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TOPCON
Precision Agriculture

X30 Apollo System Upgrading Monitor Software & ECU Firmware Version 3.24.509

TOPCON
Precision Agriculture

Tanks that have been updated with an ASC DUAL BOOM
RETROFIT KIT for 2018 will require software and firmware as
listed below. If software and firmware are not correct you may
see a warning on the X30 that there is an Apollo Firmware
mismatch.

Versions of software for X30 and Firmware required to retrofit a existing X30 Apollo system to operate ASC DUAL BOOM retrofit				
Year	X30 Software	Apollo CM-40	Apollo EM-24	Drill Fold ECU
2018	3.24.509	5.10.02, 1.6.1	0.3.1, 0.3.1	1.05, 1.1.1

Updating X30 Software

The files may also be downloaded, listed below are the instructions how to download.
Please go to our download site at **download.bourgault.com.**
Enter code **3.24.509**
Press the submit code button

http://download.bourgault.com

Enter Download Code:

3.24.509
Submit Code

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1. Download zip file attachment to a folder on your computer. File name will be 3.24.508zip

2. Extract files from the zip and put onto an empty thumb drive.

3. These are the files on the thumb drive make sure they are extracted like they are below do not leave in original file folder. There will be additional backup folders once used to upgrade a monitor as one will be created each time an Upgrade is performed. These backup folders will not affect the upgrade, however may need to be removed once thumb drive is full.
Leave the two folders at the top as they are. These are for the 3420 Drill fold ECU only.

Name	Type	Compressed size	Password ...	Size	Ratio	Date modified
3420 Drill Fold ECU	File folder					
x30-image-4	File folder					
bzImage-initramfs-x30	File	6,692 KB	No	6,705 KB	1%	8/5/2016 6:56 AM
Console.ini	Configuration settings	1 KB	No	1 KB	0%	8/5/2016 6:56 AM
install_mbr.cmd	Windows Command Script	1 KB	No	1 KB	25%	8/5/2016 6:56 AM
install_syslinux.txt	Text Document	1 KB	No	1 KB	34%	8/5/2016 6:56 AM
mongoose_io_aux_fw.hex	HEX File	16 KB	No	39 KB	60%	8/5/2016 6:57 AM
mongoose_io_fw.hex	HEX File	49 KB	No	120 KB	60%	8/5/2016 6:57 AM
mongoose_slave_fw.hex	HEX File	72 KB	No	177 KB	60%	8/5/2016 6:57 AM
mongoose-ecu_aux_upgrade.tar.gz	ACDSee Photo Manager 1...	135 KB	No	135 KB	1%	8/5/2016 6:57 AM
mongoose-ecu_upgrade.ipk	IPK File	1,956 KB	No	1,968 KB	1%	8/5/2016 6:57 AM
README.html	HTML Document	1 KB	No	2 KB	61%	8/5/2016 6:57 AM
rootfs.ext2	EXT2 File	36,199 KB	No	49,152 KB	27%	9/11/2015 6:50 AM
syslinux.cfg	CFG File	1 KB	No	1 KB	53%	8/5/2016 6:56 AM
syslinux.exe	Application	19 KB	No	28 KB	36%	8/5/2016 6:56 AM
vesamenu.c32	C32 File	76 KB	No	143 KB	48%	8/5/2016 6:56 AM
x30-image-x30.tar.gz	ACDSee Photo Manager 1...	155,724 KB	No	156,774 KB	1%	8/5/2016 6:56 AM
x30-rescue.sh	SH File	3 KB	No	10 KB	73%	8/5/2016 6:56 AM

Before upgrading firmware ensure that the ECU's are detected. If the ECU's are not detected refer to Detecting Apollo ECU's
INSERT USB WITH REQUIRED FILES TO BEGIN

