

# 9 Series: Upgrade to Horizon 5

## Step by Step Guide



 **MORRIS SFE**

Topcon Apollo - X35 System  
March 2026

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This guide will show the process for updating a Topcon X35 monitor to Horizon 5 from the last supported version of Horizon 4 (4.04.516) for the Morris 9 Series Air Cart. This update will require **up to 4 hours** to upgrade all components of the system. The guide will show the steps required to upgrade any associated ECUs (CM-40 & EM-24). Our example will be done on an ICT (sectional control) cart, if doing this upgrade on a VR only (no sectional control) cart, there may be fewer ECU that need upgrades.

**Note:** Jobs will not be transferred over to Horizon 5. This upgrade should not be done in the middle of a job as coverage will not carry over to the new version. A new job (task) will need to be started after the upgrade is completed.

**Note:** All ECUs on the seeding system must be updated prior to upgrading the monitor firmware as they cannot be upgraded once the monitor is on Horizon 5. **It is crucial that the upgrade process is done in the correct order..**

This guide will show step by step how to do the following, in this order:

- Upgrade CM-40 #1 from **7.08.01, 3.0.13** to **10.02.02, 3.3.6**
- Upgrade EM-24 #1 from **0.3.1, 0.3.1** to **0.4.1, 0.4.1**
- Upgrade any additional CM-40/EM-24 (ie. ECUs for Pack control/Liquid/NH3)
- Upgrade the X35 from **4.04.516** to **5.02.27**

#### Items required for update:

1. A **supported USB stick** containing the required upgrade files.
  - o Topcon's approved model is the **Kingston DataTraveler Kyson (DTKN/64GB)**



OR

- o A low-capacity USB stick of **16GB or less** from a reputable manufacturer can also work if you have one on hand.

**SAMSUNG SanDisk**  **Kingston**  
TECHNOLOGY

**Note:** Topcon Monitors are very selective about which USB sticks will work for a monitor firmware upgrade. Make sure you have a known working USB stick prior to beginning the update process. Use the **Topcon approved model** for best results.

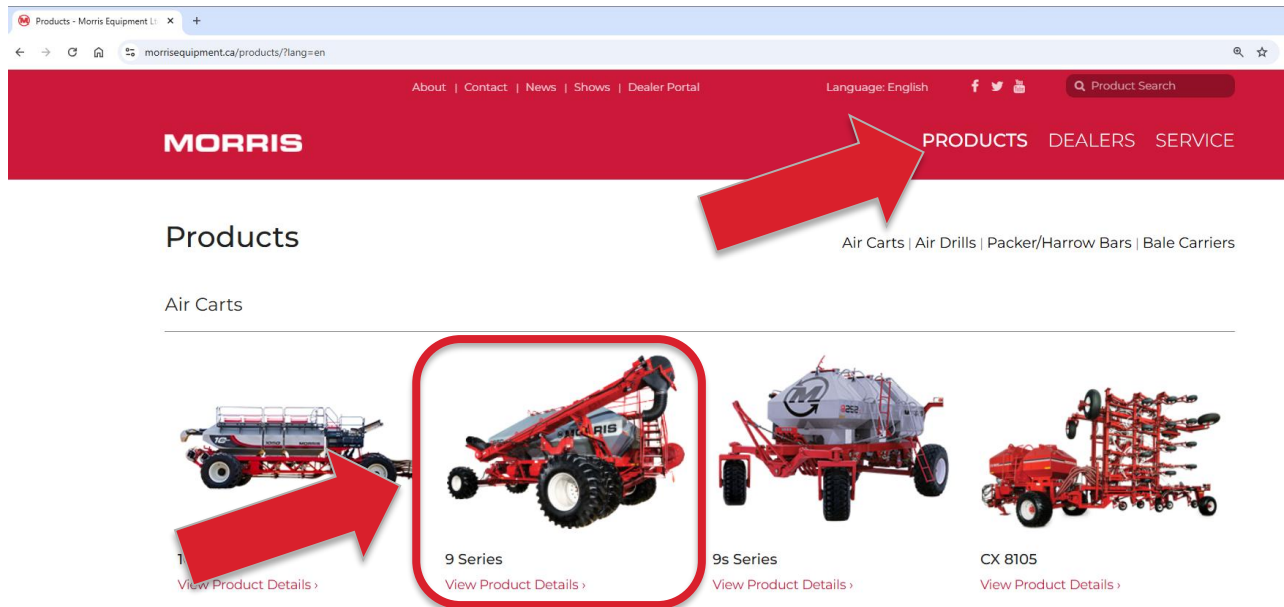
2. A **secondary USB stick** (any model with capacity over 4GB) for data transfer prior to updating.
3. The **upgrade files** – found on the Morris Website.

## Part 1: Preparing files on the USB Stick

The following Firmware files are required on a USB stick to complete the upgrade process:

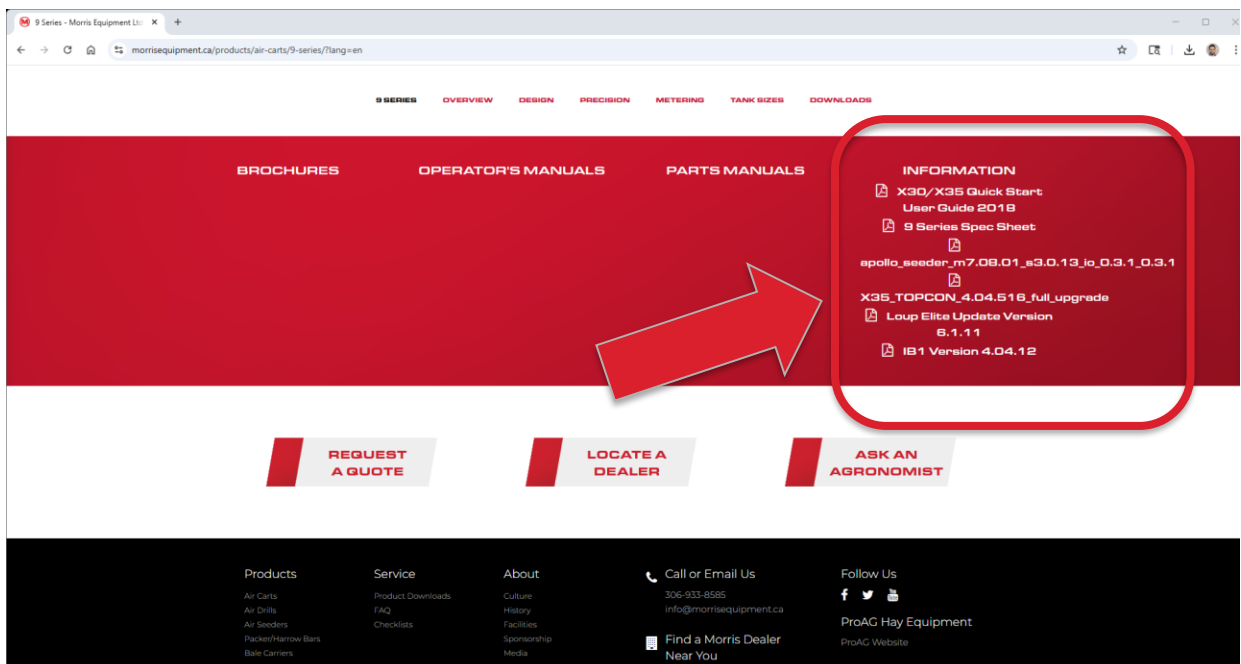
- Apollo Seeder Firmware for the CM-40/EM-24
- Horizon Firmware for the X35 monitor

1. On a computer, open the **Morris Equipment website** and navigate to **Products → 9 Series**



2. Scroll down to the **bottom of the page**. Under **Information**, download the following files:

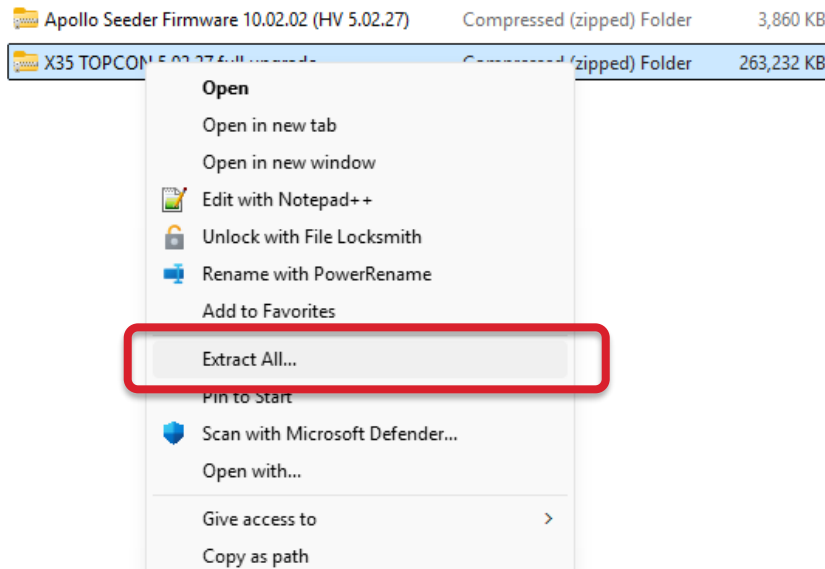
- X35 TOPCON 5.02.27 full upgrade
- Apollo Seeder Firmware 10.02.02 (HV 5.02.27)



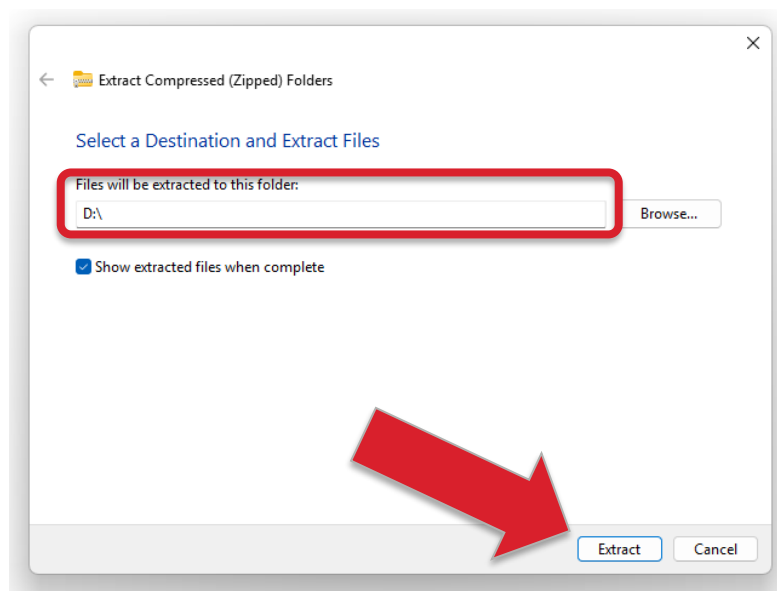
- These files will be saved as zip files onto your computer. Navigate to your Downloads folder that they have been saved in. The zipped folders will look like this:

Apollo Seeder Firmware 10.02.02 (HV 5.02.27)	Compressed (zipped) Folder	3,860 KB
X35 TOPCON 5.02.27 full upgrade	Compressed (zipped) Folder	263,232 KB

- Insert your **USB stick** into the computer.
- Right click on one folder and select **Extract All...**



- Select the USB Drive as your destination folder and hit **Extract**.



- Wait for the files to be extracted and then repeat this process for the other zipped folder. Both can both be transferred onto the same USB Stick.

8. You will end up with the following files on your USB stick if you are successful:

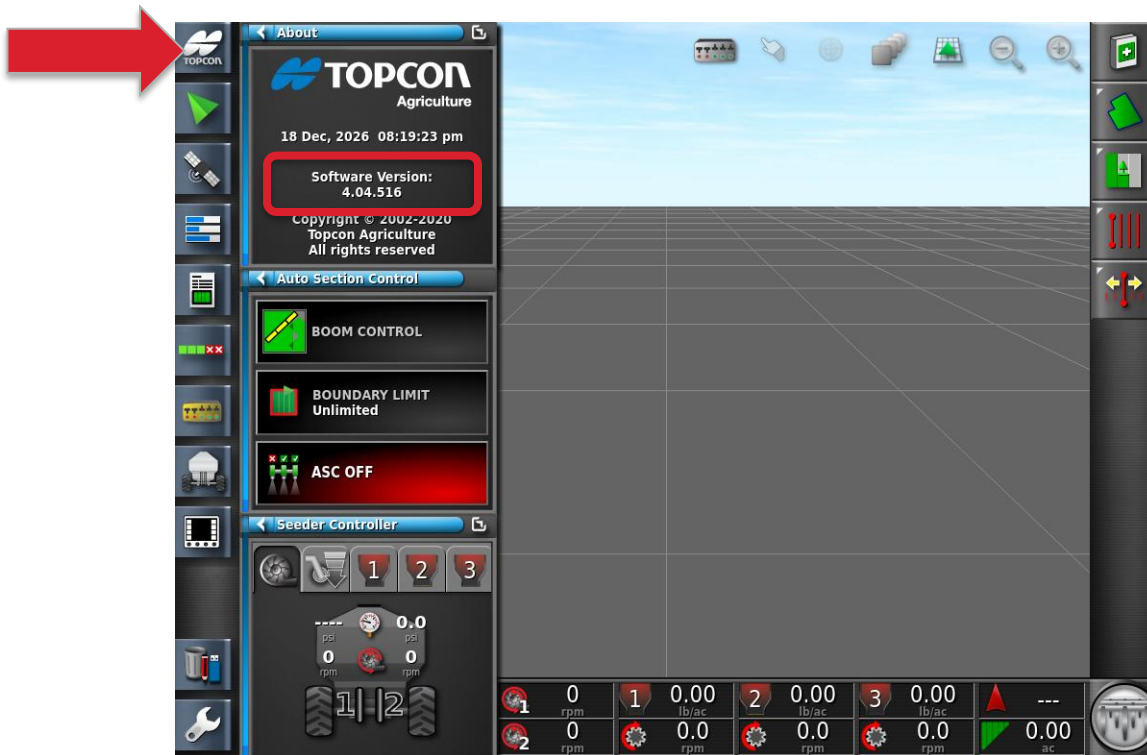
Name	Type	Size
x35-checksums	Text Document	1 KB
Console	INI File	1 KB
x35-extras	Disc Image File	63,960 KB
pkginfo.json	JSON File	1 KB
pkginfo.sign	SIGN File	1 KB
ulmage-initramfs-x35.bin	BIN File	10,890 KB
x35-rootfs	Disc Image File	188,294 KB
x35-install.sh	SH File	15 KB
hostnames	File	1 KB
install_mbr	Windows Command ...	1 KB
install_syslinux	Text Document	1 KB
syslinux	Application	28 KB
mongoose_io_aux_fw.hex	HEX File	38 KB
mongoose_io_fw.hex	HEX File	120 KB
mongoose_slave_fw.hex	HEX File	543 KB
mongoose-ecu_aux_upgrade.tar	Compressed Archive ...	267 KB
mongoose-ecu_upgrade.ipk	IPK File	3,358 KB
README	Microsoft Edge HTM...	3 KB
boot	File folder	

9. This stick is now **ready and prepared to upgrade firmware** for all Topcon ECUs and to upgrade the Console firmware to Horizon 5.

## Part 2: Backing Up Horizon 4 Data

These steps are taken so that there is a backup of all Horizon 4 data. This can be used to restore any monitor data in case the upgrade process is unsuccessful. A blank USB stick of any capacity (Minimum: 4GB) can be used to back up the monitor.

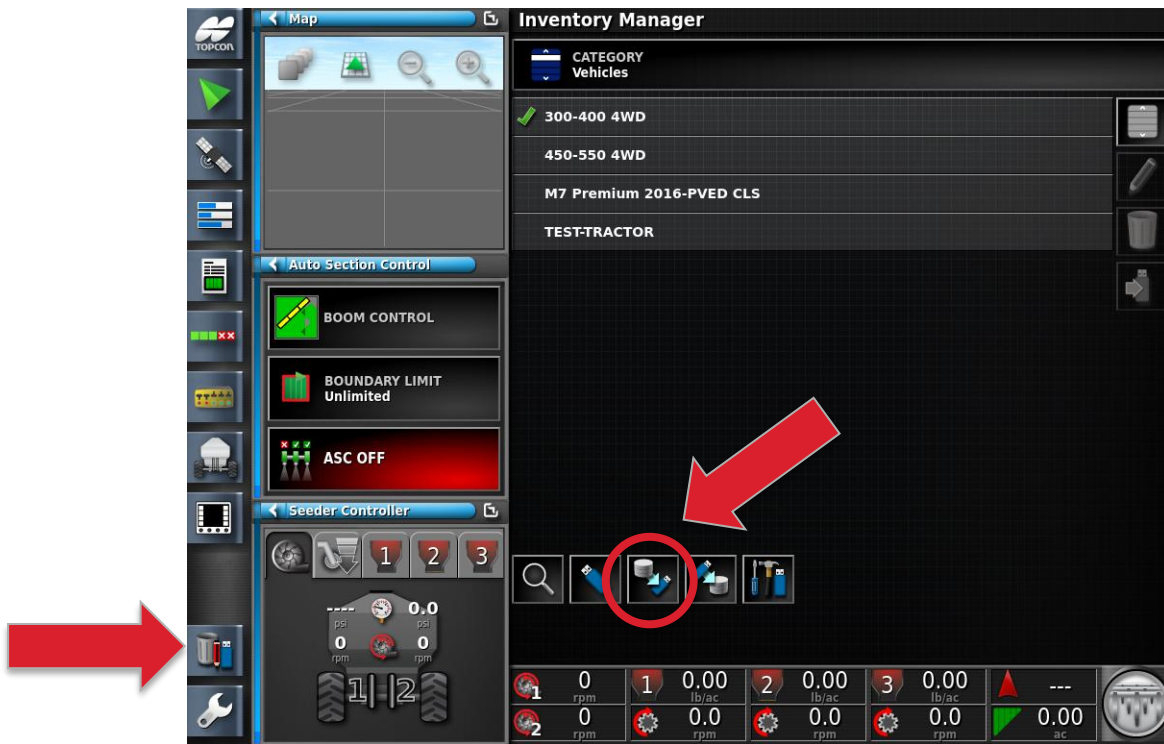
10. **Turn on the X35 monitor** and power on the ECUs. Make sure that there will be consistent power to the monitor and ECUs from this point onward as we will not want the upgrade interrupted.
11. Confirm the **current version of the monitor firmware** by selecting the Topcon logo in the top left corner. Our guide is upgrading from 4.04.516 (the last Morris release of Horizon 4).



