

Operators Manual

SMART-HALO

Operating SMART-HALO on HALO



This is a short manual on how to operate SMART-HALO. It is mainly based on the "Checklist SMART-HALO" but additionally contains screenshots and pictures for illustration. If you connect to ASP04, 06 or 07 via remote desktop, here are the user credentials. However, everything can be run via AnyDesk or TeamViewer. You need the IP addresses for that. This is the setup for HALO-(AC)³:

- Operator Notebook LIM (Lenovo ThinkPad)
 - User: SMART
 - Pwd: SMART123!
 - IP: assigned via DHCP

- ASP04:
 - User: ASP04
 - Pwd: Passwort
 - IP: 192.168.1.204
 - TeamViewer Pwd: Passwort
 - AnyDesk Pwd: SMART123!

- ASP06:
 - User: Strahlung
 - Pwd: Passwort
 - IP: 192.168.1.205
 - TeamViewer Pwd: Passwort
 - AnyDesk Pwd: SMART123!

- ASP07
 - User: Strahlung
 - Pwd: Passwort
 - IP: 192.168.1.203
 - TeamViewer Pwd: Passwort
 - AnyDesk Pwd: SMART123!

1 Pre-Flight

1. Turn on RPDB 28 V (Fig. 1)



Figure 1

2. Switch Power on at ASP04 (Fig. 2)