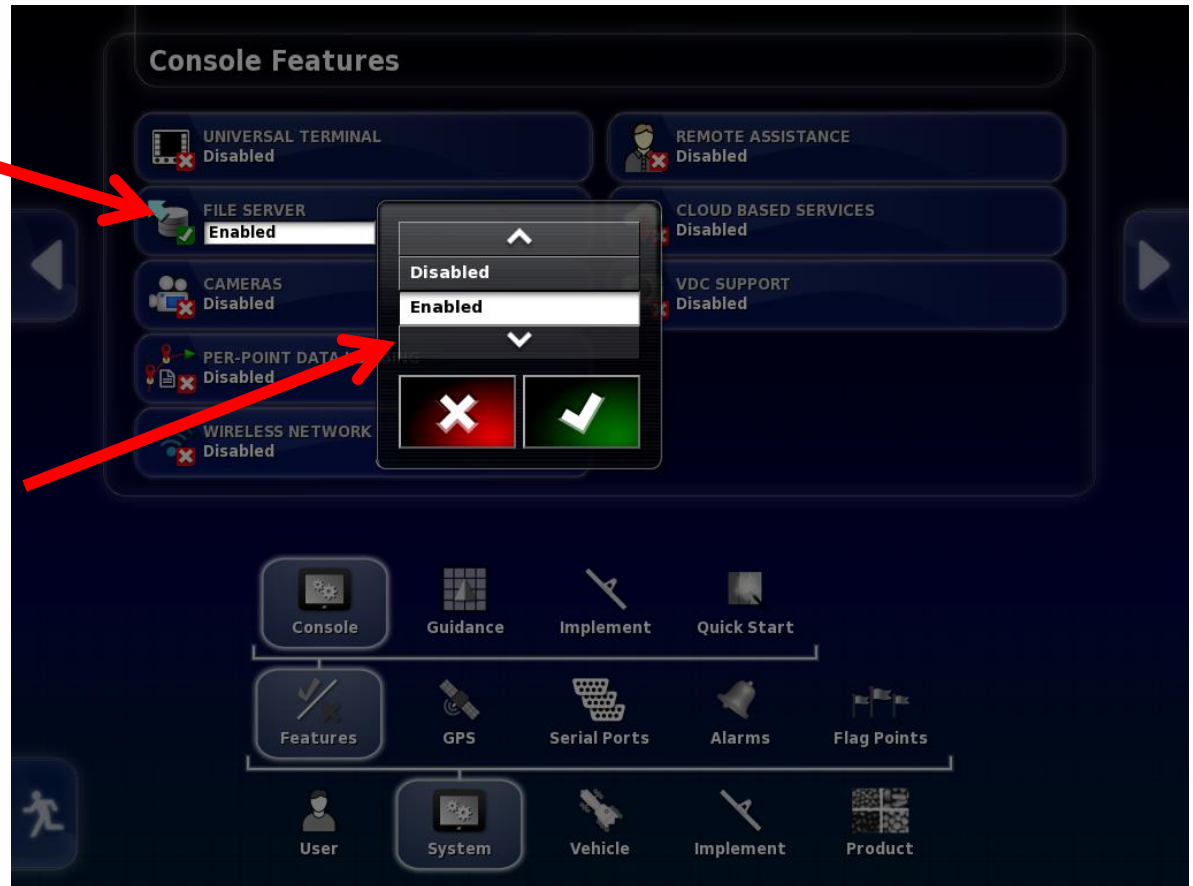Go to settings page by touching wrench in lower left of X30 screen

The first step is to Ensure that the file Server is enabled. Go to System/ Features/ Console