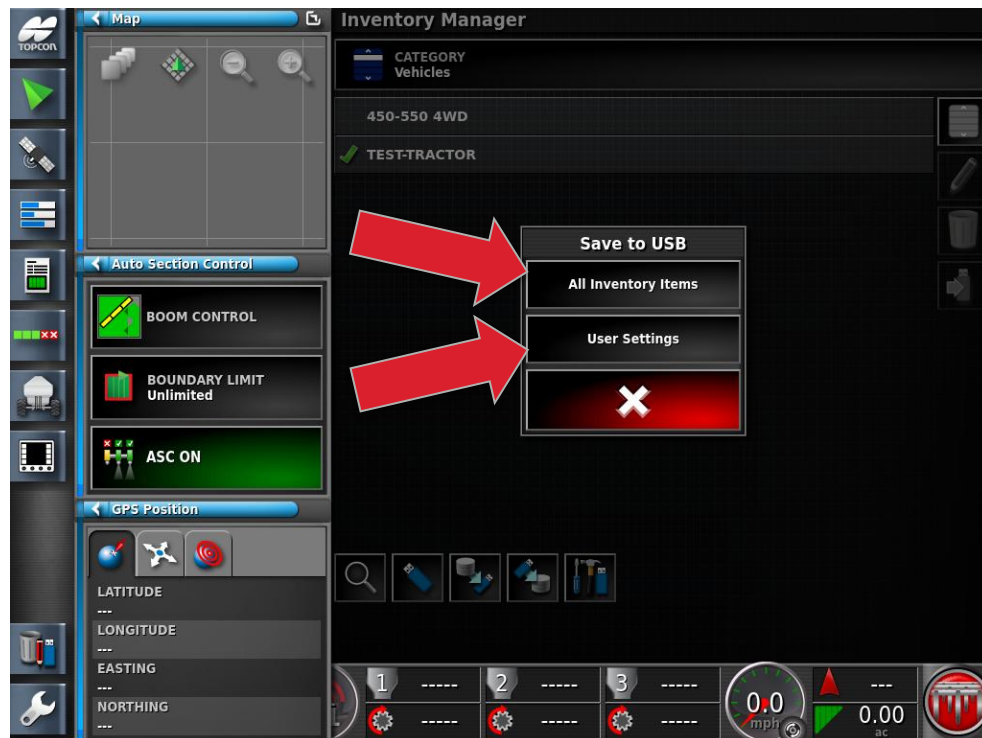
12. Insert your **blank USB stick** (not the one containing firmware) into the USB slot on the rear of the monitor. There may be an antenna occupying this USB port, unplug it for the duration of the upgrade.

**Note:** The USB dongle that may be part of your monitor harnessing **cannot** be used for the upgrade process. For this guide, we recommend always using the USB port on the rear of the monitor for best results.

13. Navigate to the **Inventory Manager** using the icon close to the bottom left.



14. Select the Icon shown above to **Backup all Inventory Items and User Settings to USB.**
15. Select **All Inventory** Items. Then **Overwrite**. This backup may take several minutes.
16. Repeat this process to copy the **User Settings**.



17. This USB stick can now be ejected and **kept safe**. This backup will only be needed if the upgrade process needs to be reverted.
18. To **safely eject the USB stick**, swipe up on the screen and eject by selecting the USB stick icon.

### Part 3: CM-40 #1 Upgrade

19. Next, we will **insert the USB stick containing our upgrade files**. Remember to only use the USB port directly on the back of the monitor, do not use the one found on the monitor harness dongle.



20. Tap the **Settings icon** in the bottom left to enter the **setup tree**.
21. Navigate to **Implement** → **ECU** → **Manage**

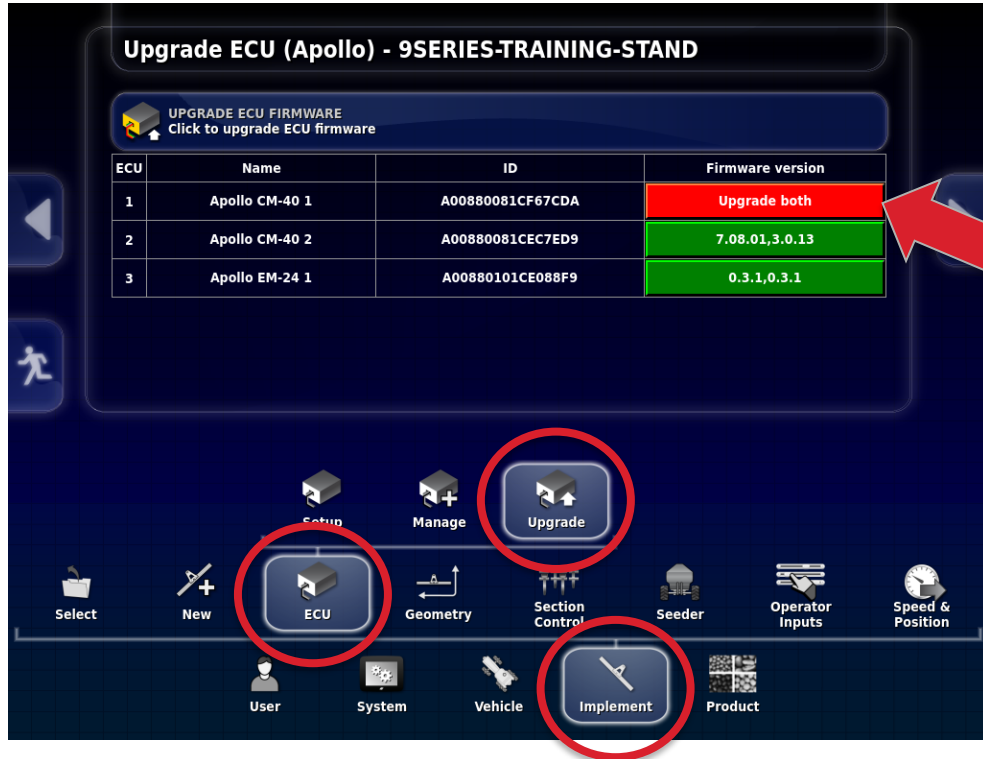


22. **Confirm that we are connected to our ECUs** by checking that there is a firmware version displayed for each ECU. If firmware is shown as N/A, confirm that ECUs are powered up and communicating before proceeding. Our example has CM-40 1 and EM-24 1 for the air cart and CM-40 2 for pack control on the Quantum drill. Your setup may vary depending on configuration.

ECU	Name	ID	Firmware version	Status
1	Apollo CM-40 1	A00880081CF67CDA	7.08.01,3.0.13	Aux CPU Enabled
2	Apollo CM-40 2	A00880081CEC7ED9	7.08.01,3.0.13	Enabled
3	Apollo EM-24 1	A00880101CE088F9	0.3.1,0.3.1	Enabled

23. Next, we will navigate to **Implement** → **ECU** → **Upgrade**.

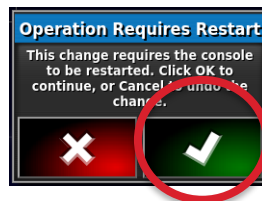
24. Under the **firmware version**, we will tap on the firmware version displayed in Green for CM-40 1 and select **Upgrade both**. This will upgrade the main firmware (7.08.01) and aux firmware (3.0.13) at the same time.



25. Tap **Upgrade ECU Firmware**.



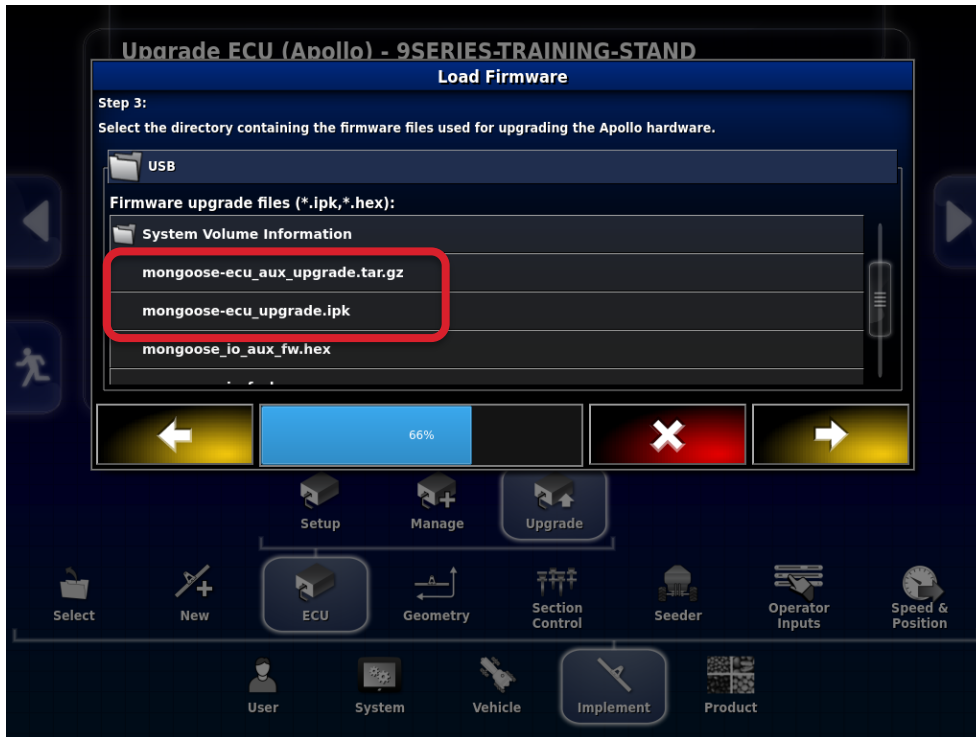
26. The monitor will let us know that this change requires a restart. Click the **green checkmark**.



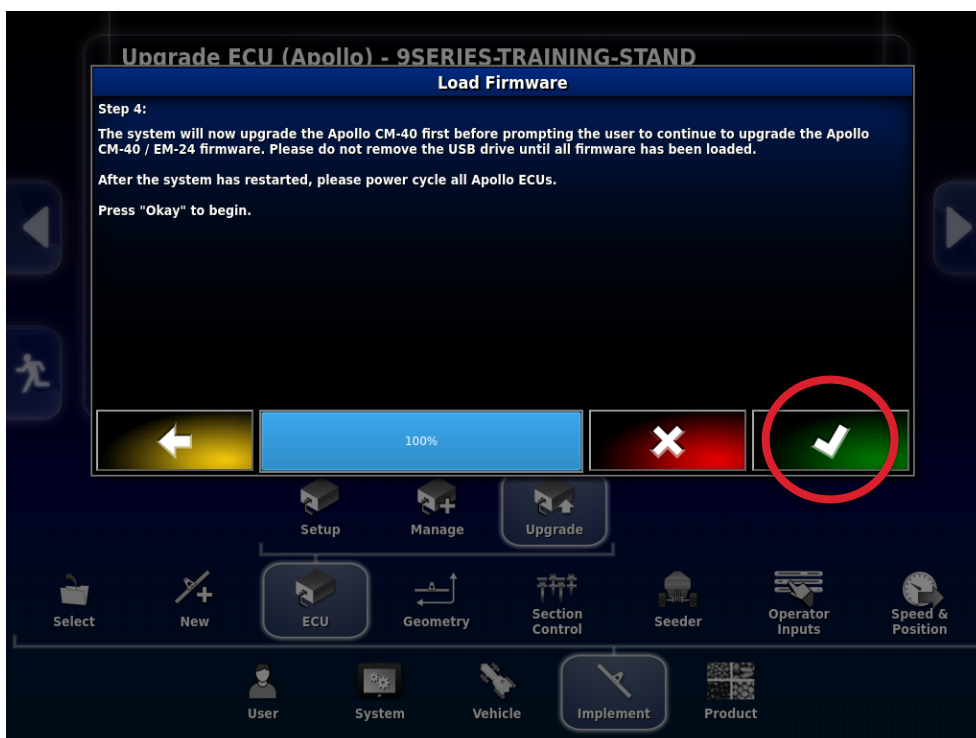
27. The **Upgrade Wizard** will start. Tap the right yellow arrow to proceed past **Step 1** and **Step 2**.



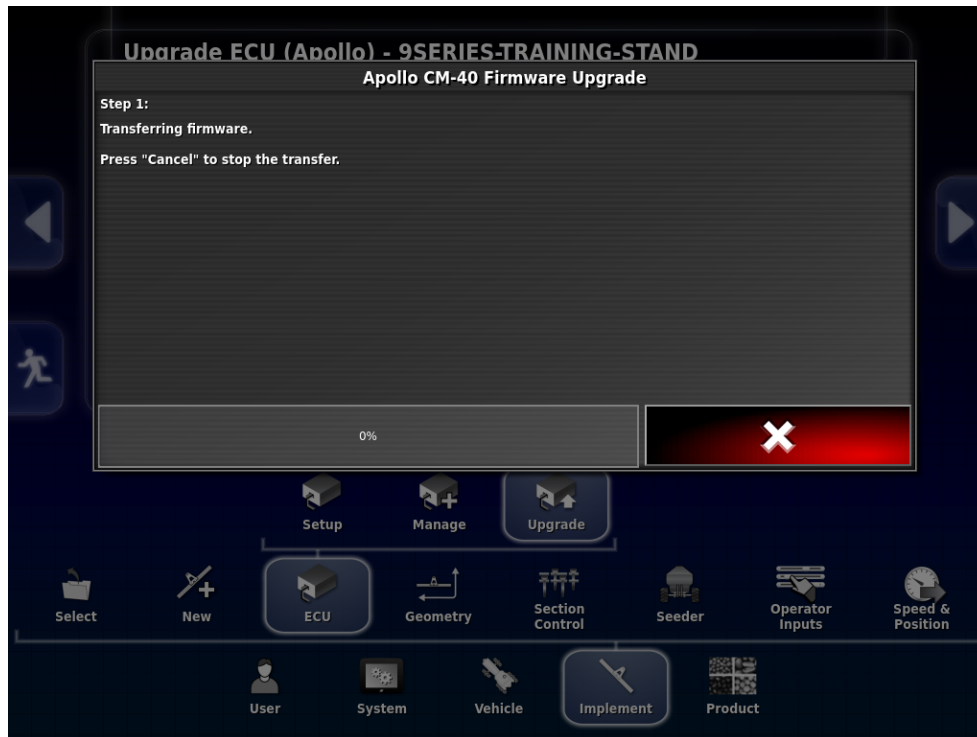
28. On **Step 3**, it will ask us to **locate the directory containing the firmware files**. We will need to make sure that the following files containing the name **mongoose** are visible before proceeding.



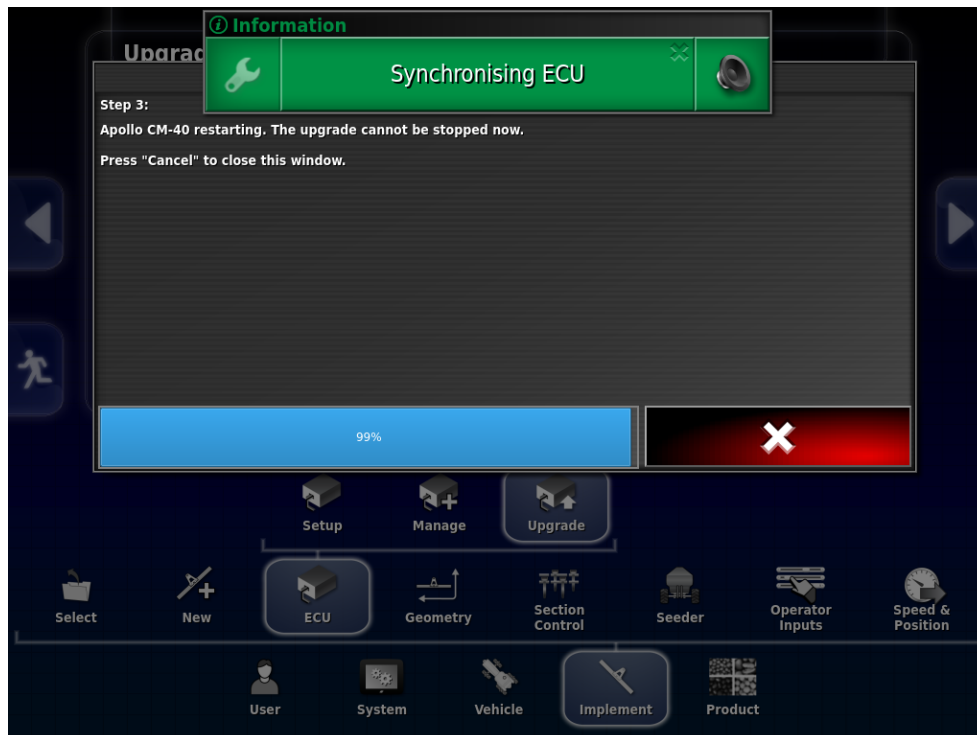
29. On **Step 4**, we will hit the **green checkmark** to begin the firmware upgrade.



