tailBeaconX

TSO Service Bulletin

Software Upgrade to ADS-B 3.4.0

TSO Service Bulletin
UAV-1006610-001 Rev A

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Patent uavionix.com/patents

1 Revision History

Revision	Date	Comments
A	4/7/2022	Initial release

2 Warnings / Disclaimers

uAvionix is not liable for damages arising from the use or misuse of this product.

This equipment is classified by the United States Department of Commerce's Bureau of Industry and Security (BIS) as Export Control Classification Number (ECCN) 7A994.

These items are controlled by the U.S. Government and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. government or as otherwise authorized by U.S. law and regulations.

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4 Planning Information

4.1 Distribution / Eligibility

The Accomplishment Instructions contained in Section 8 may only be performed by appropriately authorized personnel.

4.2 Applicability

This Service Bulletin applies to the TSO-authorized uAvionix tailBeaconX UAV-1003648-001 with ADS-B software release 3.3.1 or previous installed.

Use Table 4-1 to determine applicability of the software update.

P/N Marking	Applicability
UAV-1003648-001 MOD 0	Verify by procedure
UAV-1003648-001 MOD 1	Verify by procedure

Table 4-1 Applicability

Parts identified above as “Verify by procedure” may have ADS-B software release 3.3.1 or previous installed. To determine what version of software is installed, see section 7.1.

4.3 Description

This Service Bulletin provides instructions for loading uAvionix tailBeaconX UAV-1003648-001 with updated ADS-B software release 3.4.0.

4.4 Changes

This update improves perceived Mode-S and ADS-B performance as well as additional robustness checks for various user configurations. The change is considered minor per 14 CFR 21.619. In detail, the changes are as follows:

- NACv limiting as described in AC 20-165B.
- Legacy XP Transponder Protocol support.

4.5 Approval

The software described in this Service Bulletin continues to meet the previously authorized TSOs. TSO articles require separate airworthiness approval for installation in or on a type-certificated aircraft. Implementation of this TSO Service Bulletin may require additional approval, such as

application of an updated STC, through use of the FAA Policy Memorandum “Installation Approval for ADS-B OUT Systems”, or a field approval.

4.6 Time Required

Up to 30 minutes is required to perform this update procedure.

4.7 Weight and Balance

No change.

4.8 Electrical Load Data

No change.

4.9 Software Accomplishment

No change.

4.10 Applicable Publications

The following documents are applicable to the ADS-B software release 3.3.1.

Title	Part Number	Revision
tailBeaconX TSO User and Installation Guide	UAV-1004270-001	A

Table 4-2 Applicable Publications

5 Required Items

uAvionix offers two methods to update the ADS-B software on a tailBeaconX. Both methods result in the same ADS-B software update, but require different hardware and software tools to perform the update.

5.1 Software Update via Beacon Firmware Update Tool (Method 1)

The following items are required to perform the software update via the uAvionix Beacon Firmware Update Tool:

1. A Windows PC (Windows 10 or higher) with Wi-Fi networking.
2. uAvionix “Beacon Firmware Update Tool” UAV-1002767-001 application for Windows, version 1.2.1 or higher.

3. The following software update file(s):

Item	Filename	SHA1 Hash
ADS-B	UAV-1002393-005-Ping200XCertified-3_4_0-52a58be.uav	c43236e8 a08849b9 c419e593 b76f09c6 3ca6c39b

Table 5-1 Software Update Files

uAvionix software update files as well as the Beacon Firmware Update Tool are available for download from the uAvionix Support website at no charge, at:

https://uavionix.com/support/tailBeaconX/

5.2 Software Update via Web Browser (Method 2)

This method allows for the ADS-B software update to be performed over the tailBeaconX's Wi-Fi using a standard web browser.

The following items are required to perform the update via this method:

1. A PC, Smartphone or tablet with Wi-Fi networking and the Chrome web browser.
2. The software update file(s) outlined in Table 5-1 Software Update Files.
3. "skyBeacon Installer" Smartphone App 1.6.16+

6 Update Notes

All tailBeaconX configuration settings will be preserved during this update procedure.

