balloon filling and handle gas cylinders as per procedures.
- Launch only under safe meteorological conditions: Wind speeds below 20 m/s, and not during electrical storms.
- The sondes are very fragile, so handle them carefully.

III. Requirements:

- DigiCORA III
- RS92 radiosonde package, SGPD (w/ 9.5V battery)
- GC25 Ground Check Set (GCS)
- GPS omni-directional antenna
- Meteorological balloon (350 grams)
- Cable ties or string to tie off balloon
- Cutters
- Helium or “balloon gas” for lifting gas
- Balloon Launcher Cart
- Safety glasses
- Balloon filing valve and hose
- Timer or stopwatch
- BBSS PC with BBSS and PCMF software

IV. Procedure:

A. Terminating an Active Sounding (i.e., first balloon)

1. Click on the “Cmd[F2]” button as shown below (Figure 1).

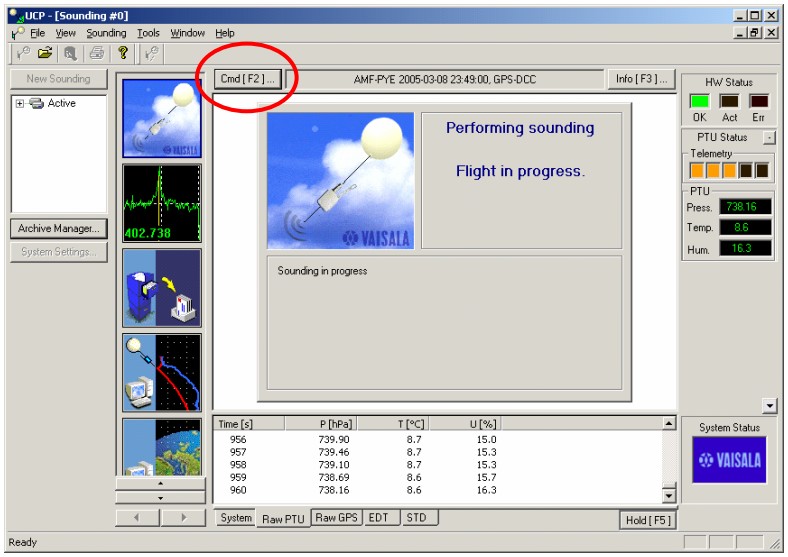

Figure 1

1. Click on the “Manual Stop” button as shown below (Figure 2).

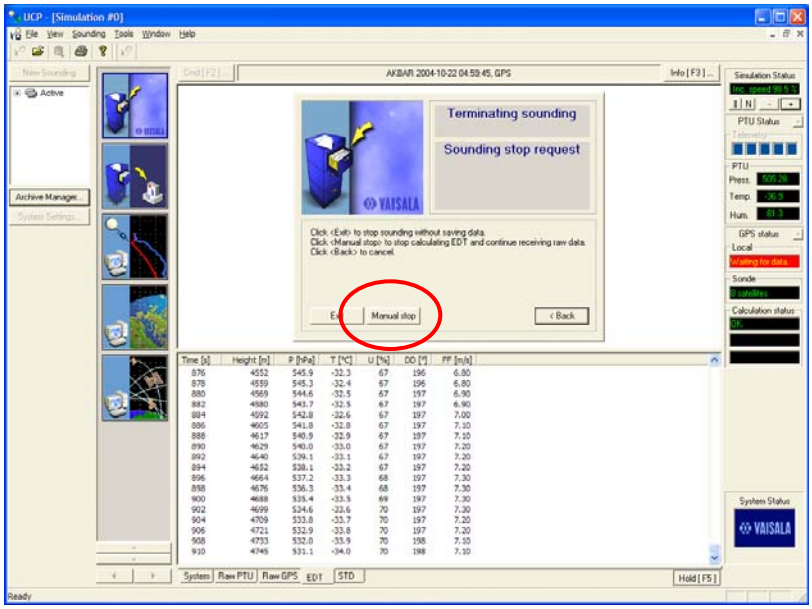

Figure 2

2. Click “Next” as shown below (Figure 3).

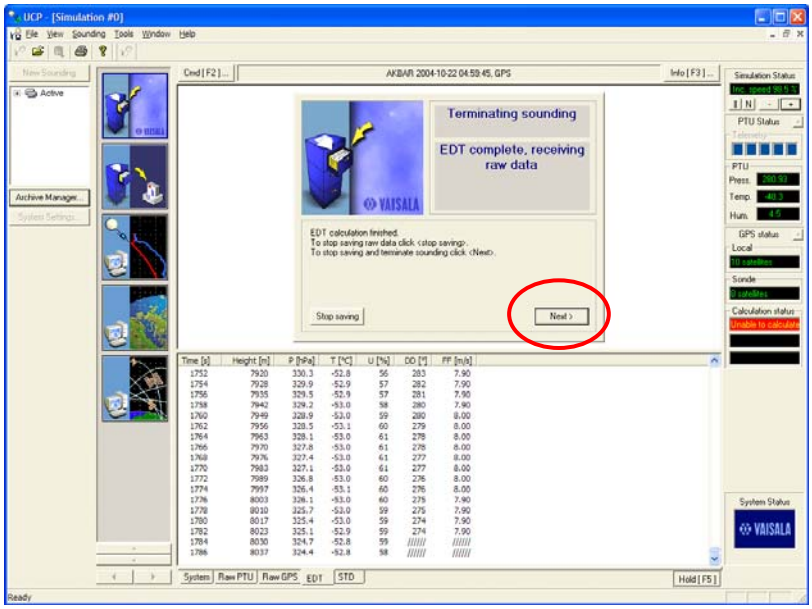

Figure 3

3. Click “Next” if requested for Climat statistics (see Figure 4).

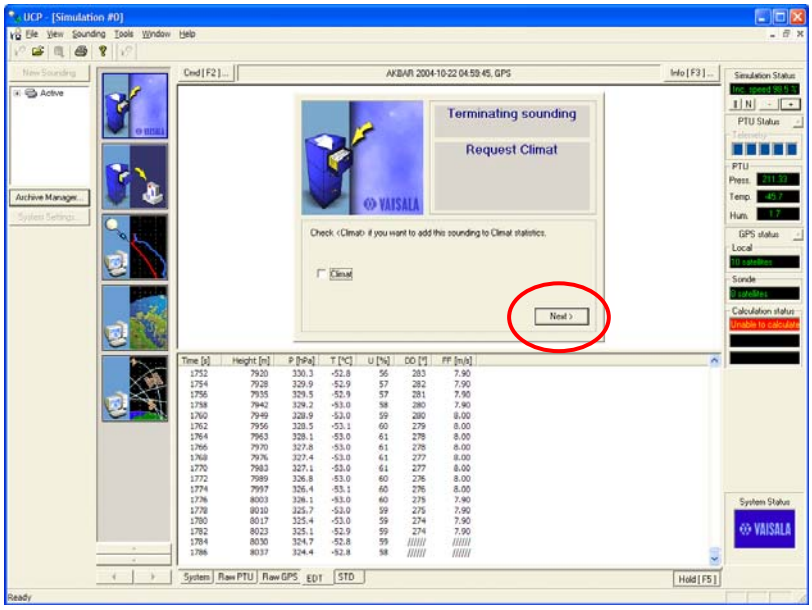

Figure 4

4. Click “Next” if requested for archive (see Figure 5).

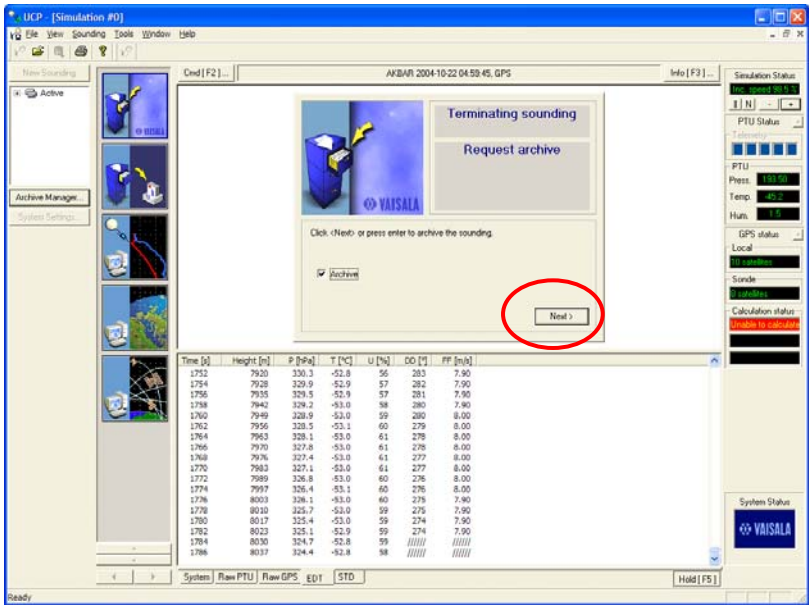

Figure 5

5. The system should now have archived the previous sounding.
6. Go back to *AMF BBSS Launch Operations, PRO(BBSS)-022,* and follow **steps 1 through 14** to prepare the balloon.