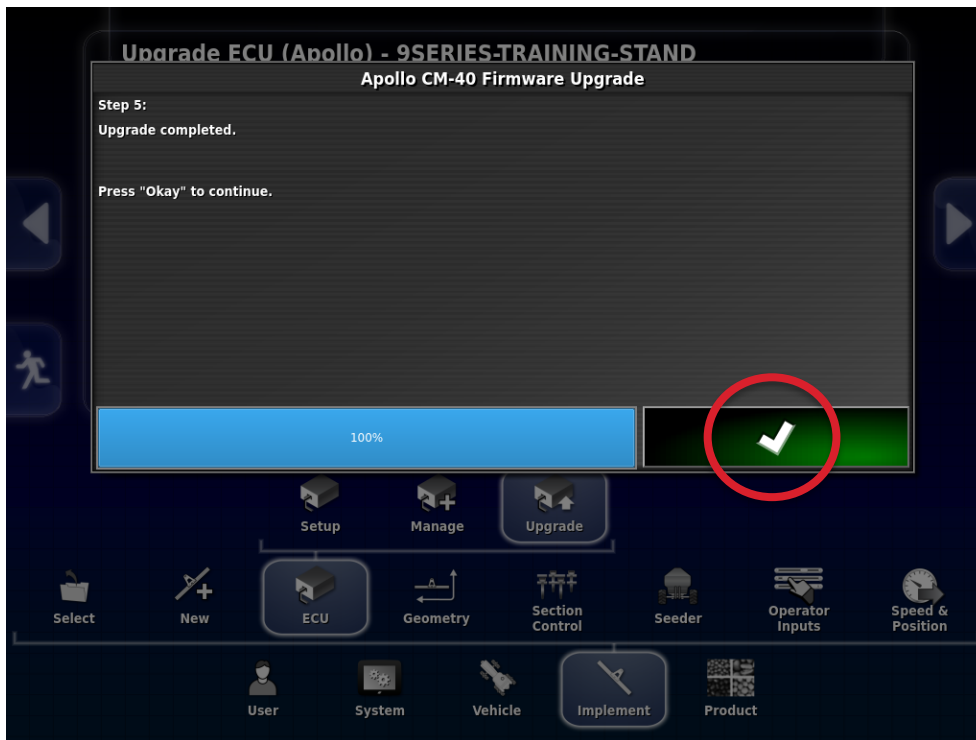
30. We can now monitor the firmware upgrade process; this will **take up to 15 minutes** to transfer the firmware onto the CM-40.



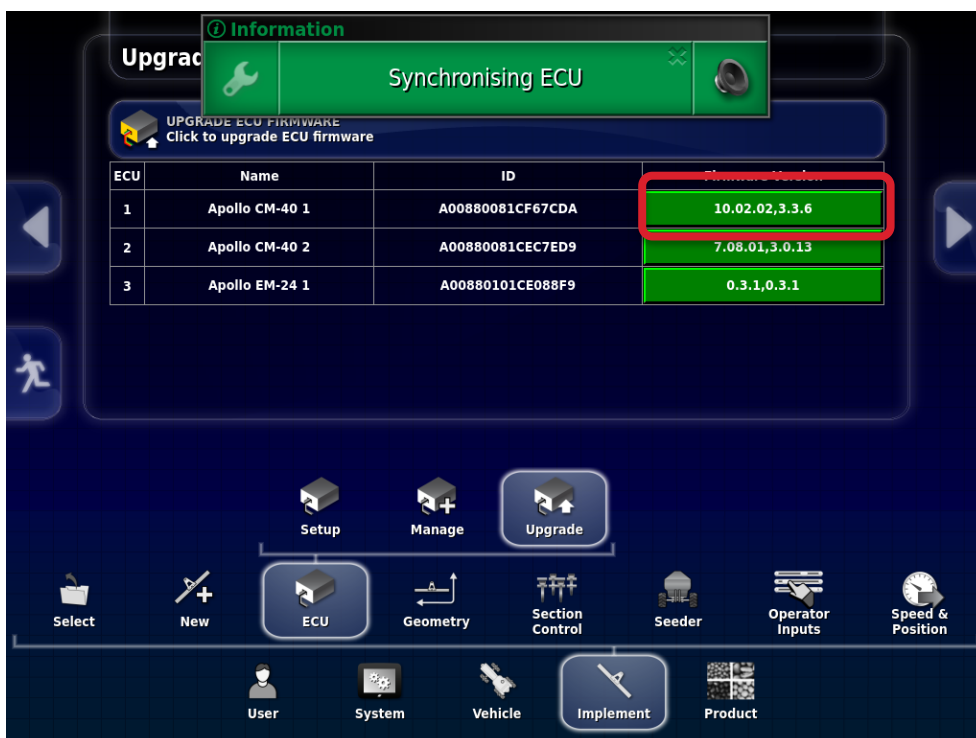
31. As the process is nearing completion, it will pop up with a message displaying **Synchronizing ECU**.



32. Next, we should see a message stating the upgrade is completed successfully. Hit the green checkmark to exit the wizard.



33. The console should now **restart**; we will want to go back into **Implement** → **ECU** → **Upgrade** and check that our **upgraded firmware** is displaying correctly after the restart.



**Note:** If our ECUs display as N/A and do not sync after the restart, we may need to power cycle the ECUs to get them to connect properly. This is common with some older 9 Series harnessing.

ECU	Name	ID	Firmware Version
1	Apollo CM-40 1	A00880081CF67CDA	N/A
2	Apollo CM-40 2	A00880081CEC7ED9	N/A
3	Apollo EM-24 1	A00880101CE088F9	N/A

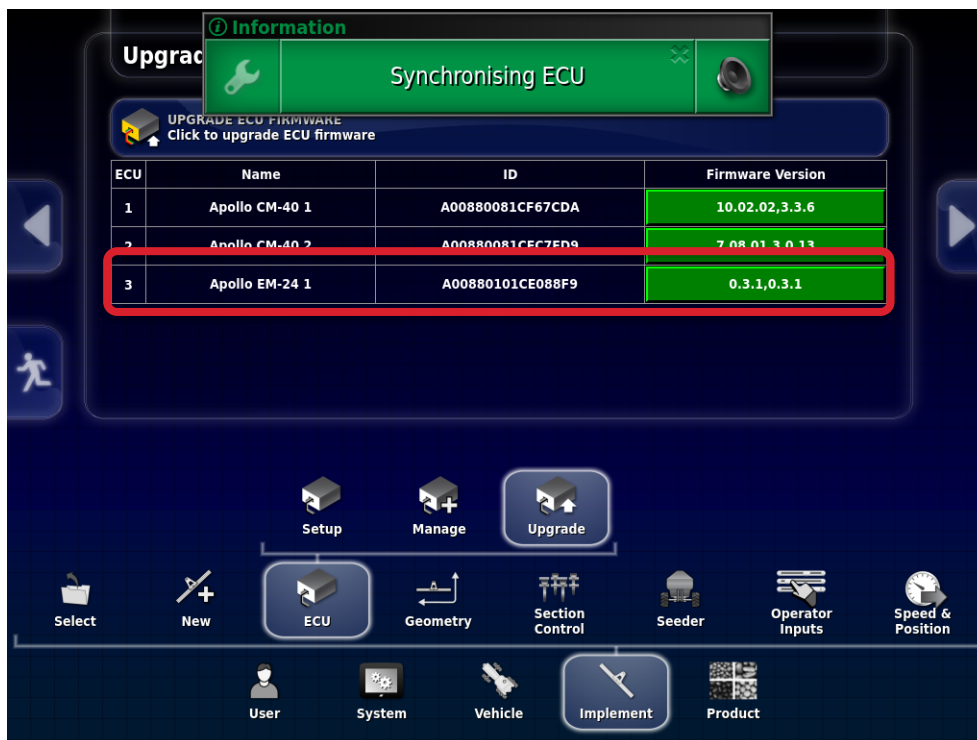
34. Once our CM-40 1 firmware has been upgraded, we will start to see the following **Warning message**. This is normal and to be expected until we finish the full upgrade.



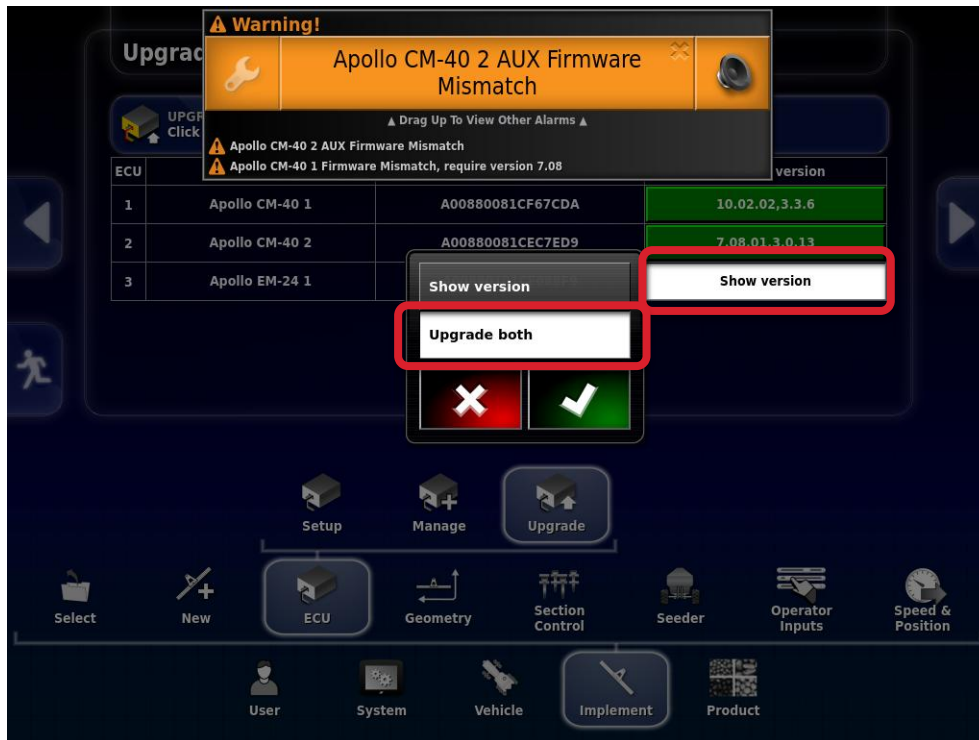
**Part 4: EM-24 #1 Upgrade**

35. Next, we can move on to upgrading the **cart's EM-24**. This should appear as **Apollo EM-24 1** on our list of ECUs.

36. Navigate to **Implement** → **ECU** → **Upgrade**.



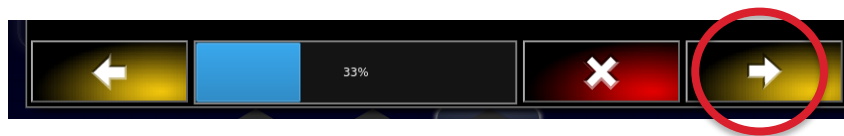
37. Select the **green box** showing the firmware version for EM-24 1 and select **Upgrade both**.



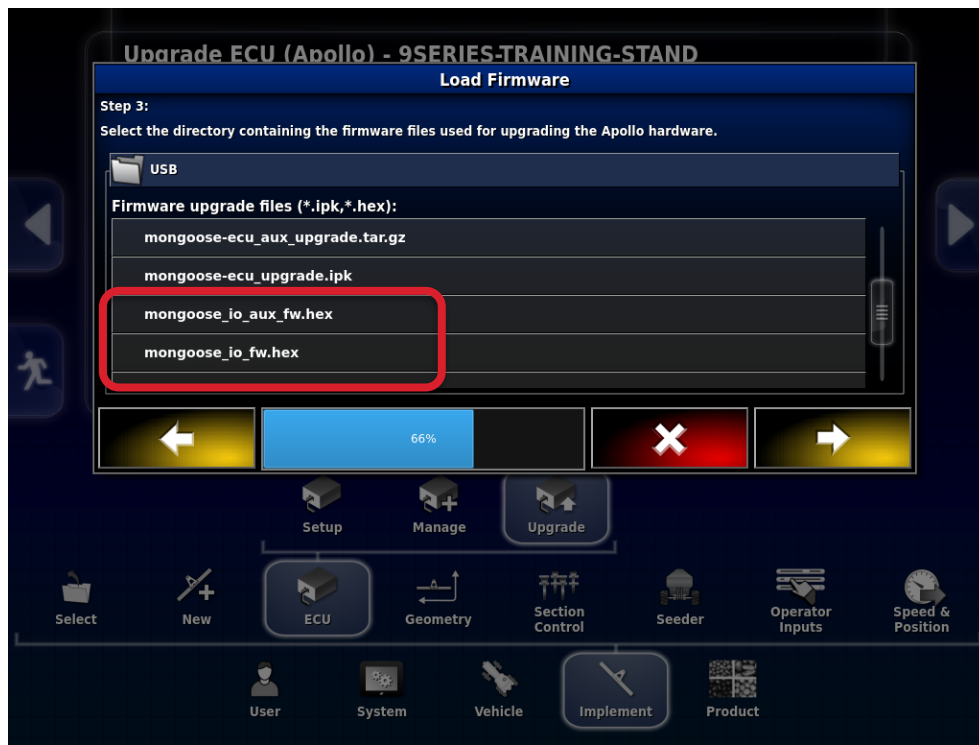
38. Tap **Upgrade ECU Firmware**.



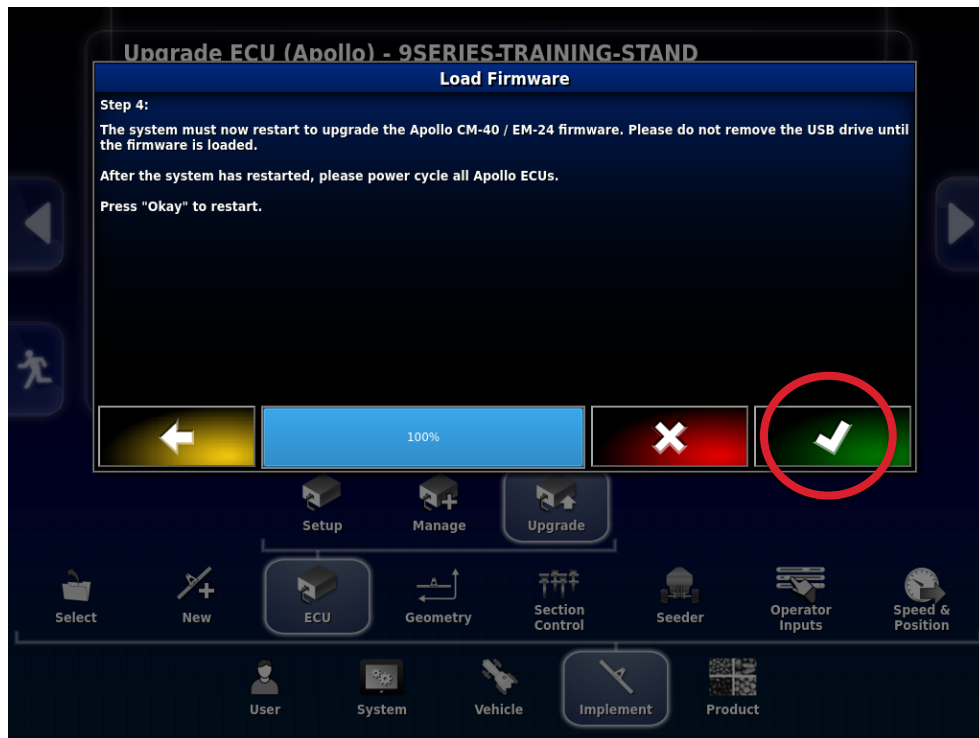
39. The **Upgrade Wizard** will start just the same as when we upgraded the first CM-40. Tap the right yellow arrow to proceed past **Step 1** and **Step 2**.



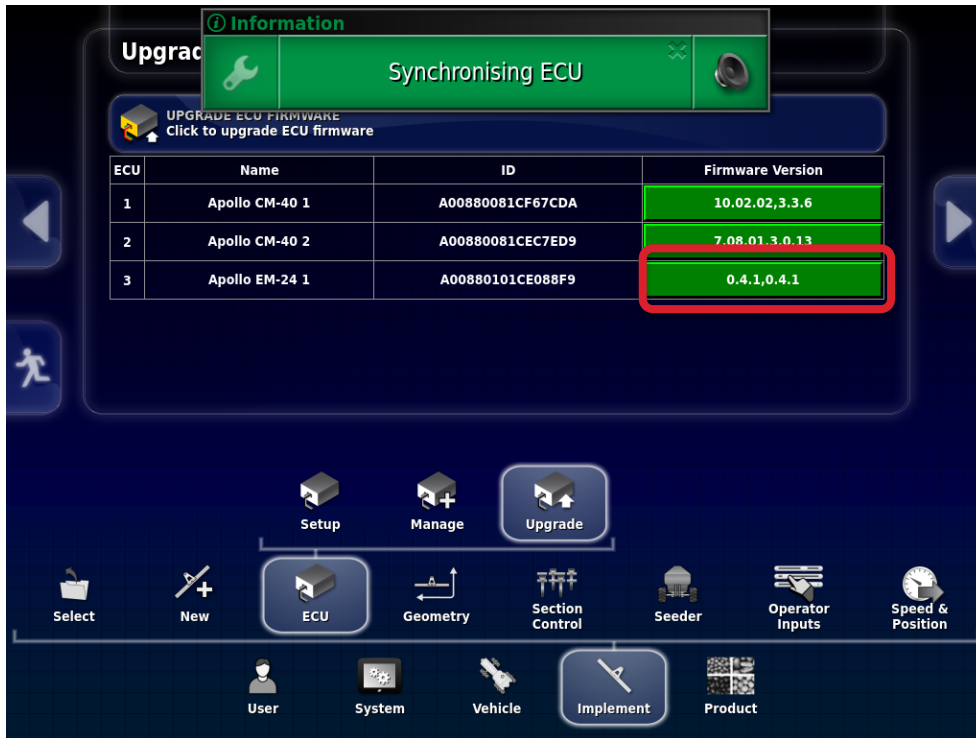
40. On **Step 3**, it will ask us to **locate the directory containing the firmware files**. We will need to make sure that the following files containing the name **mongoose** are visible before proceeding.



41. On **Step 4**, we will hit the **green checkmark** to begin the firmware upgrade.



42. We can now monitor the firmware upgrade process; the EM-24 upgrades much quicker than a CM-40 and will be **done in a minute or two**.
43. The **monitor will restart** once we have confirmed that the EM-24 upgrade was successfully completed.
44. Once the monitor turns back on and syncs with the ECUs, we can go in and check that our EM-24 is **showing the new software version**.



**Note:** If our ECUs display as N/A and do not sync after the restart, we may need to power cycle the ECUs to get them to connect properly. This can be fairly common after an upgrade.

ECU	Name	ID	Firmware Version
1	Apollo CM-40 1	A00880081CF67CDA	N/A
2	Apollo CM-40 2	A00880081CEC7ED9	N/A
3	Apollo EM-24 1	A00880101CE088F9	N/A

**We have now completed the upgrade for the main ECUs on the air cart.**

If these were the only ECUs in your system (no pack control or additional tank ECUs) you can proceed straight to **Part 7: Upgrading Monitor Firmware to Horizon 5** (Page 28 of this guide).