7 Update Procedure

7.1 Determining Existing ADS-B Software Version and Part Number

Before attempting a software upgrade, determine if the tailBeaconX is running a legacy software version. This can be accomplished by following steps in the "tailBeaconX TSO User and Install Guide" UAV-1004270-001 Section 9.4. Once the software part number and software version

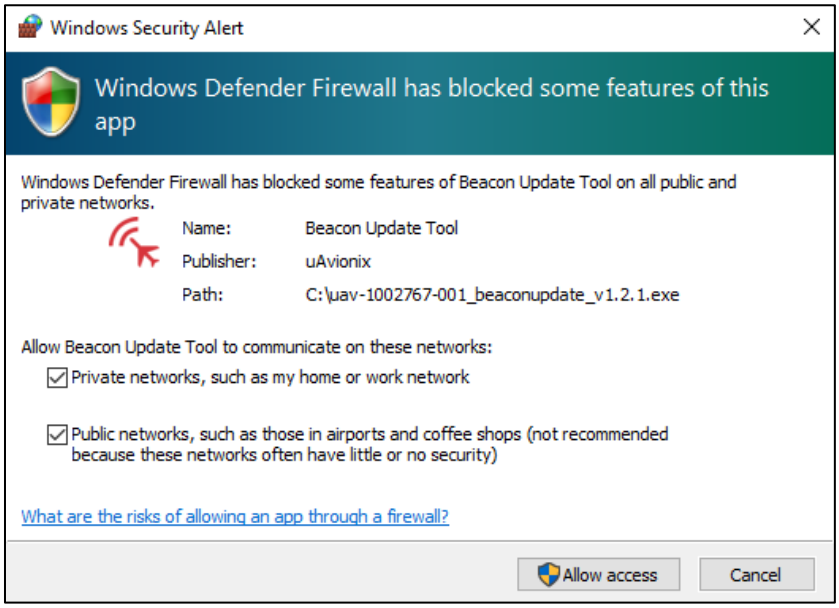
information are obtained, refer to Table 7-1 to determine if a software upgrade is necessary.

ADS-B Software P/N	Version	Status
UAV-1002393-003	3.1.1	Legacy Software – Conduct Software Update
UAV-1002393-004	3.3.1	Legacy Software – Conduct Software Update
UAV-1002393-005	3.4.0	Latest Software – No Update Required

Table 7-1 Software Part Numbers Requiring Updating

7.2 Method 1 – "Beacon Firmware Update Tool" Update Procedure

1. Run the uAvionix "Beacon Firmware Update Tool" v1.2.1 or higher (e.g. UAV-1002767-001_BeaconUpdate_v1.2.1.exe) on the Windows PC.
2. When first run, Windows may ask for permission to communicate on the network. You must allow the tool to communicate. Check the boxes for both "Private networks" and "Public networks" as shown below, and select "Allow access".



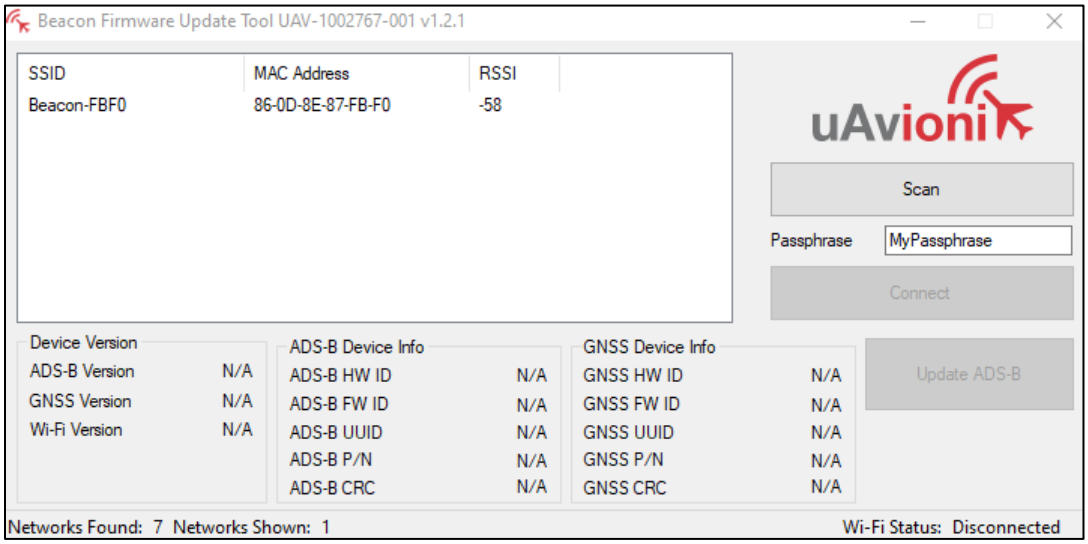
3. tailBeaconX does NOT need to be removed from the aircraft, if installed. Apply aircraft, ground, or bench power to the tailBeaconX, as appropriate. When installed in an aircraft, this will require turning on power to the position light. Ensure the tailBeaconX is receiving power by verifying the tailBeaconX's white position light is illuminated.
4. Through the appropriate control interface, such as the AV-30-C, ensure the tailBeaconX is in STANDBY to enable tailBeaconX Wi-Fi.