Ensure File
Server
Is Enabled

If not select
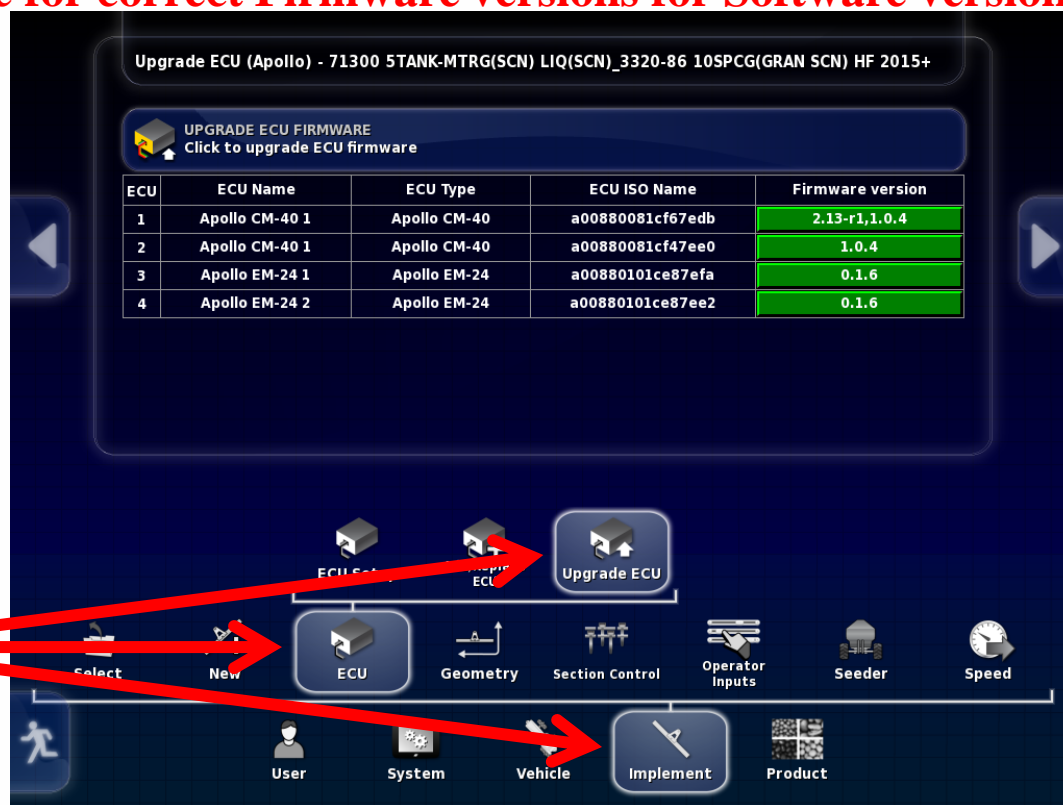Enabled and then
press check mark

Console Features

UNIVERSAL TERMINAL
Disabled

REMOTE ASSISTANCE
Disabled

FILE SERVER
Enabled

CLOUD BASED SERVICES
Disabled

Disabled

Enabled

CAMERAS
Disabled

VDC SUPPORT
Disabled

PER-POINT DATA
Disabled

WIRELESS NETWORK
Disabled

Console   Guidance   Implement   Quick Start

Features   GPS   Serial Ports   Alarms   Flag Points

User   System   Vehicle   Implement   Product

Please be aware the Firmware versions in the examples shown on screen shots may not match the versions
required, refer to last page for correct Firmware versions for Software version 3.24.509

Once the file server is enabled the next step is to check whether the ECU's have been properly detected

Upgrade ECU (Apollo) - 71300 5TANK-MTRG(SCN) LIQ(SCN)_3320-86 10SPCG(GRAN SCN) HF 2015+

UPGRADE ECU FIRMWARE
Click to upgrade ECU firmware

ECU	ECU Name	ECU Type	ECU ISO Name	Firmware version
1	Apollo CM-40 1	Apollo CM-40	a00880081cf67edb	2.13-r1,1.0.4
2	Apollo CM-40 1	Apollo CM-40	a00880081cf47ee0	1.0.4
3	Apollo EM-24 1	Apollo EM-24	a00880101ce87efa	0.1.6
4	Apollo EM-24 2	Apollo EM-24	a00880101ce87ee2	0.1.6