**If you do have additional ECUs, continue to the next page.**

## Part 5: Creating a Single ECU Profile

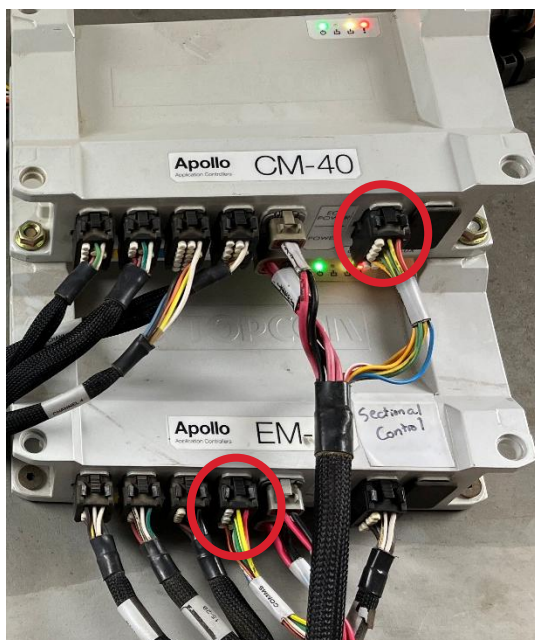
To upgrade any secondary ECUs, a **new implement profile** will need to be created to isolate that ECU and upgrade it. Ie. If we attempt to upgrade CM-40 #2 while using our original profile, the upgrade will fail.

**Note:** This example will show the process to upgrade the pack control CM-40. If you are running a liquid cart or some other configuration where there are additional EM-24, these EM-24 will need to be programmed together with the CM-40 that they are tied to similar to how we had upgraded the cart's CM-40 and EM-24 configuration. EM-24 are expansion modules so they must be programmed with the CM-40 they are tied to.

45. First, we will need to **isolate the ECU we are attempting to upgrade by cutting off communication to all other ECU**. This involves **unplugging either Comms or Power** on any other connected ECU.
46. **Locate all ECU that need to be unplugged**. The typical location is on the rear right of the air cart, but this location may vary. The typical stack of ECU when all are located on the cart is as follows:
  - i. (Top) CM-40 #1
  - ii. (Middle) EM-24 #1
  - iii. (Bottom) CM-40 #2

47. Now **unplug either the comms or power plugs** from every ECU except the one to be upgraded. The example photos on the right show us unplugging the two power connectors:

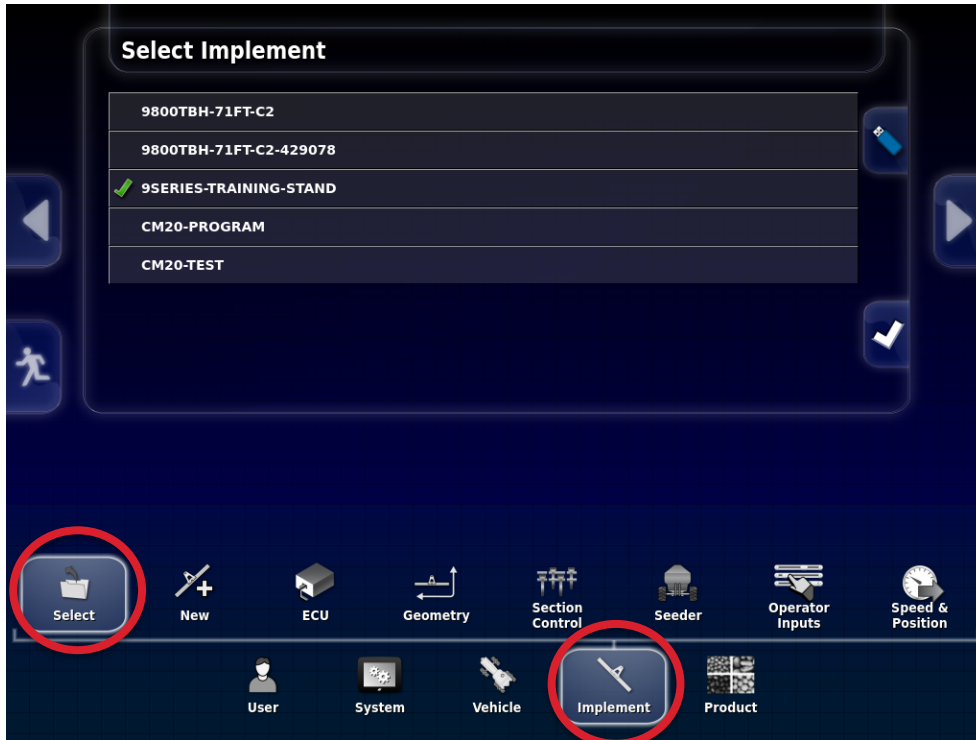
**Note:** If unplugging Comms instead, **this plug is located on opposite sides of a CM-40 and an EM-24**. Make sure you are unplugging from the correct ports. Comms location shown below:



48. Once we have unplugged these ECU, the monitor will start **displaying warnings that we do not have communication**. This is normal after unplugging those ECU.



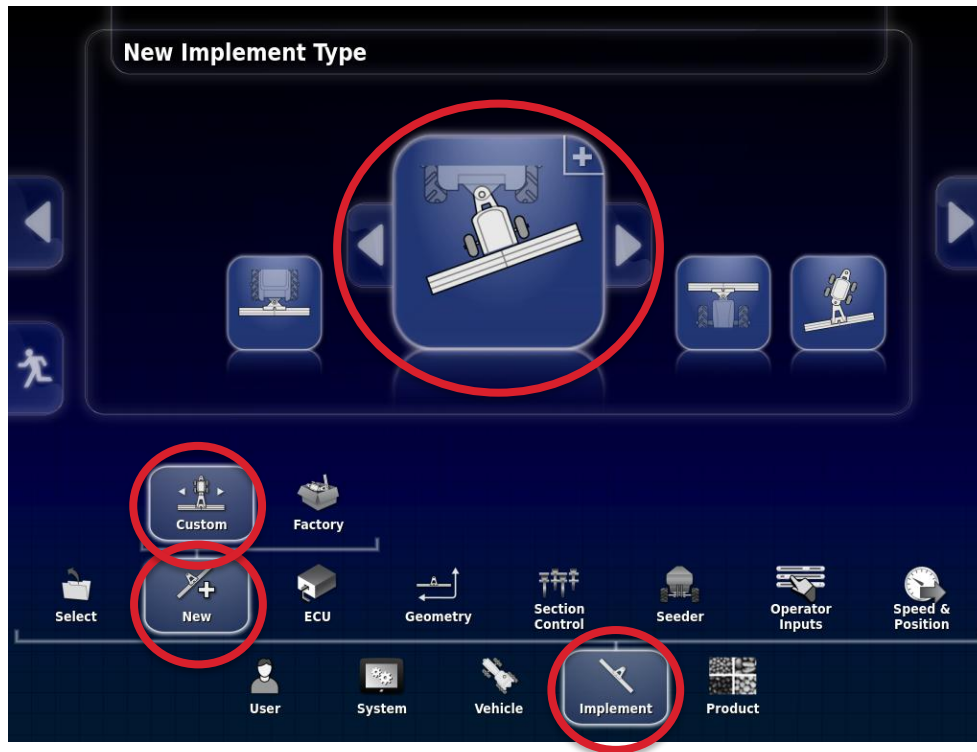
49. Next, we will need to take note of which profile is active as some monitors will have multiple profiles stored in their memory. In **Settings**, navigate to **Implement** → **Select**.



50. The active profile is the one that has the **green checkmark** beside its name. **It is important to remember which profile was active** as we will be returning to this profile once we have completed upgrading our secondary ECU. Write this down if there are multiple options with similar names.



51. Navigate to **Implement** → **New** → **Custom**. Select the option shown below.

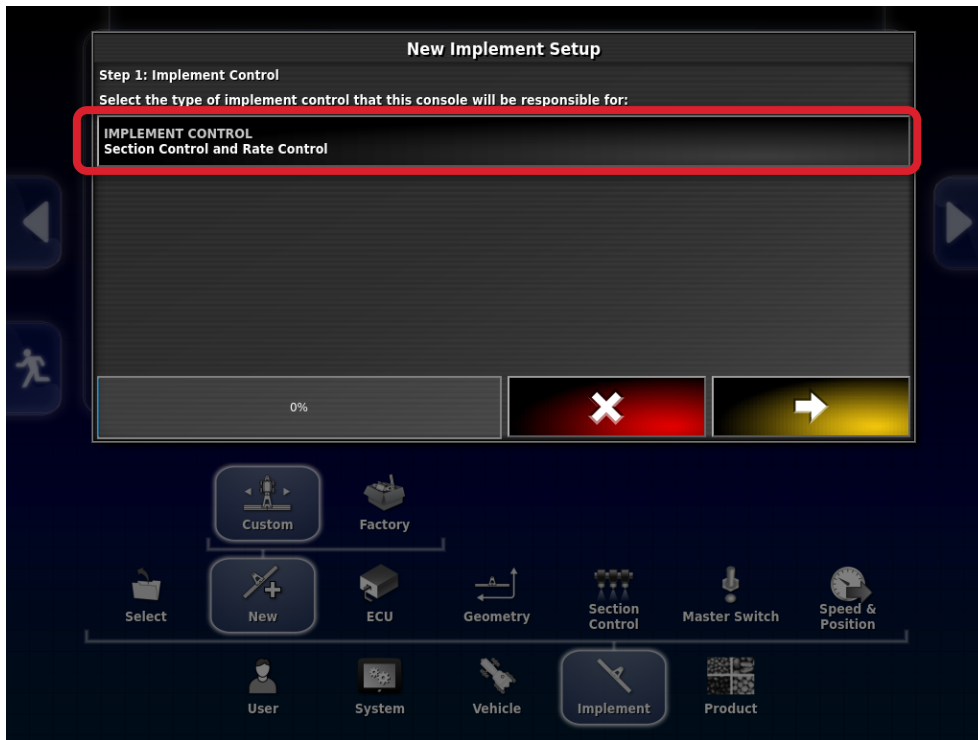


52. Select the green checkmark confirming that this operation requires a restart. On the following page, give this **new profile a name** such as “**ECU-UPDATE**”.

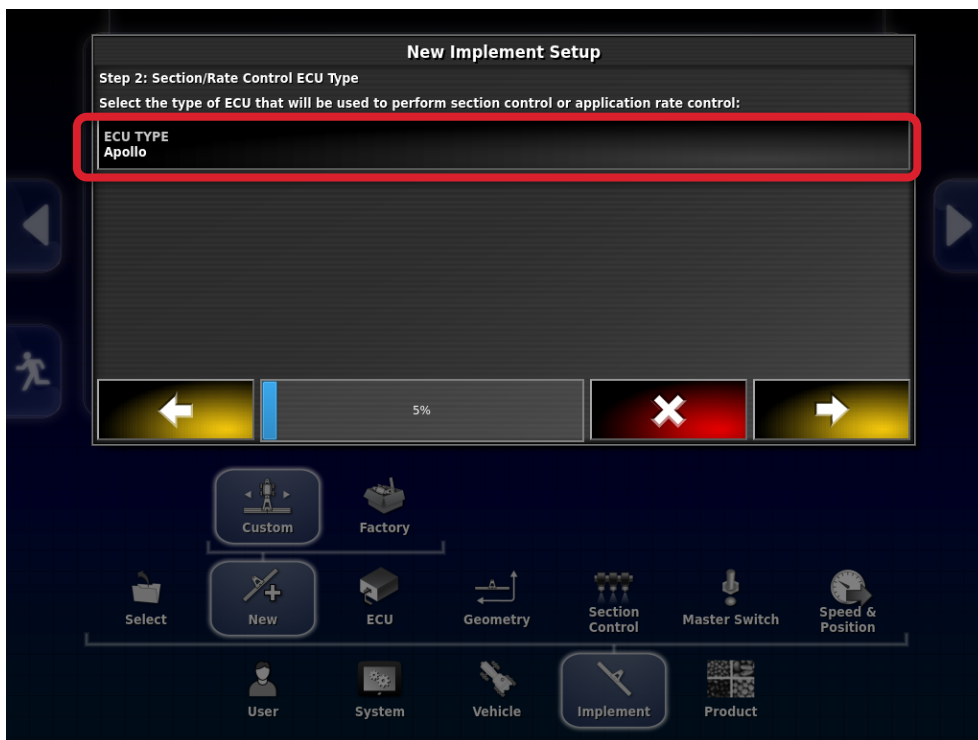
**Note:** Always use hyphens instead of spaces when naming profiles.



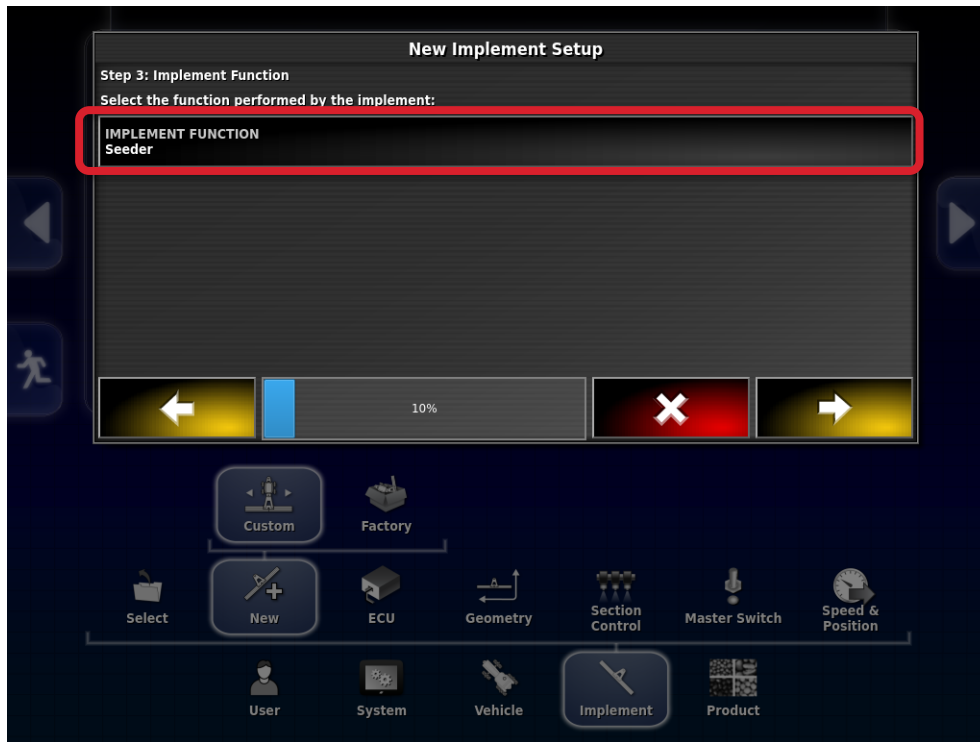
53. On Step 1, Select **Section Control and Rate Control** for the type of Implement Control.



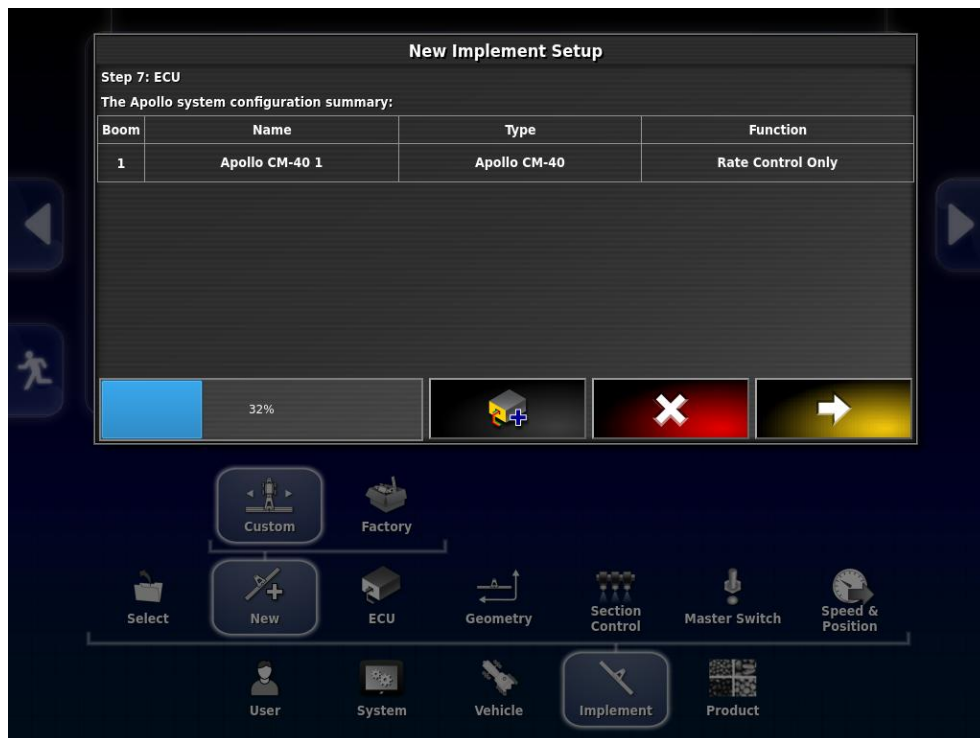
54. On Step 2, Select **Apollo** for the ECU Type.