   CAUTION: Do NOT turn off power to the tailBeaconX during the update process.

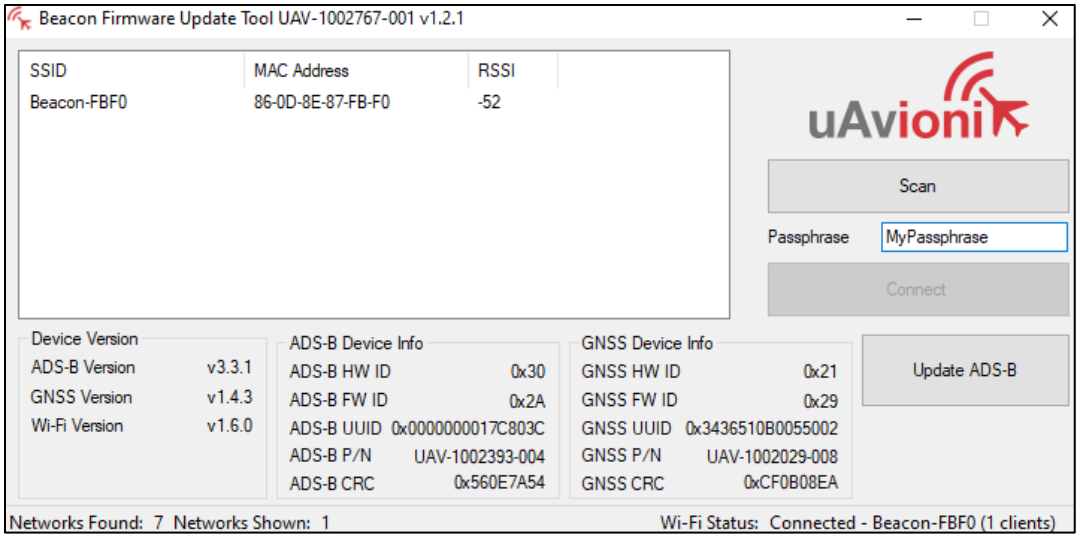
5. tailBeaconX must be located near the Windows PC to ensure proper wireless connectivity.

   CAUTION: Direct line of sight and less than 20 feet of separation between PC and tailBeaconX are recommended.

6. Press "Scan" in the tool. A list of uAvionix Beacon products will populate the list in the upper left. Select the appropriate SSID of the tailBeaconX, as noted on the card included with the box or your maintenance records. e.g. Beacon-FBF0



7. Enter the Wi-Fi Passphrase noted on the card included with the box or your maintenance records.
8. Press "Connect".



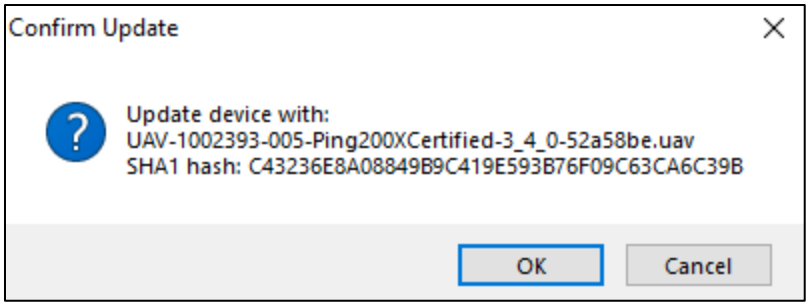
9. Observe the status bar on the bottom of the window. It should indicate that it is connected to the Beacon Wi-Fi network. Once connected, review the Device Version information. Ensure that the device is currently running ADS-B Version v3.3.1 or previous. If the tailBeaconX is already running ADS-B v3.4.0, **do not continue** with these instructions.

10. Ensure all other Wi-Fi devices are disconnected from the tailBeaconX. For example, disconnect any iOS or Android devices that may automatically connect. The status bar will indicate how many Wi-Fi clients (devices) are connected to the tailBeaconX, and should indicate 1 client.