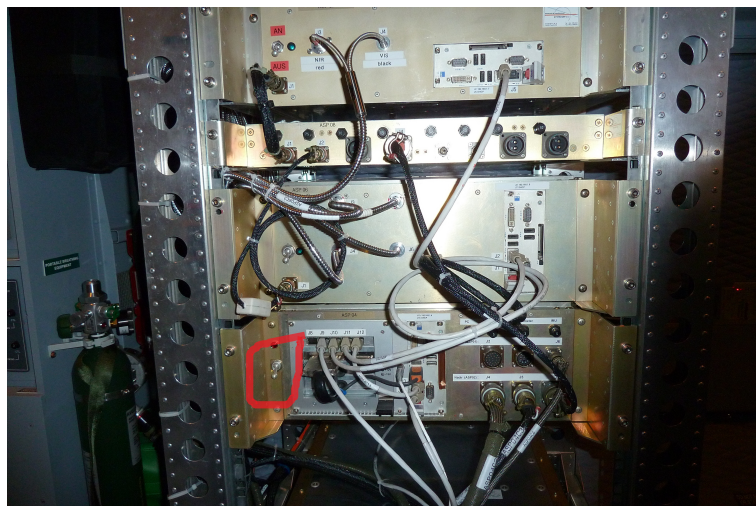


Figure 2

3. Press 4 breakers on ASP04 labeled “PC”, “Amplifier”, “Inclinometer”, and “IMU” (Fig. 3)

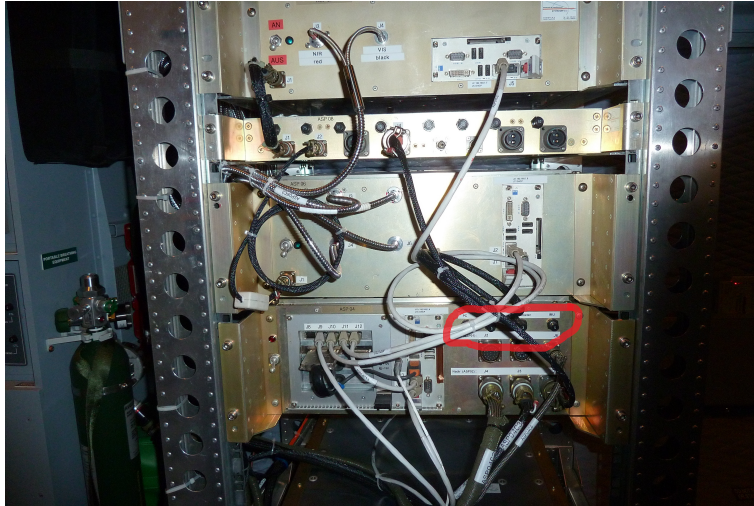


Figure 3

4. Switch on ASP06 and ASP07 (Fig. 4)

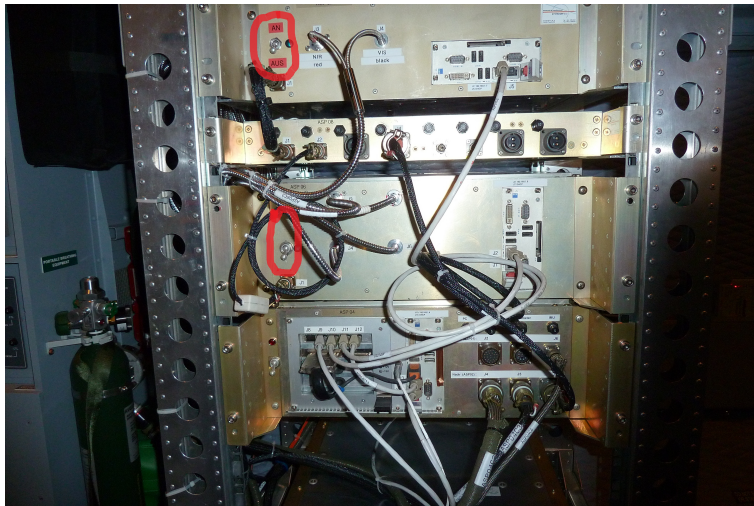


Figure 4

5. From Operator Notebook connect to ASP04 (192.168.1.204) via AnyDesk (pwd:SMART123!), TeamViewer (pwd: Passwort) or use Remote Desktop (user: ASP04, pwd: Passwort)
6. Double click "SPARM-DRIVE-SINGLE-AXIS.vi"

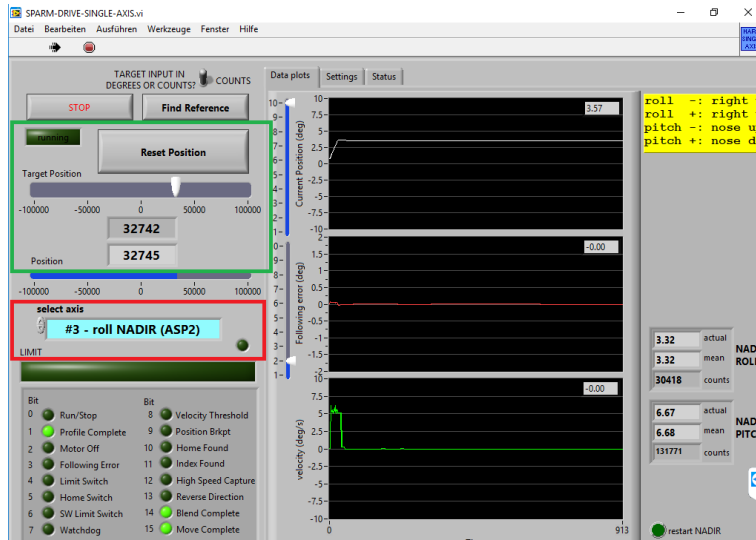


Figure 5

7. Under "select axis" choose "#3 roll NADIR (ASP2)" (Fig. 5 red frame)
8. Move the lever under "Target Position" (Fig. 5 green frame) to the left and right limit (LIMIT bar turns red) and use "Reset Position" in order to have roughly equal values for the left and right limit (+- 10,000 counts).
9. Repeat for "#4 pitch NADIR (ASP02)"
10. Stop Program with "Stop" button and close program
11. Double click on SPARM-Stabilization.vi
12. Wait until "Searching Homes" is finished (Fig. 6)