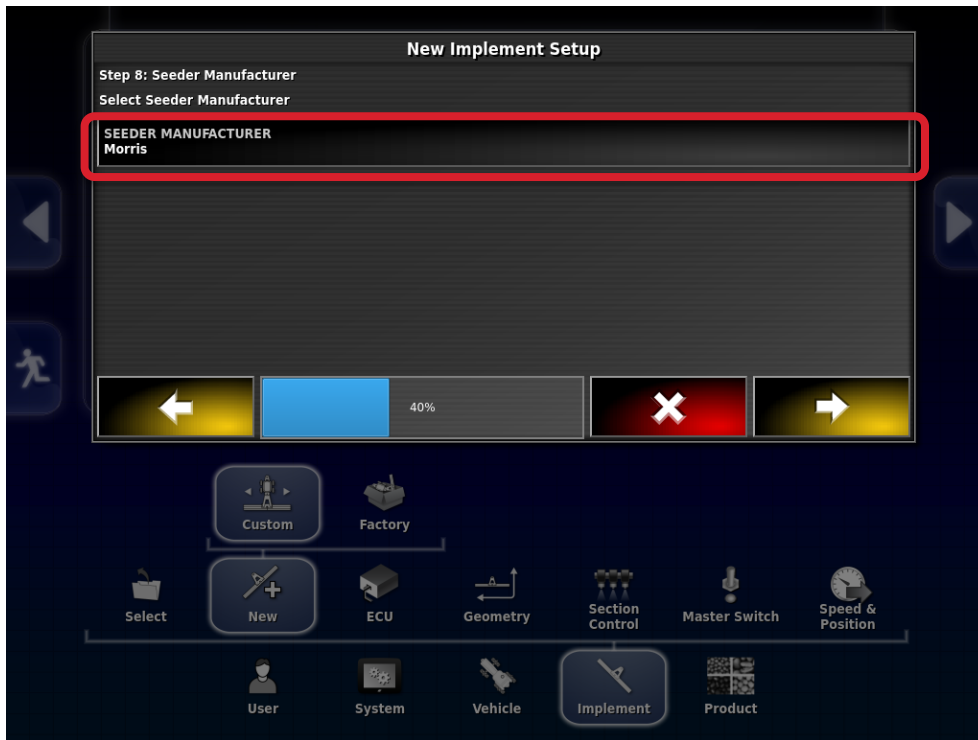
55. On Step 3, Select **Seeder** for Implement Function.



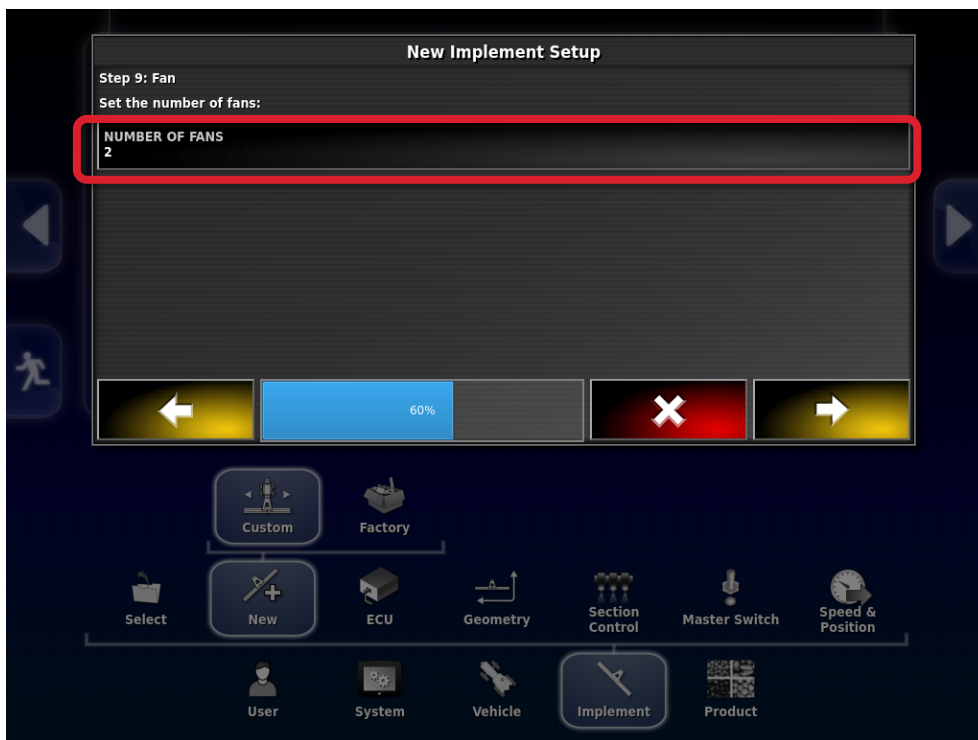
56. Next it will search and detect only the ECUs that are still connected. In our example, this is just the CM-40 for pack control on the drill. This part will fail if multiple ECUs are detected. This single ECU will be assigned as CM-40 1 for this profile.



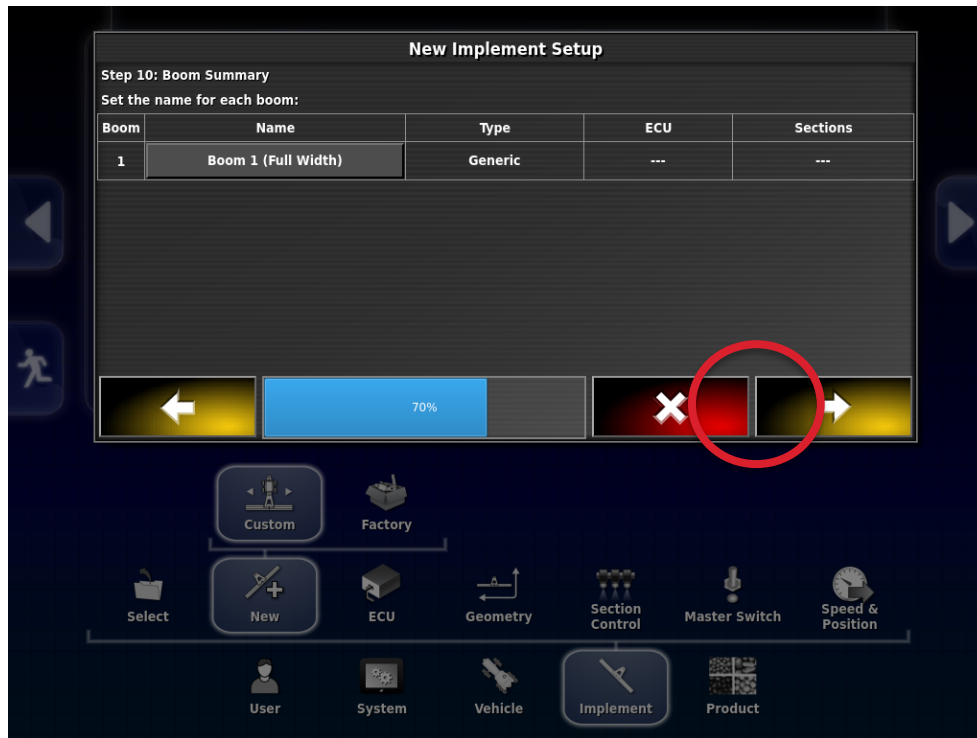
57. On Step 8, Select Morris for Seeder Manufacturer.



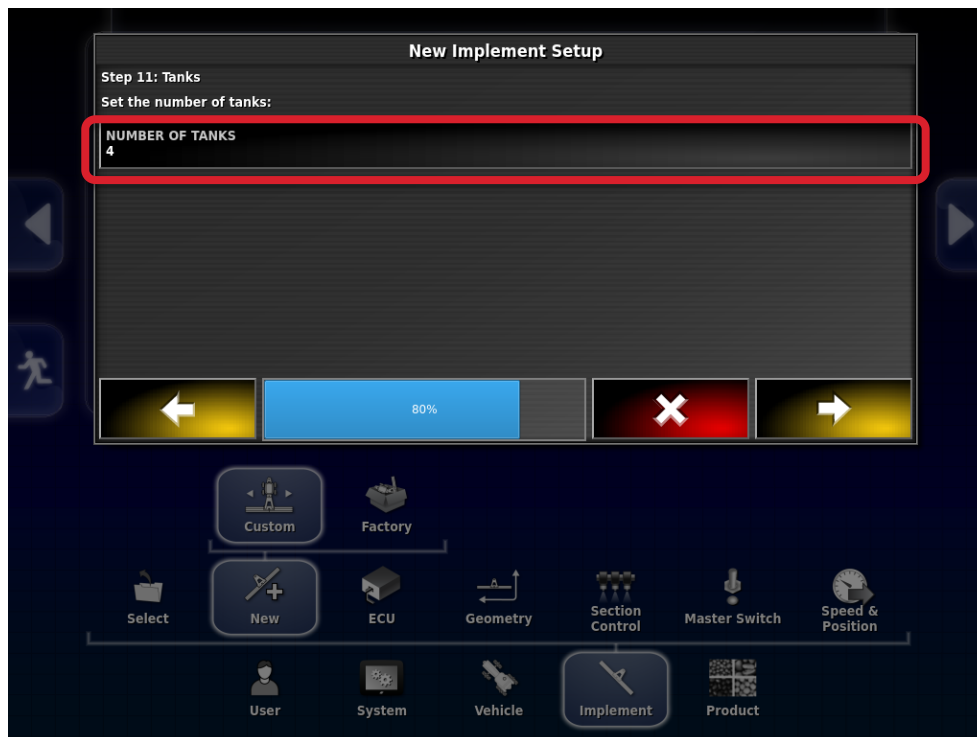
58. On Step 9, Select 2 for Number of Fans.



59. On Step 10, leave as default and hit next.



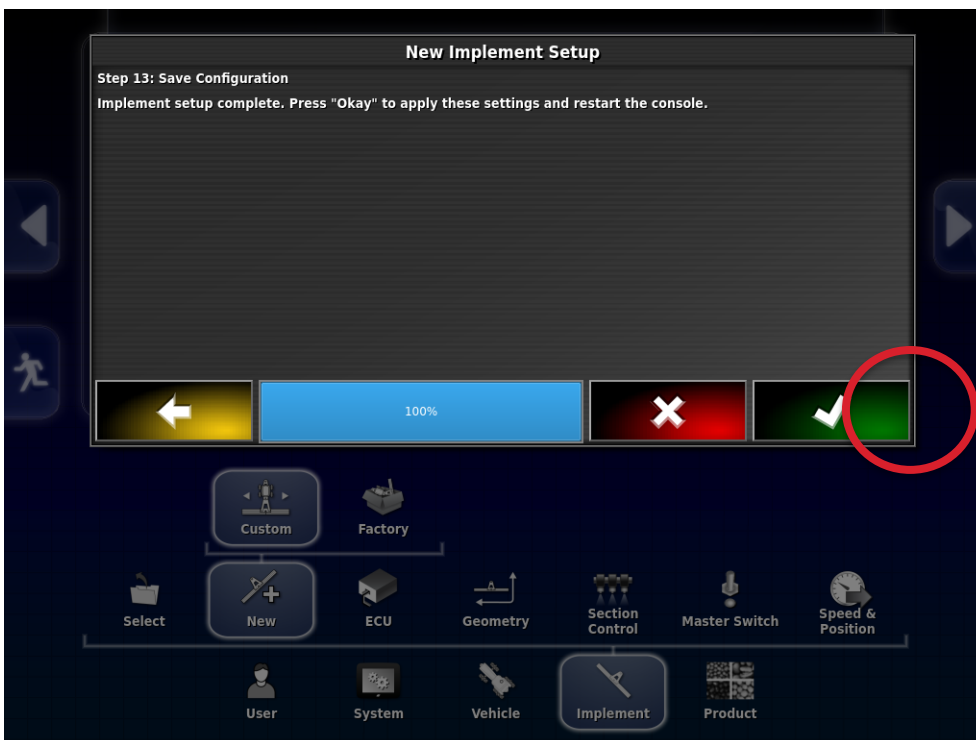
60. On Step 11, enter 4 for Number of Tanks.



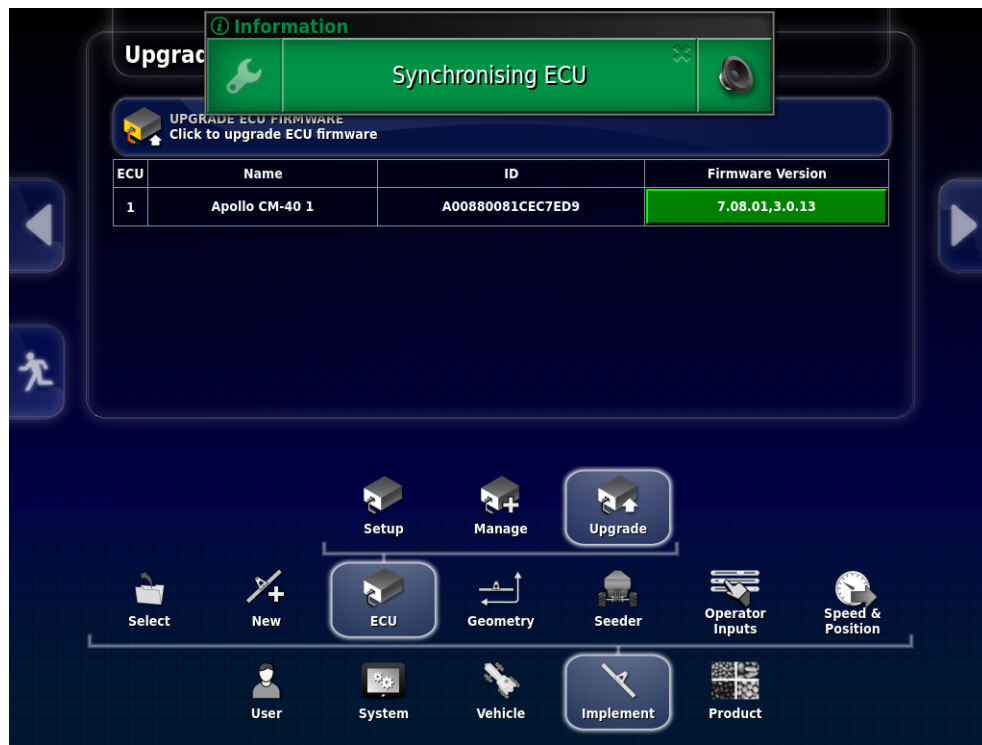
61. On Step 12, leave as default and hit next.



62. On Step 13, hit the **green checkmark** to **save the configuration** and restart the console.



63. After the restart, we will be loaded into the profile we have just created, and our single CM-40 should sync and show up on the list. We are now ready to upgrade the firmware for this secondary ECU.



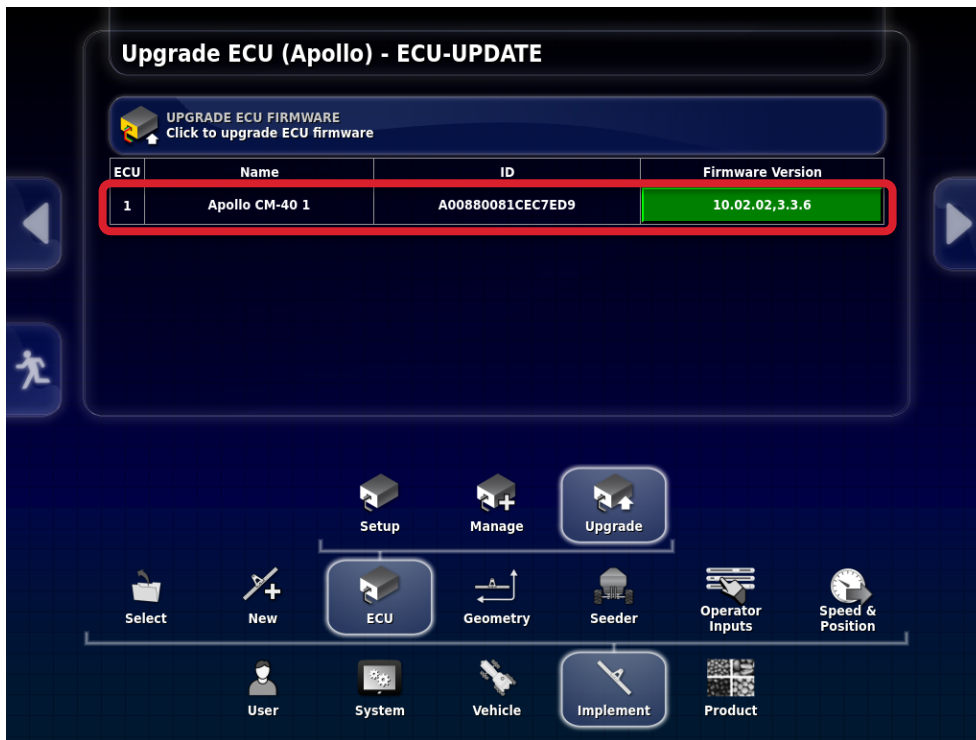
**Note:** We could do this same process of making a profile for every additional ECU on our cart, this way we will always have these profiles in the future if there are further firmware upgrades. Make sure to give these profiles easily distinguishable names in this case. Ie. “Pack Control ECU Upgrade” & “Liquid ECU Upgrade” so we can use them to quickly upgrade those individual components.

## Part 6: Upgrading Secondary ECUs using New Profile

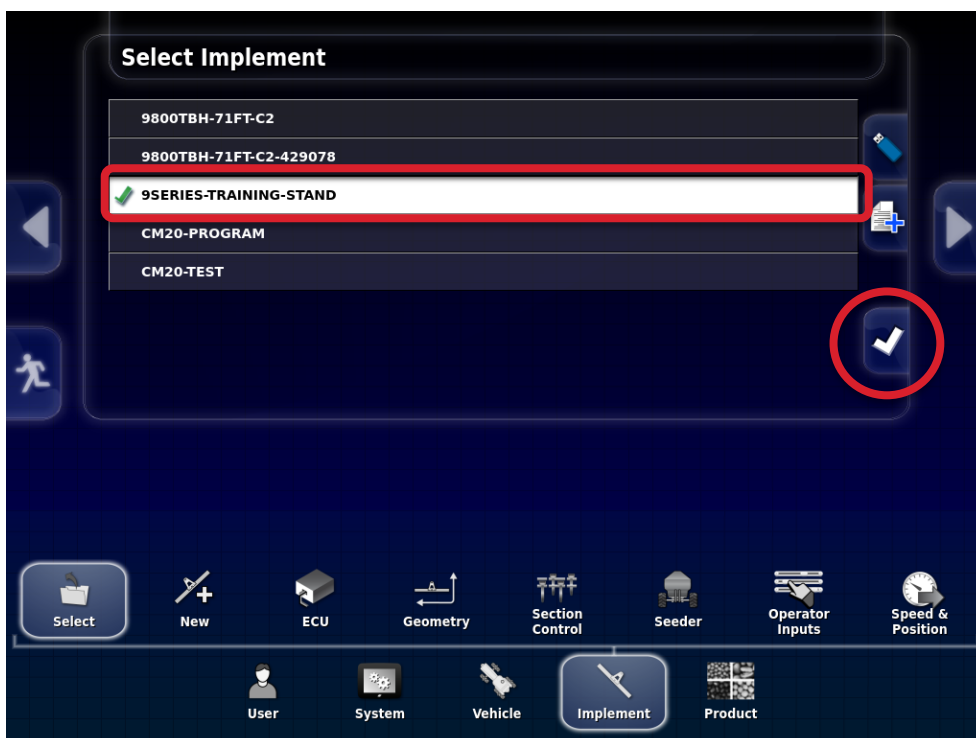
This new profile will be used to upgrade the firmware of our secondary ECU only. It is not intended to be used for anything else, so we will note that things like geometry, tank capacity, alarms, etc have not been fully configured for this temporary use profile. **We must switch back to our original profile upon completion of the upgrades.**

64. Once we are loaded into our new single ECU profile, we can use it to upgrade the firmware just **the same as we did in Part 3 and 4 of this guide**. Please follow the instructions laid out in those sections to complete the upgrade for these ECUs.