Select
Implements/
ECU/
Upgrade ECU

If the ECU's have been detected an Id will be present under ECU ISO Name. It will also display the firmware version once ECU information is uploaded.
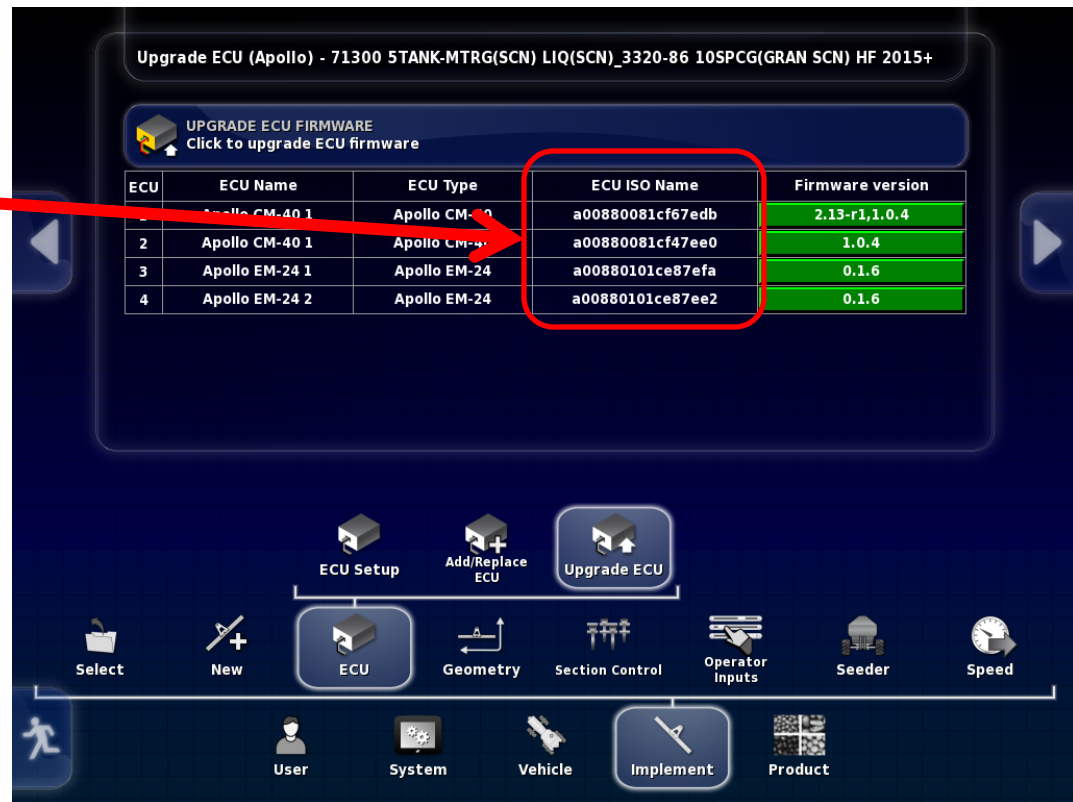
In the right column under Firmware version, select green tab for ECU to be upgraded.

This will vary based on options selected with tank. There will be from one to six ECU's that may need to be upgraded

Upgrade ECU (Apollo) - 7700 5TANK-MTRG(SCN)_3320-60 10SPCG(GRAN SCN)

UPGRADE ECU FIRMWARE
Click to upgrade ECU firmware

ECU	ECU Name	ECU Type	ECU ISO Name	Firmware version
1	Apollo CM-40	Apollo CM-40	a00880081cec7ec	2.11-r6
2	Apollo CM-40 1	Apollo CM-40	a00880081ce77ec5	0.0.18
3	Apollo EM-24 1	Apollo EM-24	a00880101cfd7ef9	0.0.15

ECU Setup   Add/Replace ECU   Upgrade ECU

Select   New   ECU   Geometry   Section Control   Operator Inputs   Seeder   Speed

User   System   Vehicle   Implement   Product

After the green tab has been selected the upgrade option will come up. For Apollo CM-40 (Master) select Upgrade both Then press check mark

After the check mark has been pressed the green tab that had been selected will become red and display the upgrade type you selected. Press the Upgrade ECU Firmware tab at the top of the page.

You will get warning that System will need to restart. Press Check mark.

You will be guided through the firmware upgrade with the help of a wizard.
Read instructions and press right arrow when it turns yellow.