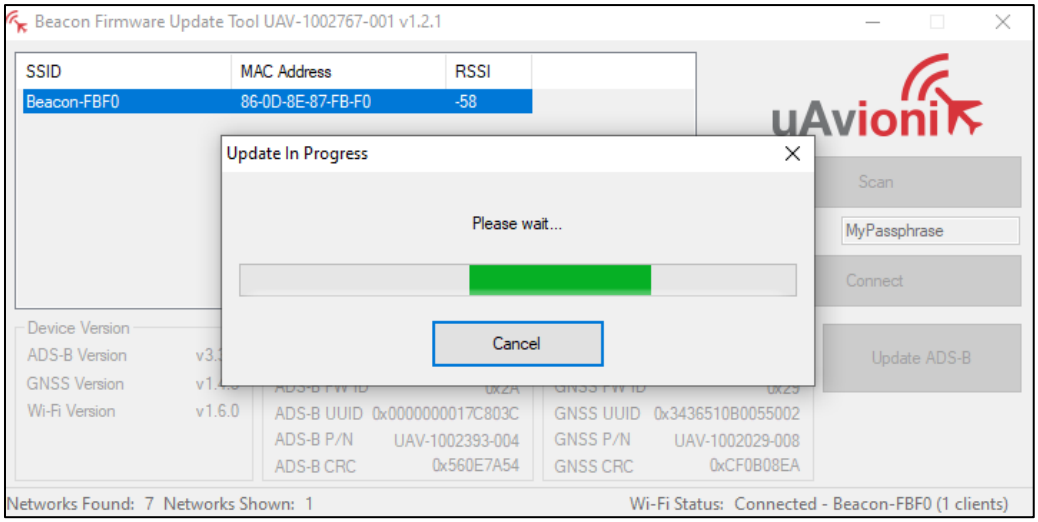
    CAUTION: Any additional Wi-Fi devices connected to the tailBeaconX may cause the update to fail.

11. Press “Update ADS-B”. A file dialog will appear. Select the file appropriate for the ADS-B item as detailed in Table 5-1 Software Update Files. In this case, the file is “UAV-1002393-005-Ping200XCertified-3_4_0-52a58be.uav”. Press “Open”.

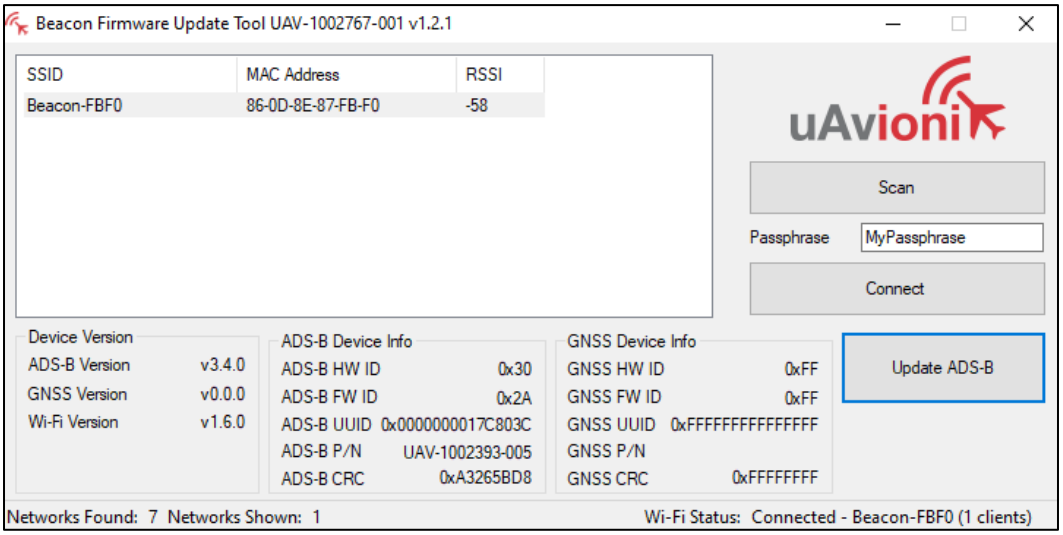
12. A dialog will appear to confirm the file name and integrity. Review the filename and SHA1 hash against the data in Table 5-1 Software Update Files. Press “OK” if correct.



13. The update will commence. Wait for the process to complete.



14. On completion, the progress dialog will close and the tool main screen will show the updated version and CRC information. Note, the GNSS information will be unavailable while Wi-Fi is enabled.



15. Complete the Post-Accomplishment Verification instructions in Section 7.3.

16. After verification, remove power from the tailBeaconX.

7.3 Method 2 – Web Browser Update Procedure

1. Power on the tailBeaconX.
2. From an appropriate control interface, such as the AV-30-C, ensure the tailBeaconX is in STANDBY to enable Wi-Fi.
3. From the PC, Smartphone or Tablet, connect to the tailBeaconX Wi-Fi. Select the appropriate SSID of the tailBeaconX, as noted on the card included with the box or your maintenance records.
4. From a Chrome or equivalent web browser, navigate to “http://192.168.4.1”.