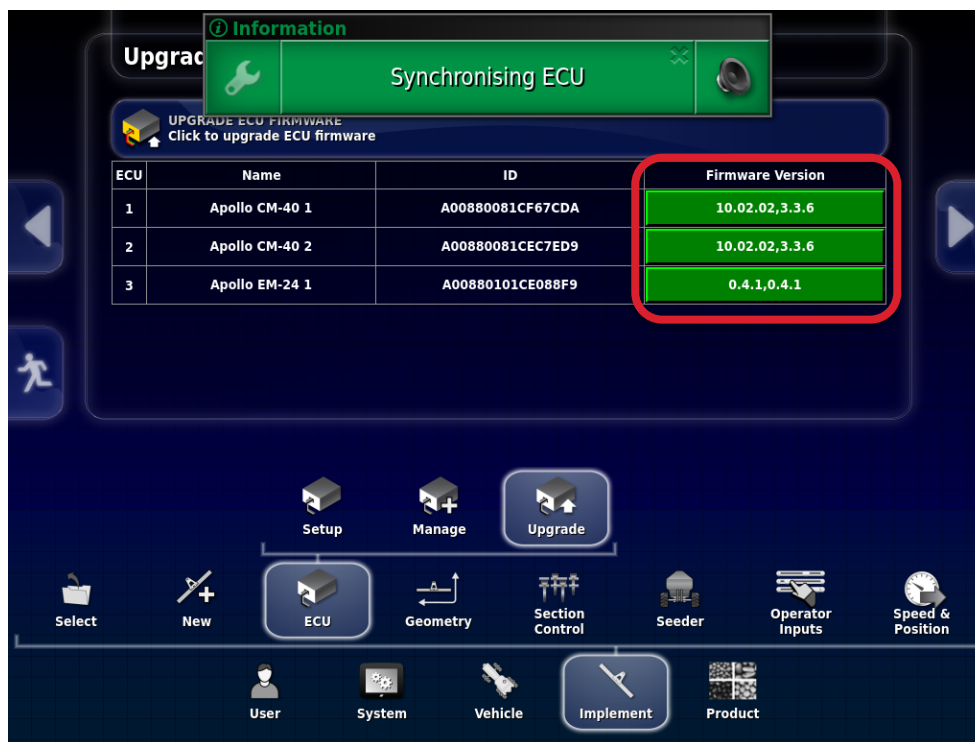
65. The **CM-40 upgrade will take approx. 15 minutes** to take the update and once the monitor restarts we should see this when we go to **Implement** → **ECU** → **Upgrade**.



66. We are now ready to load back into our original profile. Navigate to **Implement** → **Select**. Choose our original profile from the list and hit the **checkmark on the right side**.



67. The monitor will restart and load us back into our original profile. Once our ECUs have synced, we can load into the **Implement** → **ECU** → **Upgrade** tab and see that all our ECU are now displaying the new firmware.

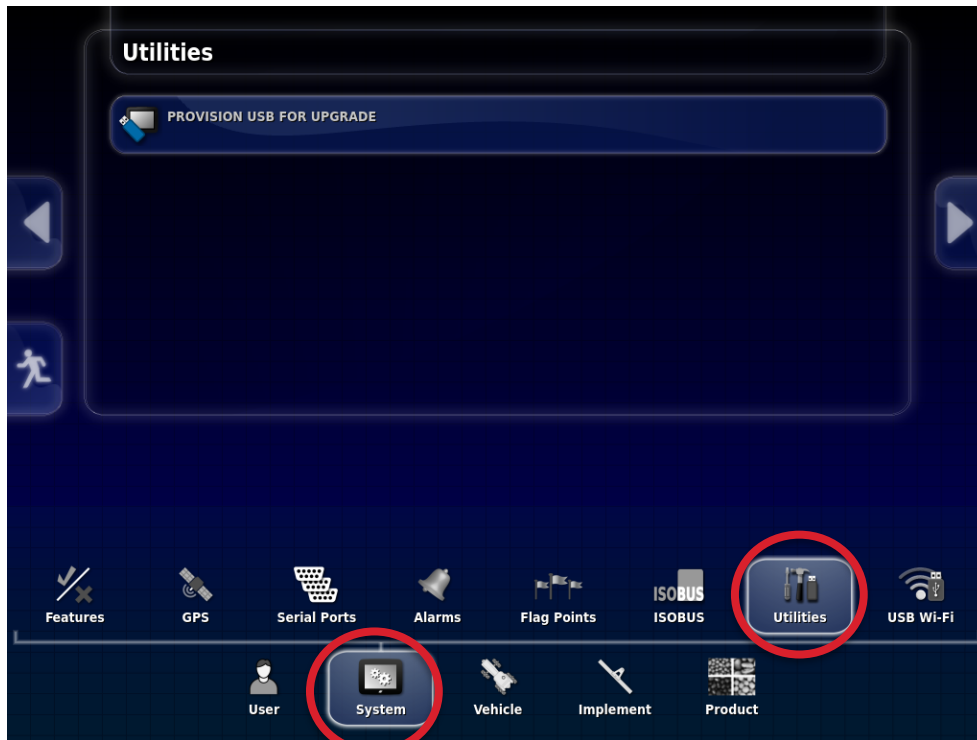


68. Once we have **confirmed that our ECUs are all running the latest firmware**, we are now ready to continue to the final step, updating the X35 to Horizon 5.

## Part 7: Upgrading Monitor Firmware to Horizon 5

Before starting the monitor firmware upgrade, confirm that we have our USB stick containing our update files plugged into the USB port on the rear of the monitor.

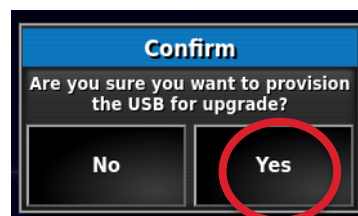
69. In Settings, navigate to **System** → **Utilities**.



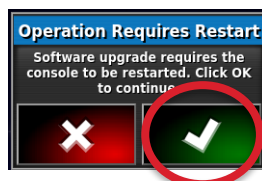
70. Select the **Provision USB for Upgrade** option.



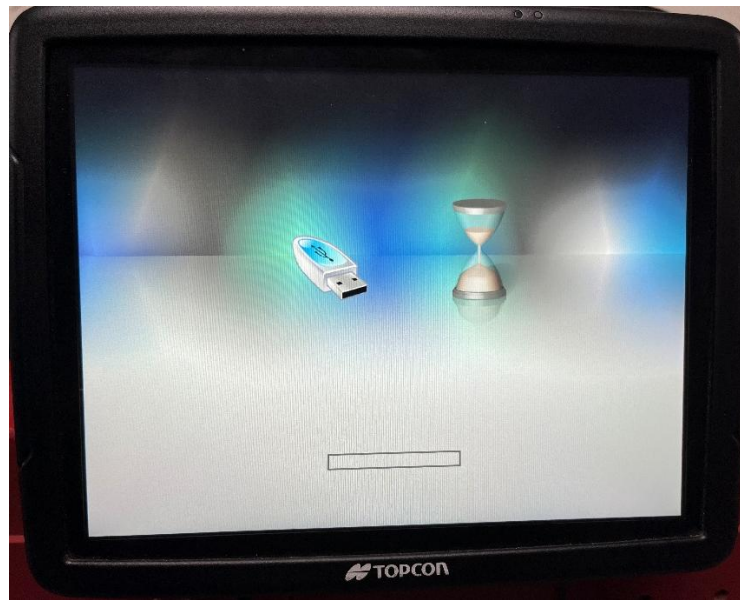
71. Select **Yes**, that you do want to provision the USB for upgrade.



72. Confirm that **this operation requires a restart**.

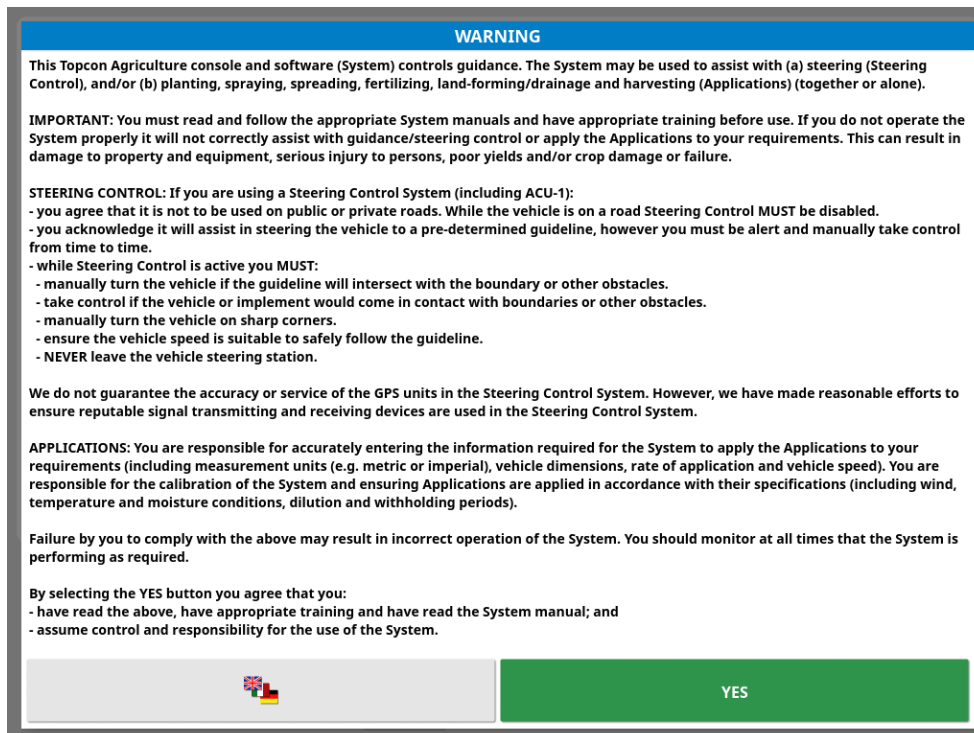


73. The monitor will now attempt to do the upgrade to Horizon 5 from the files we have loaded onto the USB. **It will display the following screen** if the USB is recognized and provisioned correctly.

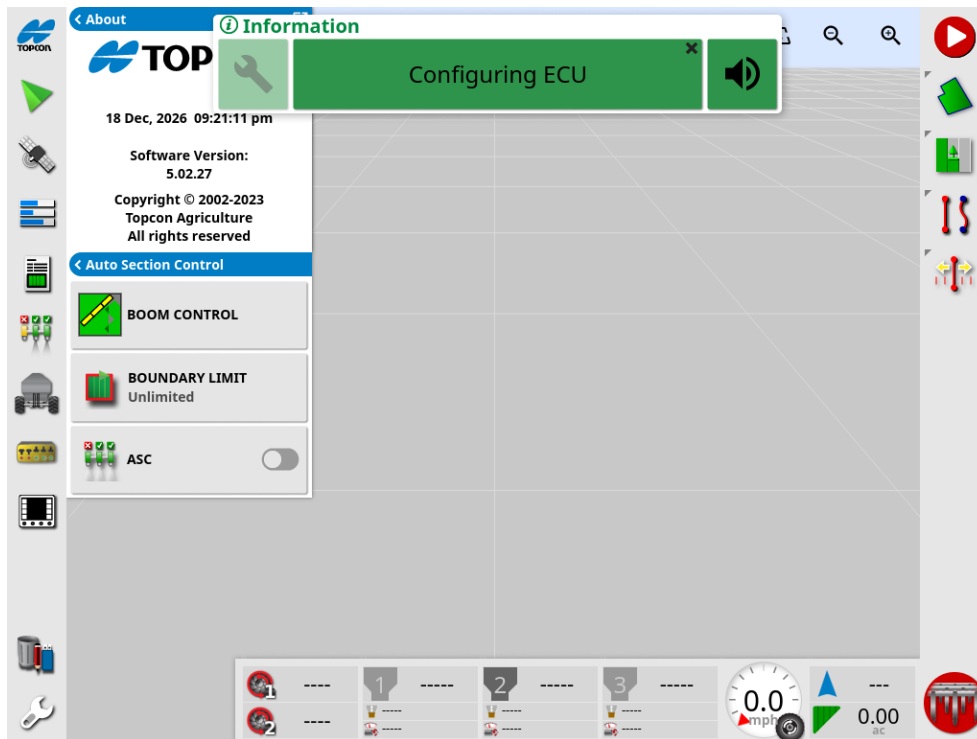


**Note:** This screen will not appear for USB sticks that will not apply the update. See the first page of this guide for approved USB sticks for monitor updates.

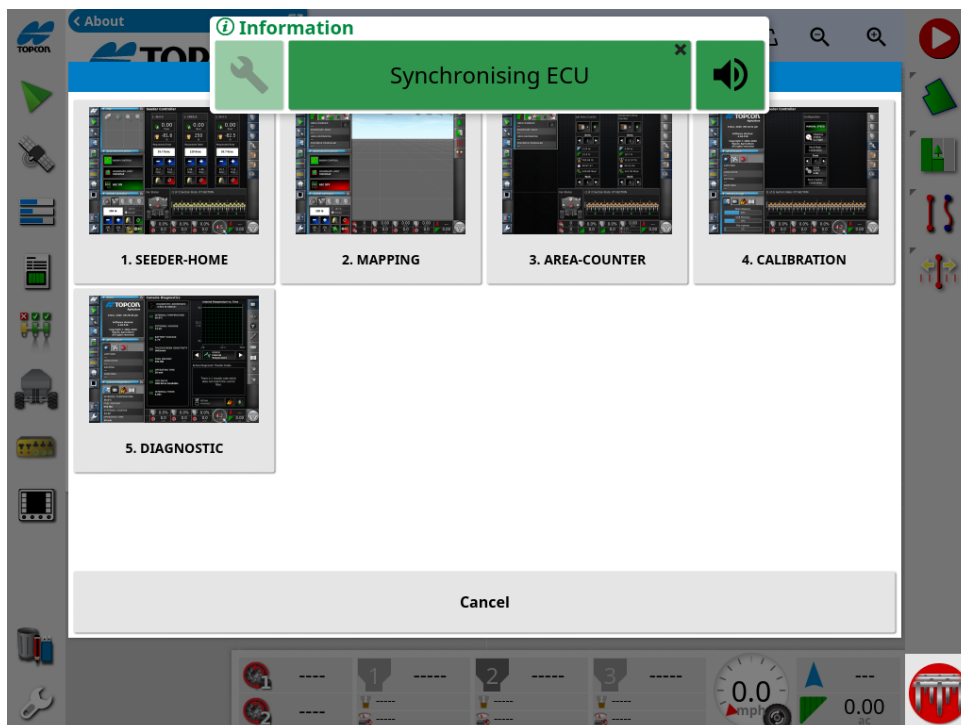
74. If the update is successful, this will be the first screen that is displayed when the monitor turns on.



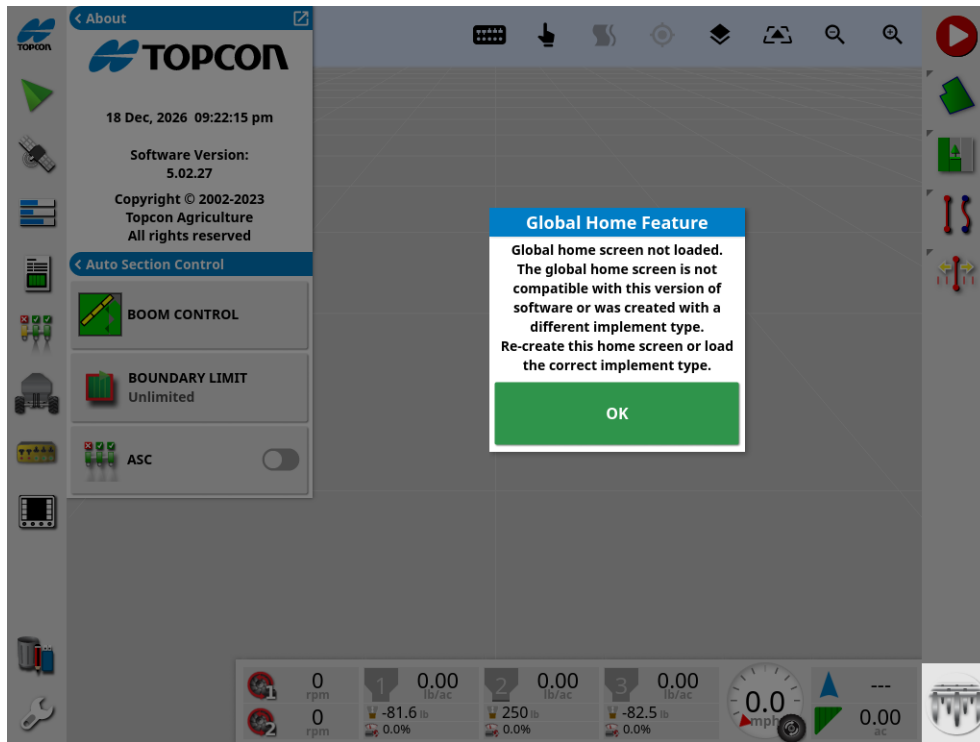
75. Horizon 5 will look slightly different than Horizon 4, buttons and functions will largely remain the exact same as Horizon 4. Our profile and settings will carry over from the update so we will not need to change anything there.