B. Reconditioning Radiosonde

8. Follow **steps 15 through 22** in *AMF BBSS Launch Operations* to recondition the RS92 radiosonde.
9. At this point, the display on the GC25 Ground Check Set should read, “FREQUENCY 402.74 MHZ” (or something close to 403).
10. Push one of the arrow buttons until the display reads “YES.”
11. Push “Select” when prompted to “TUNE FREQ PERIOD?”
12. Push the left (<) scroll button until the display reads 401.5.
13. Push “Select.”
14. Select “NO” when prompted to “TUNER DISABLED SET TIME?”
15. Push the “Select” button in response to the prompt “GRND CHK MODE PRESS SELECT.”

C. DigiCORA III Program

16. Go to the BBSS computer and start the DigiCORA III program, if it has not already been running. You should see the screen shown bellow (Figure 6).

Figure 6

17. Click on “New Sounding” in the upper left portion of the DigiCORA window.
18. Go to **step 28** in *AMF BBSS Launch Operations*, **but before the system obtains coefficients from the radiosonde, open the signal spectrum screen** (see Figure 7). This should be done fairly quickly after the system finishes it start up checks.
19. Enter “401.5” into the frequency box of the signal spectrum screen (see Figure 7).
20. Click “Find.” You may see two peaks, the new radiosonde at 401.5 and the previous one at 402.74 (or something close to 403).

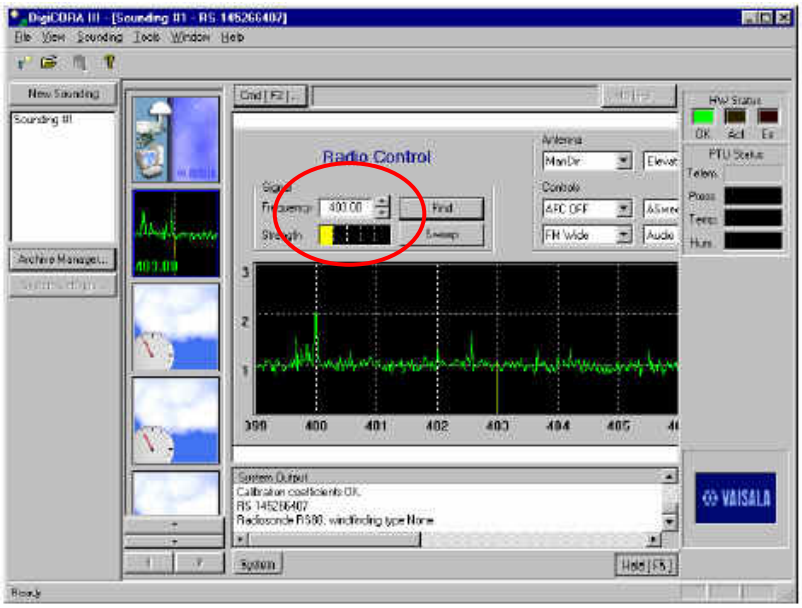

Figure 7

21. Return to the control screen by clicking on the upper left picture with a balloon (see Figure 8).

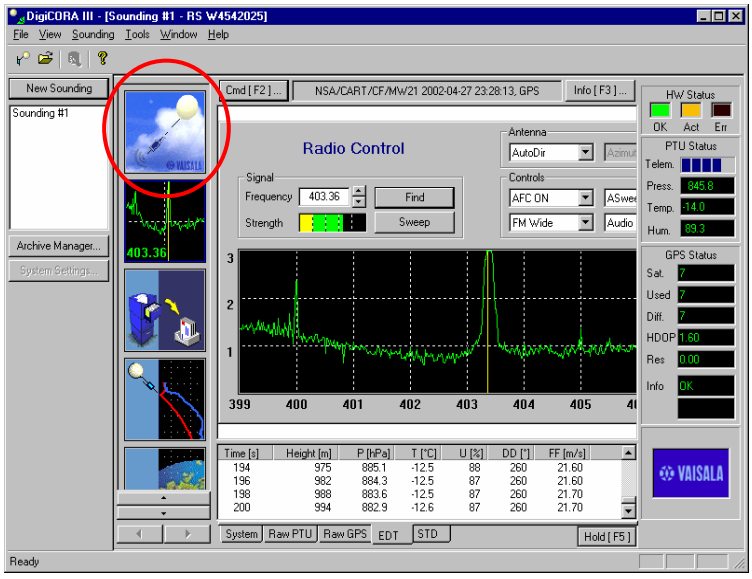

Figure 8

22. Return to **step 30** in *AMF BBSS Launch Operations* and continue as you would normally.

IV. References:

1. AMF BBSS Launch Operations, PRO(BBSS)-022.

V. Attachments:

None.