5. Click “Update” to the right of the ADS-B Version. (Second row)

6. Click “Choose File” and select the .uav file Select the file appropriate for the ADS-B item as detailed in Table 5-1 Software Update Files. In

this case, the file is “UAV-1002393-005-Ping200XCertified-3_4_0-52a58be.uav”. Press “Update”.

7. The ADS-B software update process will take approximately 30 seconds. Observe the circular status indicator on the right, its motion indicates the update is in progress. Do NOT remove power at this time.

8. Upon success completion, the tailBeaconX will return to the main software update page. Note, the ADS-B Version information will **NOT** indicate the latest software version. The unit must be power cycled to display latest ADS-B Version information. See Section 8 for verification instructions.

9. Power off tailBeaconX.

8 Post-Accomplishment Verification

Verify the software load by performing *one* of the following procedures outlined in sections 8.1 and 8.2.

ADS-B Software P/N	Version	CRC
UAV-1002393-005	3.4.0	A3265BD8

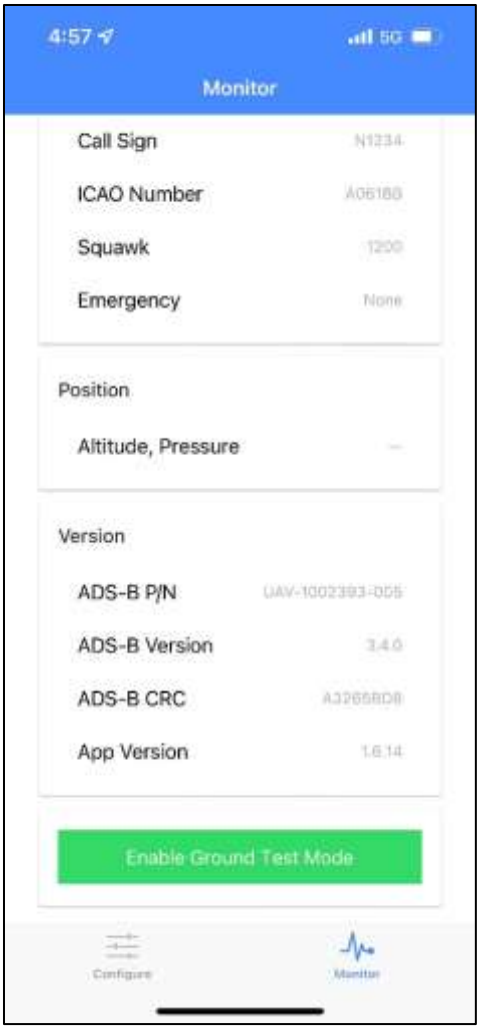
Table 8-1 Accomplishment Versions

8.1 Beacon Firmware Update Tool Verification

1. In the “Beacon Firmware Update Tool”, verify the “ADS-B Version”, “ADS-B P/N” and “ADS-B CRC” from Section 7.2 Step 14, matches those shown in Table 8-1 Accomplishment Versions.
2. If any post-accomplishment check fails, please contact uAvionix support, as guided in Section 10.

8.2 “skyBeacon Installer” Smartphone App Verification

1. Power on the tailBeaconX.
2. From an appropriate control interface, such as the AV-30-C, ensure the tailBeaconX is in STANDBY to enable Wi-Fi.
3. From the skyBeacon Smartphone app, connect to the tailBeaconX Wi-Fi.
4. From the “skyBeacon Installer” Smartphone app’s Monitor page, verify “ADS-B P/N”, “ADS-B Version” and “ABS-B CRC” match those shown in Table 8-1 Accomplishment Versions.



5. If any post-accomplishment check fails, please contact uAvionix support, as guided in Section 10.

9 System Checkout

Perform the post-installation checks procedure as described in “tailBeaconX TSO User and Installation Guide” UAV-1004270-001 Sections 9.4 and 9.5.

10 Support

For additional questions or support please visit:

http://www.uavionix.com/support/

11 Maintenance Record

When post-accomplishment verification and system checkout is completed, make appropriate entries in the Aircraft Maintenance Log Book.

Maintenance Record

Service Bulletin UAV-1006610-001 Rev A for tailBeaconX UAV-1003648-001 has been complied with.

A copy of this form must be submitted by visiting:
https://uavionix.com/logbook/

Date:	By:
Aircraft Information	
Make:	Model:
Serial Number:	Registration Number:
tailBeaconX Information	
Serial Number:	
Customer Information	
Name:	
Email:	
Telephone:	
Address:	