76. Our **home screens** from Horizon 4 **will not work** with the new version. These screens will need to be remade.



77. If we attempt to load into these existing home screens we will get the following error.



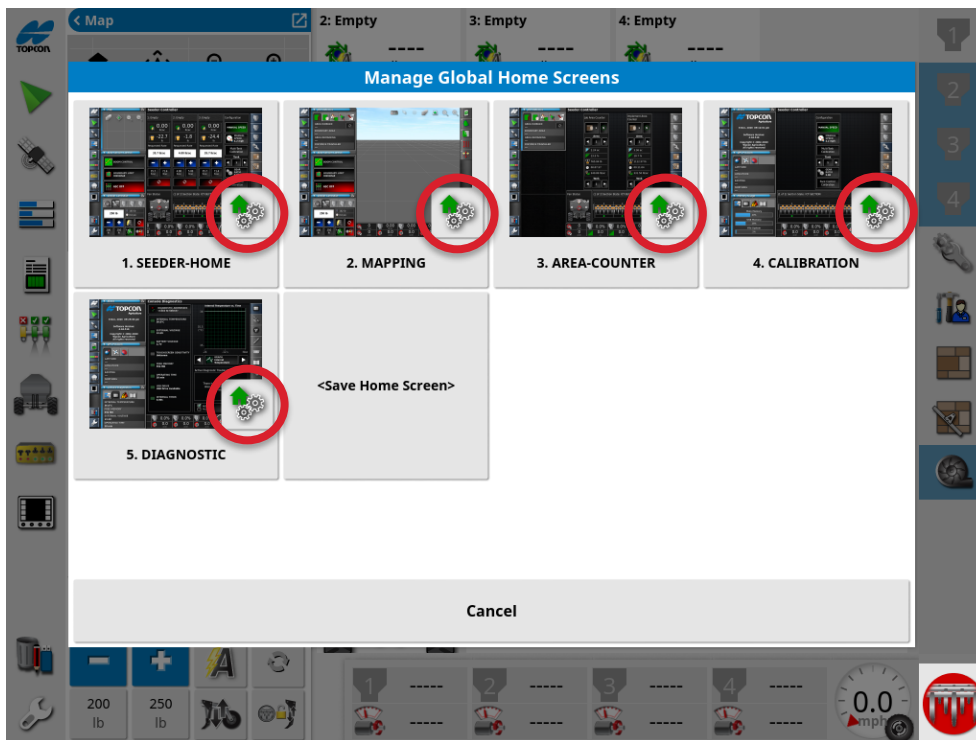
78. We now want to rebuild our home screens; the final section of this guide will take you through building the standard Morris home screens.

Part 8: Building Home Screens for Horizon 5

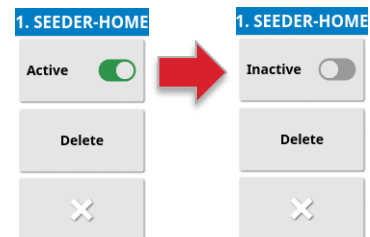
79. First, we want to **disable the existing 9 Series home screens**. These can also be deleted but we will just show how to **hide** them in this guide. To do this, we will swipe up from the bottom of the screen to bring up the toolbar and select the **House with Gears** Icon.



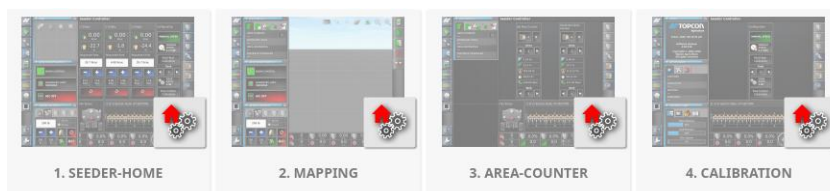
80. To hide the existing home screens, we will need to set them to **inactive** by selecting the **Green House with Gears** icon next to each.



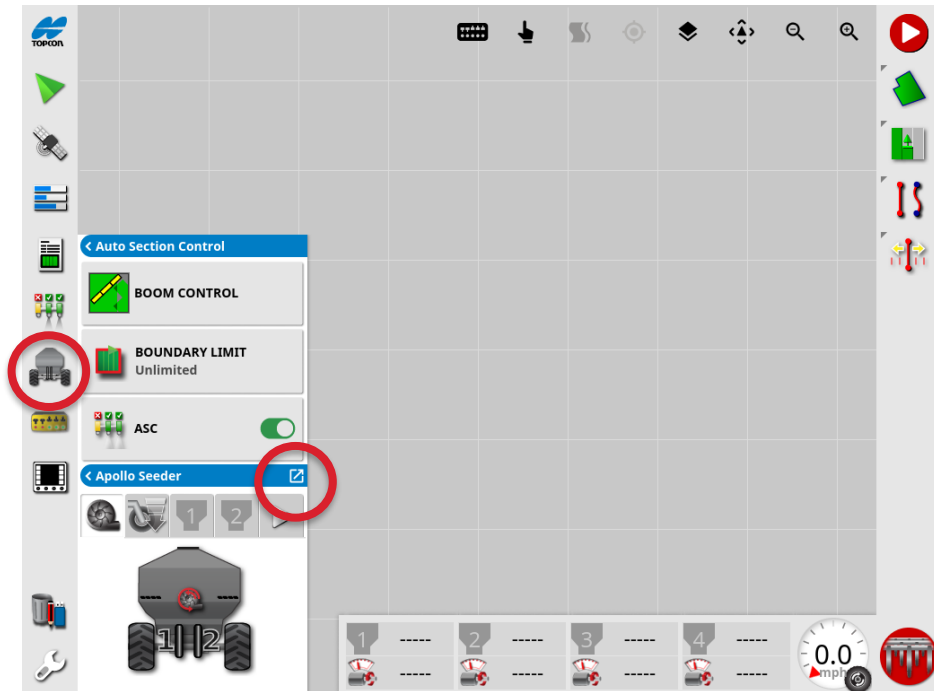
81. Toggle each screen from **Active** to **Inactive**.



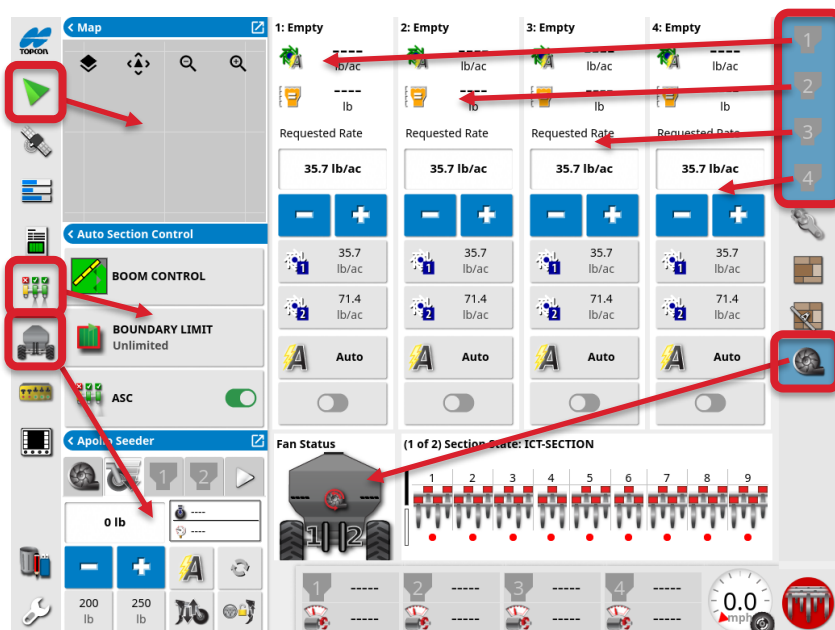
82. The old home screens should now all be **greyed out** and will have **red house icons** beside them. They will now be hidden when selecting home screens.



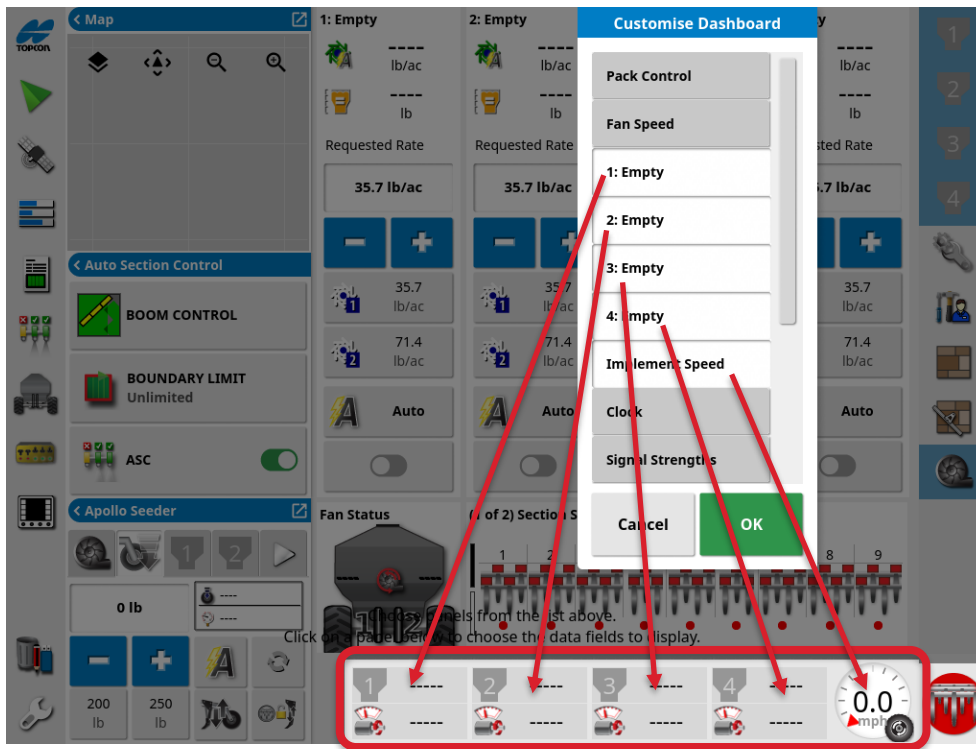
83. We will start by building the **Seeder-Home** screen. To do this we will need to expand the tank mini view to be full screen. First tap the **seeder icon on the left column**, then **tap in the top right of the Apollo Seeder mini view** to expand it. We can also expand the mini view by swiping it towards the middle of the screen.



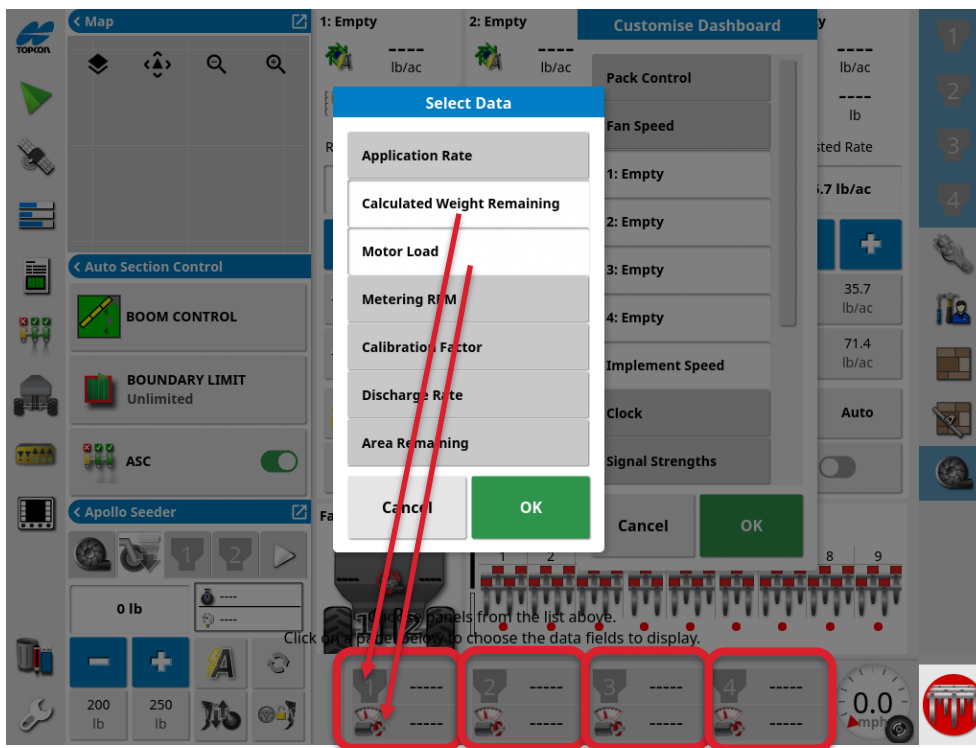
84. We can have **up to three mini views** displayed on the left side of the screen. They are toggled on and off using the **buttons in the left column**. The **tanks and other options** for the main view of the screen are toggled on and off using the **buttons in the right column**. We would like the following options selected for **Seeder-Home**:



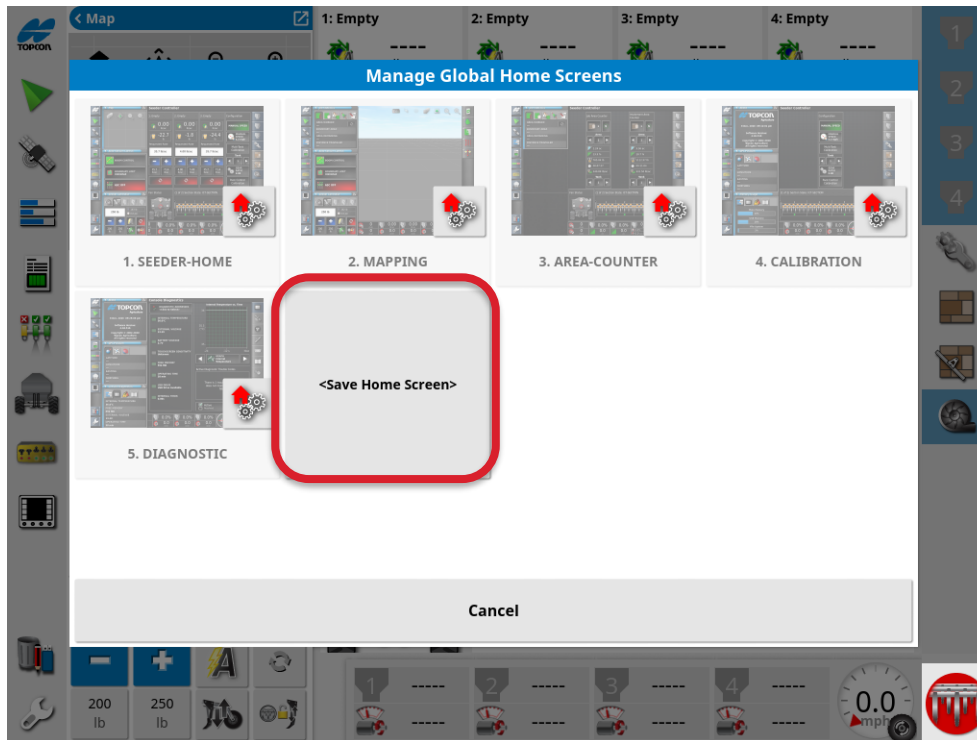
85. The bottom **dashboard** bar can be configured by tapping on it once to choose which data fields to display. These are our suggested options for Seeder-Home:



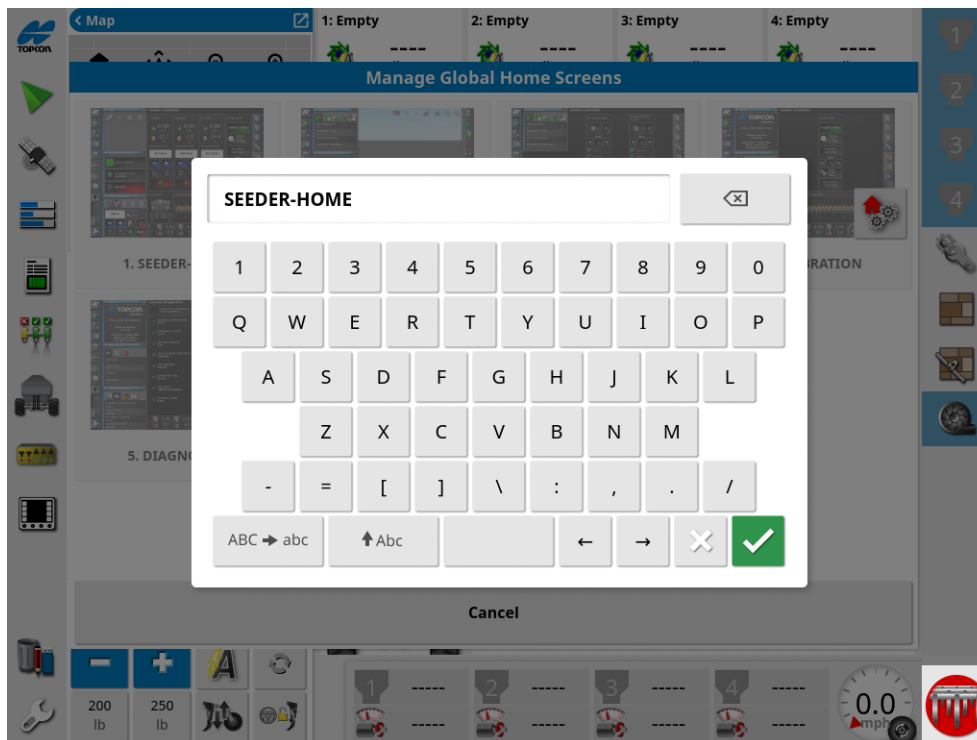
86. Tapping on the **data fields** at the bottom lets you configure what is displayed in each of them. Configure these options shown below for each of the tanks, **they must be done individually**.