Step 1 starts the upgrade procedure
You will be able to track progress here.
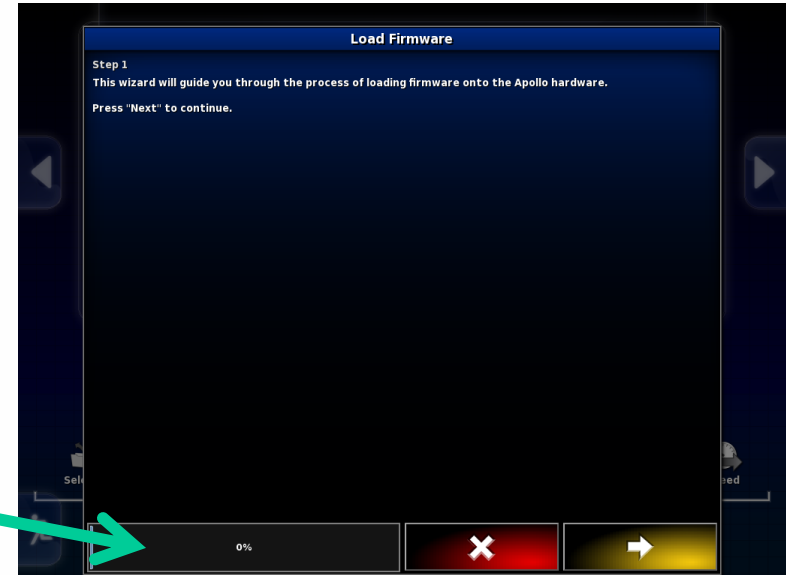
Step 2
To start the upgrade insert the thumb drive into the left side of the X30 when right arrow turns yellow it is ready right arrow can be pressed.

Step 3
A list of files on the thumb drive should show up listed on screen

press the right arrow button to continue.

Load Firmware

Step 3:
Select the directory containing the firmware files used for upgrading the Apollo hardware.

📁 USB

Firmware upgrade files (*.ipk,*.hex):

^

📁 3420 Drill Fold ECU
📁 Screenshots
📁 x30-image-4
mongoose-ecu_aux_upgrade.tar.gz
mongoose-ecu_upgrade.ipk
mongoose_io_aux_fw.hex
mongoose_io_fw.hex
mongoose_slave_fw.hex
MongooseUpgrade.xml

⌄

66%

Step 4
The upgrade will now
begin
Press Check mark
To start Upgrade

Load Firmware

Step 4
The system will now upgrade the Apollo CM-40 first before prompting the user to continue to upgrade the Apollo CM-40 / EM-24 firmware. Please do not remove the USB drive until all firmware has been loaded.

Press "Okay" to begin.

100%

Firmware transfer will begin. (This may take up to twenty minutes to complete.). This is upgrading the main part of the ECU
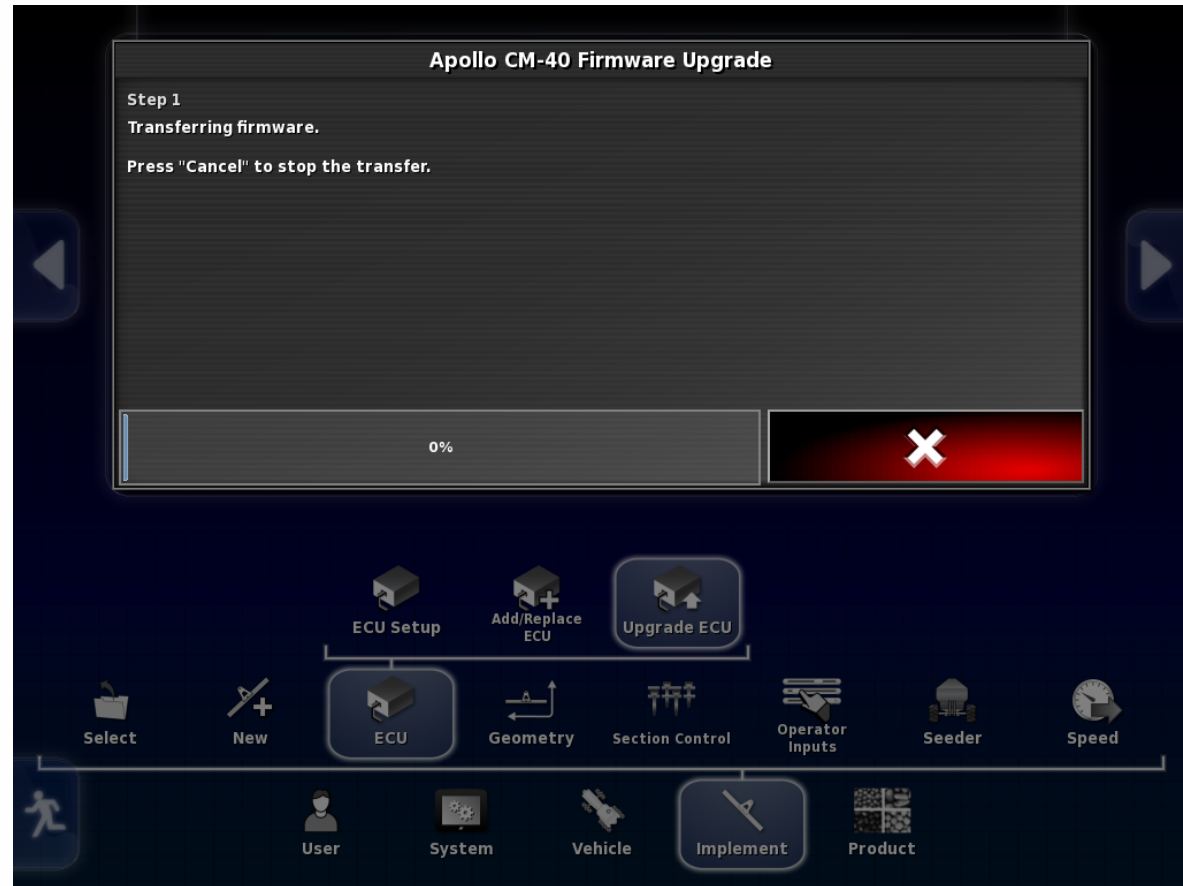
Once the Upgrade is complete you will see this screen.