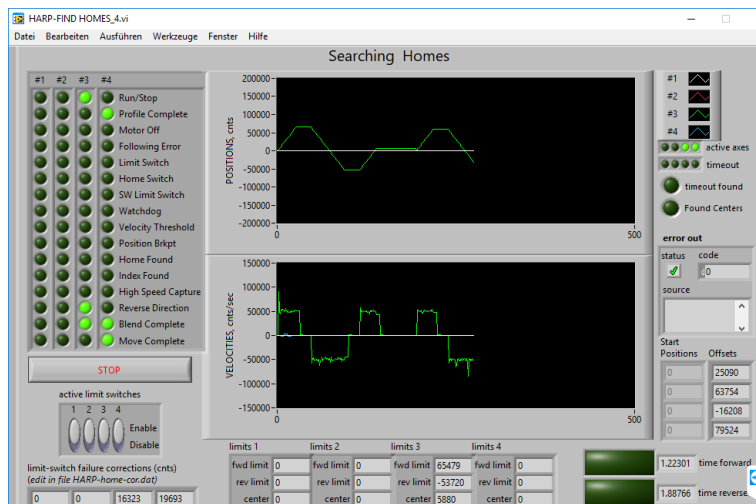


Figure 6

13. Check if Stabilization is running

14. □ Start "NAVCommand" on Desktop; aircraft must not move!!!

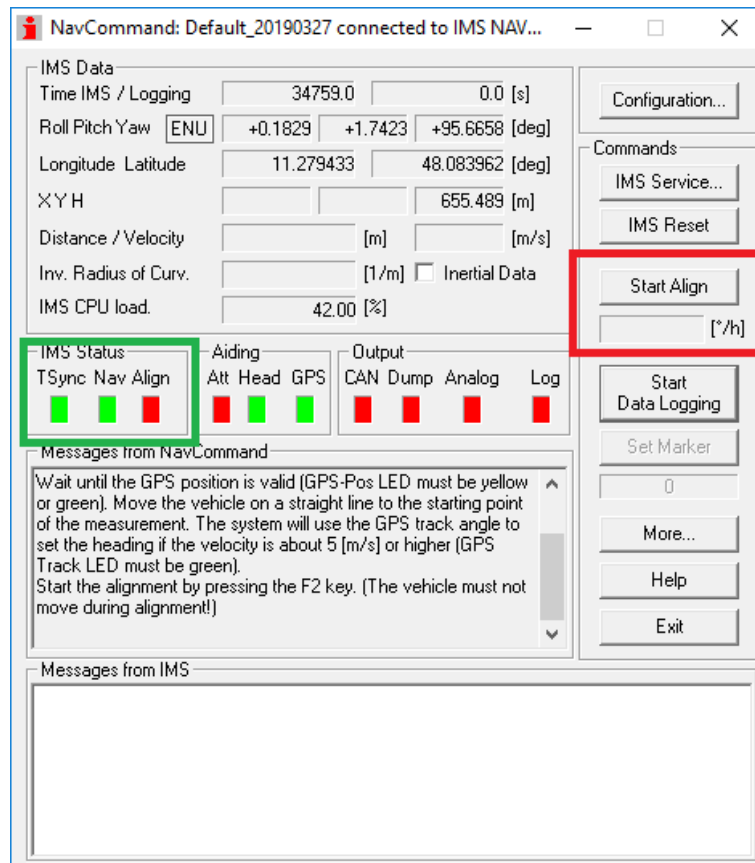
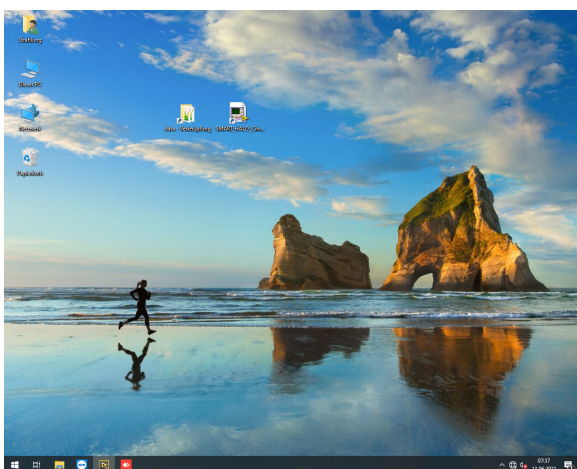
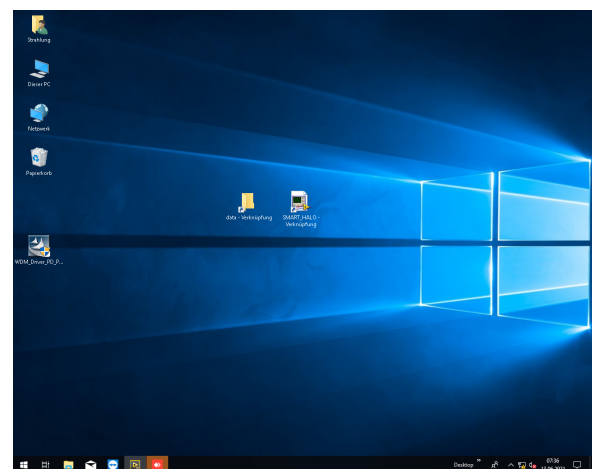