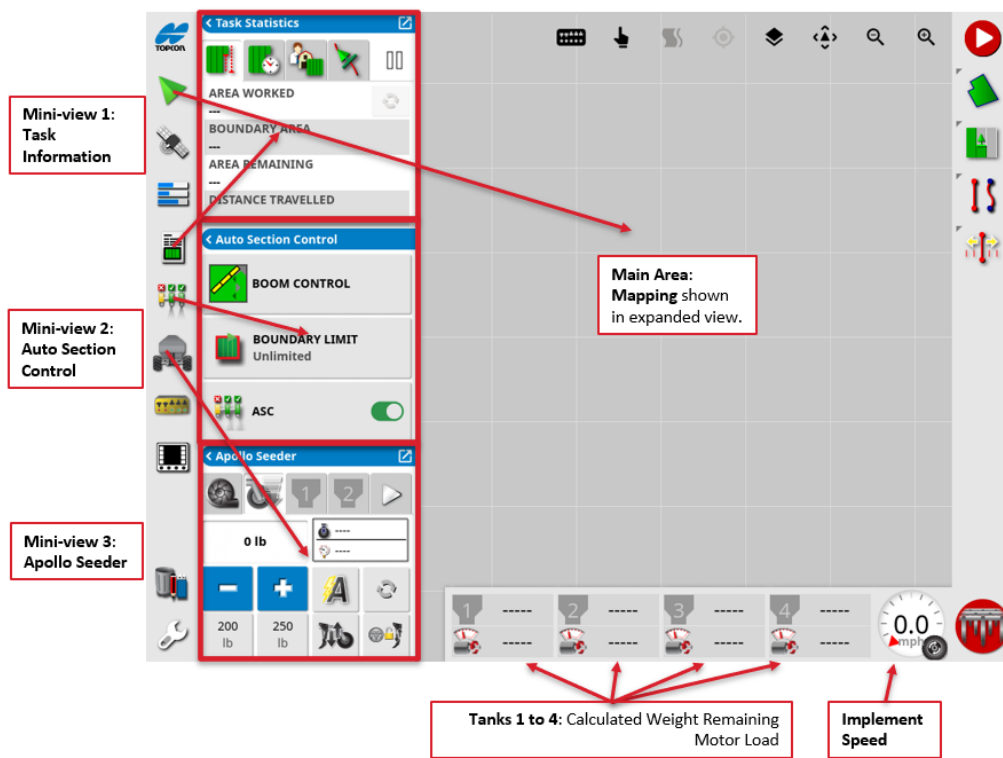
87. To save our configured home screen, we will swipe up from the bottom and Hit the House with Gears icon again. We will now select the <Save Home Screen>.



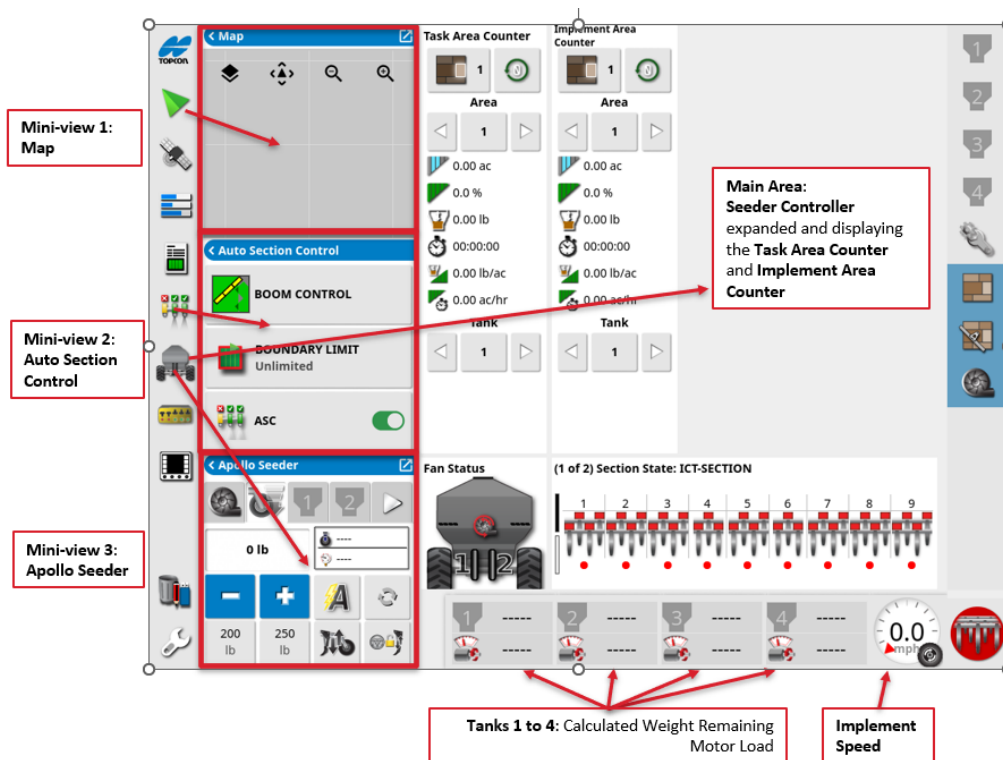
88. Name this home screen **SEEDER-HOME**. Hit the green checkmark to save it.



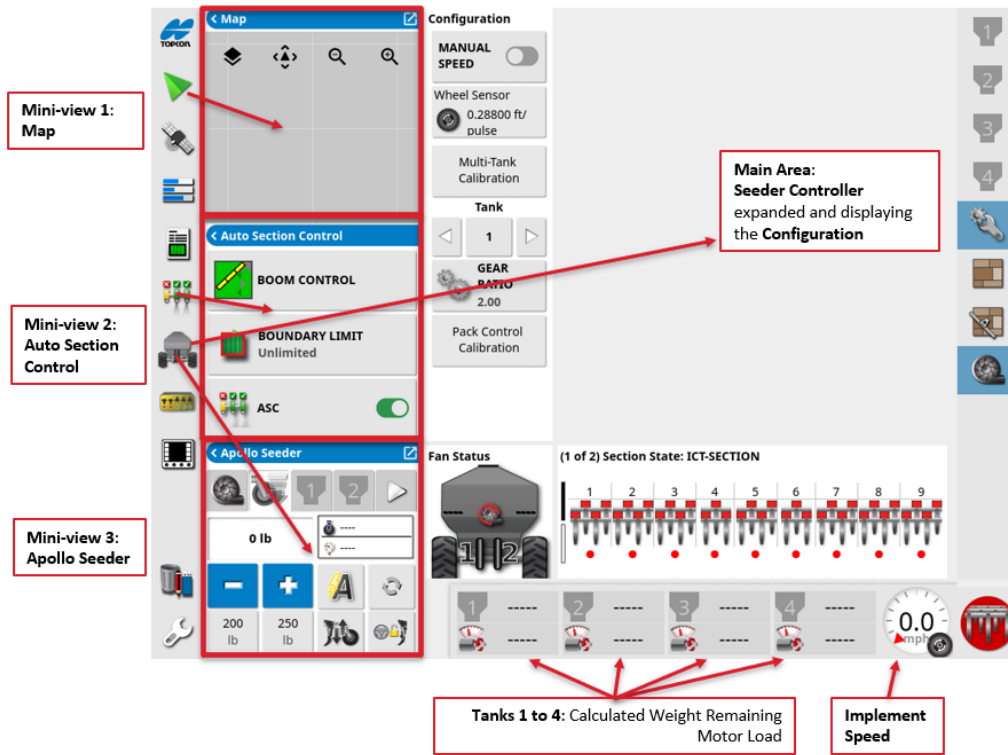
89. We can now build the rest of our home screens, pay attention to which buttons are shown in the expanded view. The **MAPPING** home screen is configured like this:



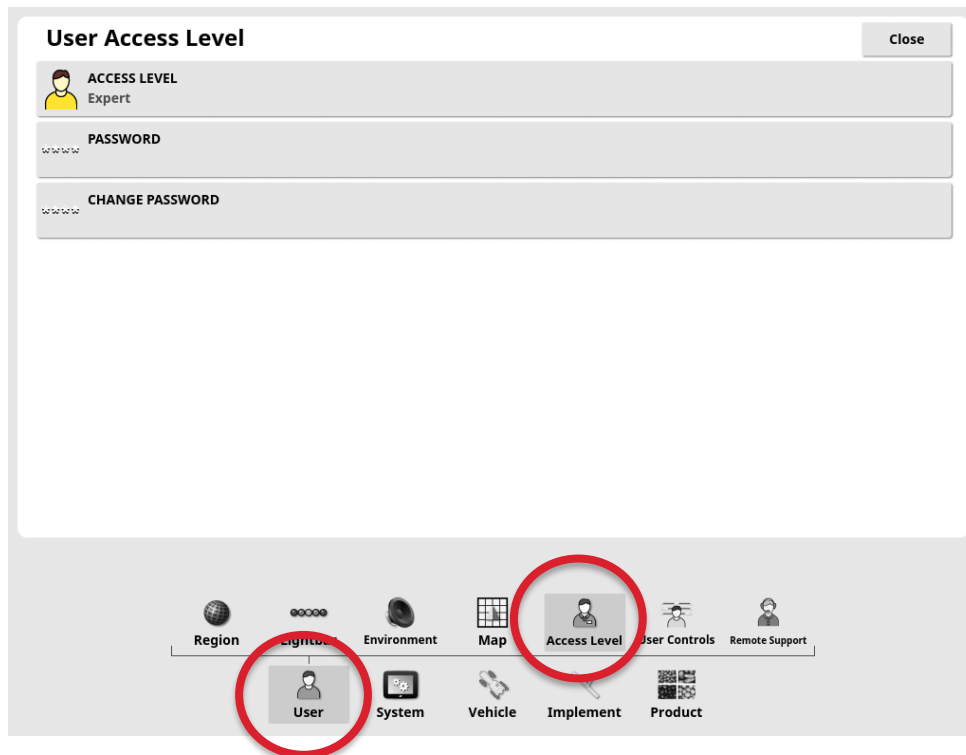
90. Make sure to **save previous home screen** before beginning to create the next one. The **AREA-COUNTERS** home screen is configured like this:



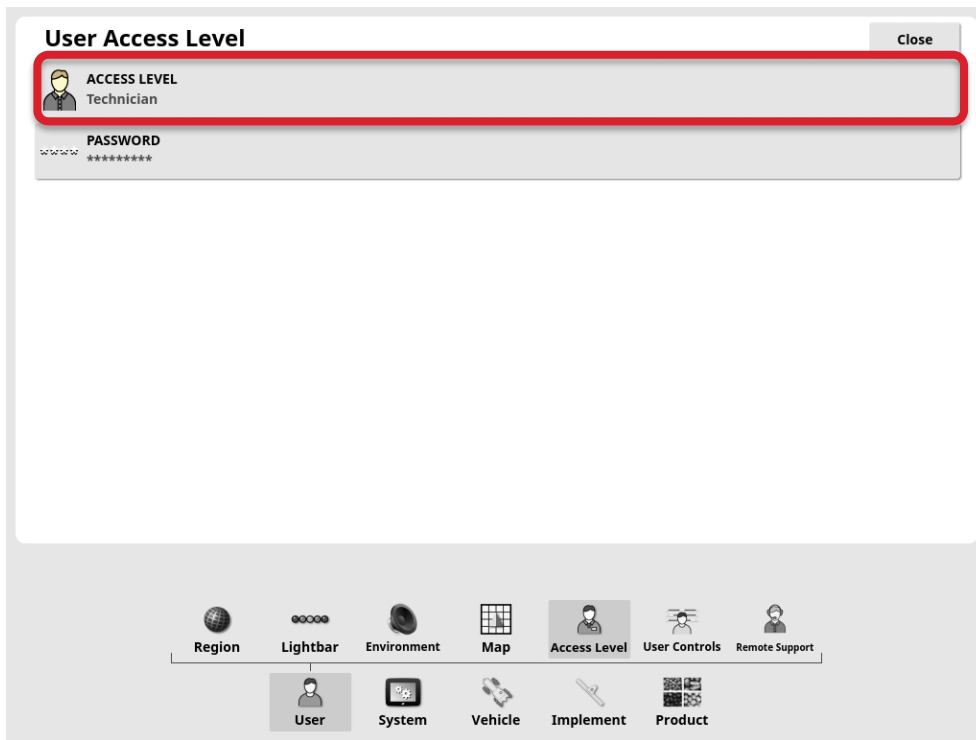
91. The CALIBRATION home screen is configured like this:



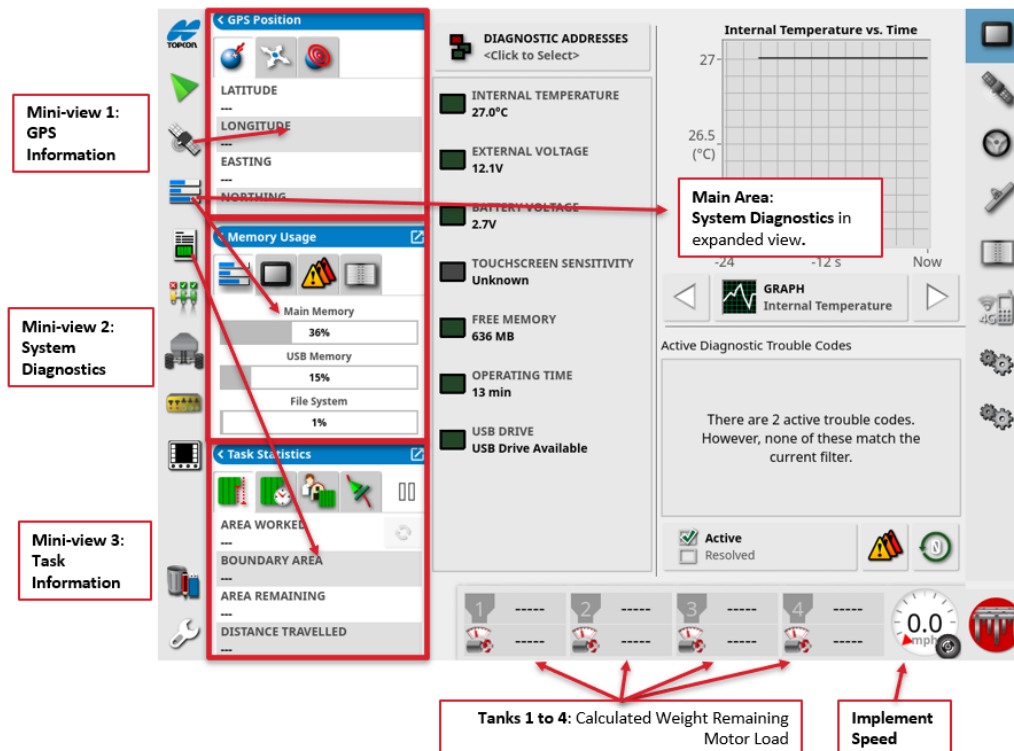
92. To create the final home screen, we will need to enter **Technician Mode**. This home screen can only be fully displayed while in technician mode as well. To get to this mode we must go into settings and navigate to **User** → **Access Level**



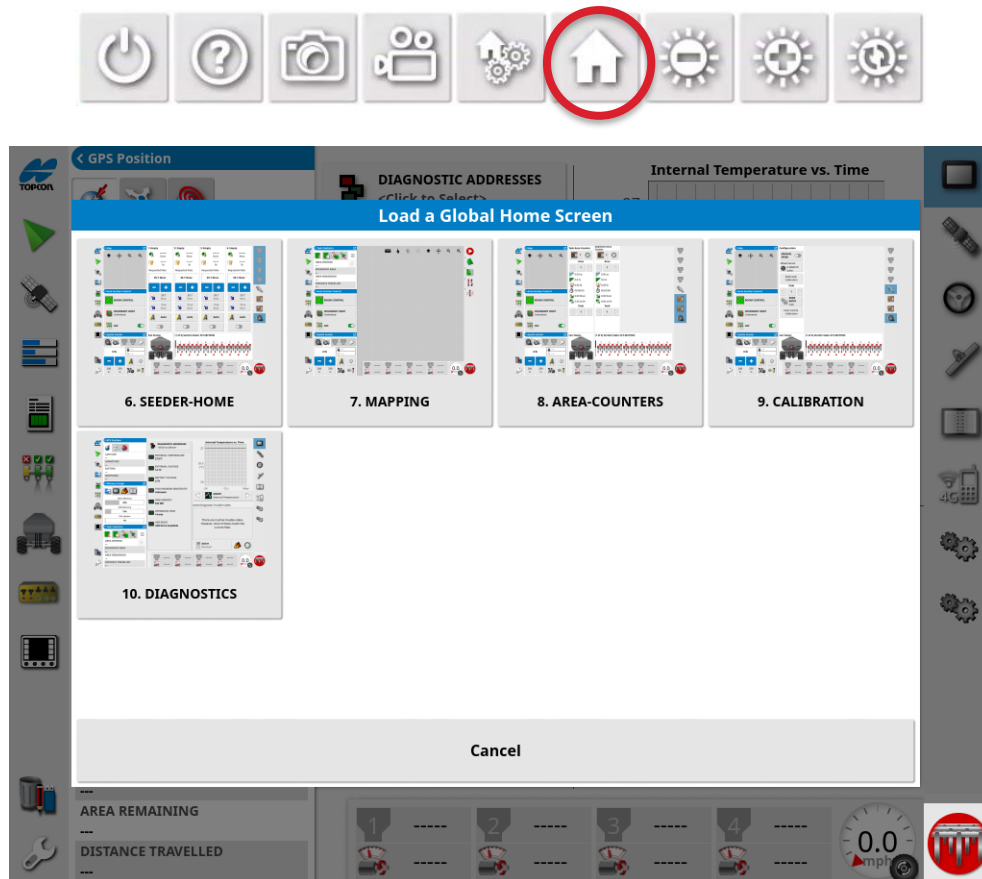
93. Select **Password** and type in the technician password: **SERVICE99**. Once you hit the green checkmark, you will see that we are now in tech mode.



94. We can now close out of the settings and configure our final home screen, **DIAGNOSTICS**:



95. Once we have saved our final home screen, we should see the following options when swiping up and selecting the home screen button.



96. Our seeder should now be fully configured to use **Horizon 5**.

97. **Our jobs will not have been carried over into the new version** but any products, fields, and boundaries that have been created will still be usable.

98. Make sure to remove any remaining USB stick from the port on the monitor and **plug our USB antenna back in**.

99. We strongly recommend doing a **product calibration** following completion of this update.