Wait until the Green Synchronizing bar (this will appear at the top center of the screen) goes away before pressing check mark.

The monitor will now shut down and restart.

Note: if you selected upgraded both the auxiliary firmware will now update. It will be an hour glass on the screen but only takes a short time and then it will shut down.

ⓘ Information   Synchronising ECU

Apollo CM-40 Firmware Upgrade

Step 5
Upgrade completed.

Press "Okay" to continue.

100%

ECU Setup   Add/Replace ECU   Upgrade ECU

Select   New   ECU   Geometry   Section Control   Operator Inputs   Seeder   Speed

User   System   Vehicle   Implement   Product
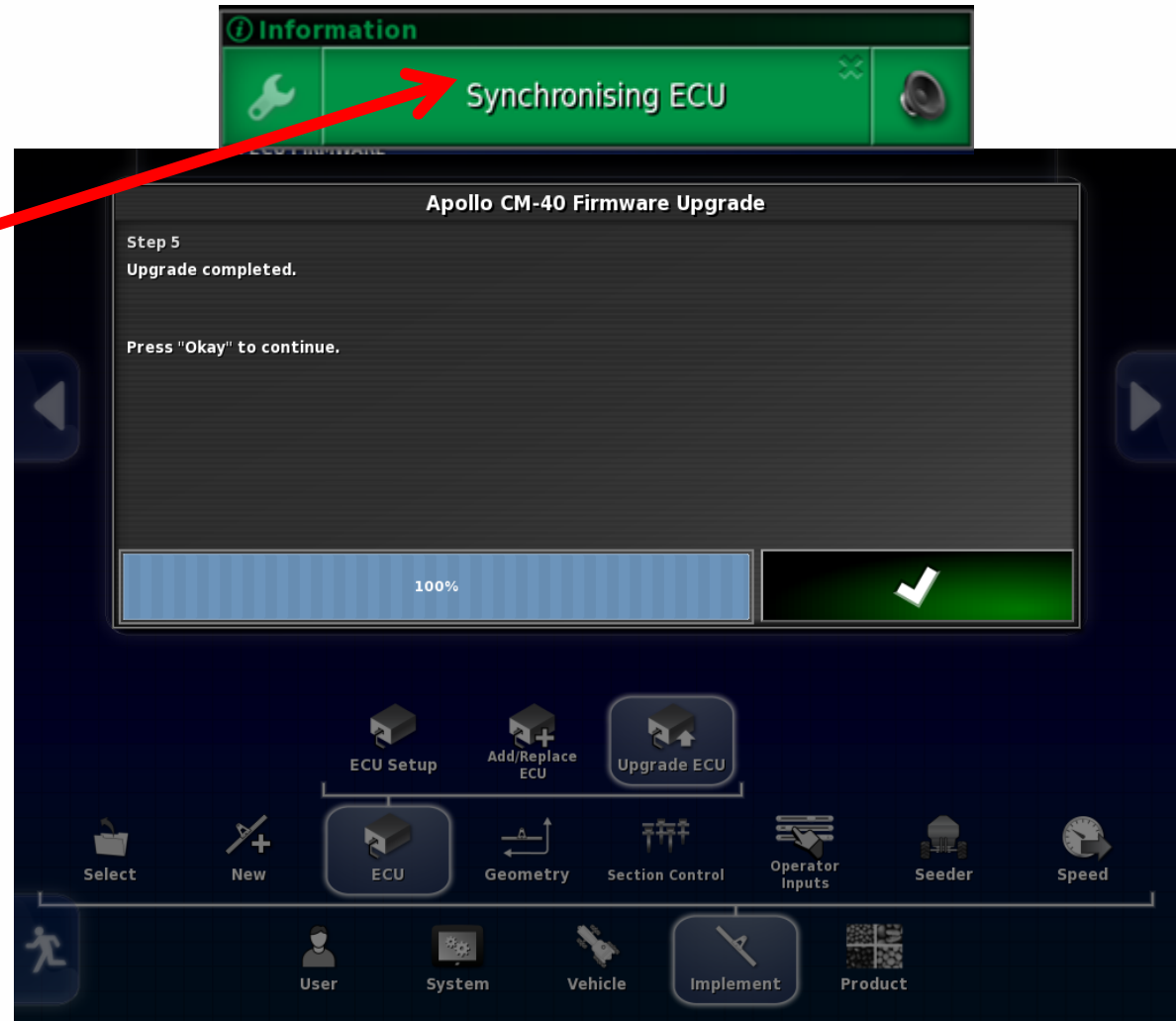
If the firmware version does not upload after the monitor restarts, (this can take a few minutes).
It will be necessary to power the ECU down by shutting tractor off or unplugging the ISO plug at the back of the tractor. (See next page)

If monitor fails to upload information from ECU unplug This ISO plug at the back of the tractor to cut power to the ECU.

For units hooked to keyed power the tractor can be shut off to accomplish this as well.