Figure 7

15. □ If Align flag is red (Fig. 7 green frame), click "Start Align" (Fig. 7 red frame) and wait 30 seconds. Drift should be a single digit or a small two digit number.
16. □ Use AnyDesk (pwd: SMART123!) or TeamViewer (pwd: Passwort) from the Operator Notebook to access ASP06 (192.168.1.205) and ASP07 (192.168.1.203) (see Fig. 8. Check if LabView is running; especially for known warming-up problems during first 15 min.



(a) ASP06 Desktop



(b) ASP07 Desktop

Figure 8

17. □ Check if data files are written ("data - Verknüpfung" on desktop) on both PCs

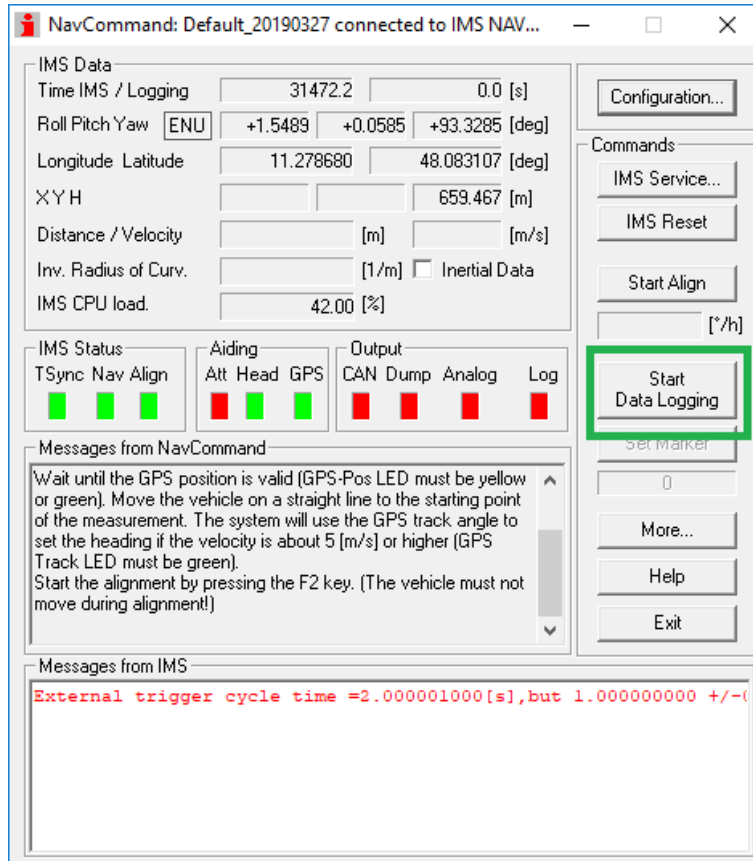


Figure 9

Short before door will be closed and operators have to buckle up

18. On ASP04 Press "Start Data Logging" in NAVCommand (Fig. 9)

2 In-Flight

1. Every 30 min check if systems are running via TeamViewer \Rightarrow if not (hardware error, spectrometer error) \Rightarrow Trouble Shooting
2. Check that shutters are opening / closing in ASP06 and ASP07 (there are noticeable dips in the time series every time the shutter closes, depending on the dark measurement configuration. (HALO-(AC)³: At the beginning of every one minute file)
3. Check if spectrometers are saturated. Counts should not exceed 32,000 for both SWIR and VNIR spectrometer! \Rightarrow if yes, set integration time to lower value (optimal: 100, 200, 300, 500 or 800ms) (avoid this if possible). (CirrusHL: ASP07 has one defect pixel in the SWIR spectrometer, ignore this pixel for saturation!)

3 Trouble Shooting

ASP06/07:

- If shutters are not working (no dips in signal)
 - First try to knock on the housing close to the shutter (at ASP07 next to J3, at ASP06 next to J3 and J5)

- In case this is not working \Rightarrow try to restart the computer by pressing the big red "Shutdown" buttons or normal Windows reboot if the buttons do not work
- If ASP06 or ASP07 do not respond
 - Restart TeamViewer
 - Try to restart the computer (Windows reboot or Shutdown Button and switch off and on)
 - If windows does not react anymore \Rightarrow switch the power off and on again with the lever
- IF ASP06/07 do not detect the Spectrometer USB (after start up or switch to Mission Power)
 - Stop measurement and close LabView
 - Open the Windows Device Manager
 - Under USB-Devices select the erroneous InterfaceCard and uninstall it
 - restart the PC

ASP04: Do not turn off during flight!

4 After Landing

1. Connect to ASP06 and ASP07 (192.168.1.205 and 192.168.1.203)
2. Press the big red "Shutdown" buttons or shutdown PC normally if that fails
3. Connect to ASP04
4. Press "Stop Data Logging" in NAVCommand (same button as "Start Data Logging"), Press "Exit" (see Fig. 7)
5. Stop "HARP-STABILIZATION.vi" by pressing "STOP HARP STABILIZATION" and close program (Fig. 10 green Frame)

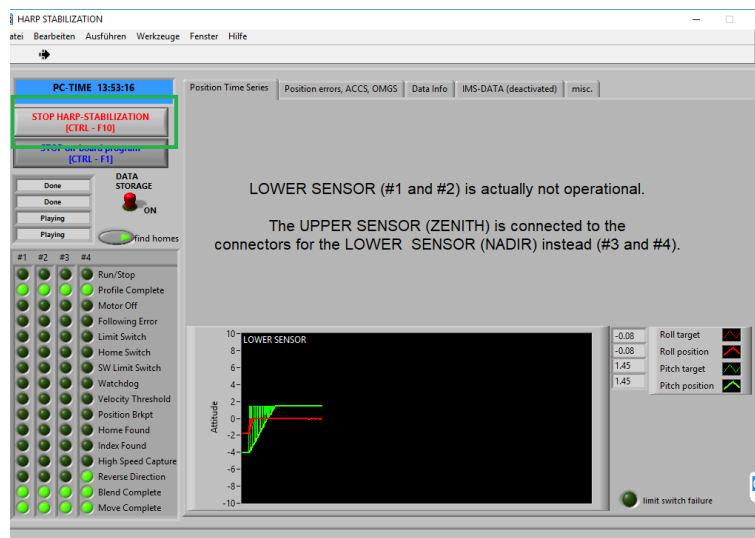


Figure 10

6. Shut down ASP04

7. Wait 2 min, then pull 4 breakers on ASP04 labelled "PC", "Amplifier", "Inclinometer", and "IMU"
8. Switch Power off at ASP04, ASP06, and ASP07
9. Turn off RPDB 28 V