Monitor will show that it is Synchronizing and Configuring ECU once this is complete both the Main and Aux. Firmware should be displayed and match what was uploaded. If one or both are not correct this process must be repeated for the one(s) not matching the desired firmware.

Main   Aux

If both Main and Aux.
firmware are correct
the upgrade for the
Apollo CM-40 (Master)
is complete.
If you only have one ECU
on the tank, (four tank
metering or less) Upgrade
is complete.

If your tank has 5 tank
metering, sectional control,
or blockage follow
procedure following for
ECU's present.

Main   Aux

Upgrade ECU (Apollo) - 7700 5TANK-MTRG(SCN)_3320-40 10SPCG(GRAN SCN)

UPGRADE ECU FIRMWARE
Click to upgrade ECU firmware

ECU	ECU Name	ECU Type	ECU ISO Name	Firmware version
1	Apollo CM-40	Apollo CM-40	a00880081cec7eca	2.11-r6,0.0.18
2	Apollo CM-40 1	Apollo CM-40	Please replace ECU	N/A
3	Apollo EM-24 1	Apollo EM-24	Please replace ECU	N/A

ECU Setup   Add/Replace ECU   Upgrade ECU

Select   New   ECU   Geometry   Section Control   Operator Inputs   Seeder   Speed

User   System   Vehicle   Implement   Product

EXTRA CM-40

If tank has more that one CM-40 (tank 5 &/or Packmaster follow this upgrade procedure.

Go to Implement/
 ECU/
 Upgrade ECU
Press tab for CM-40 1
 (slave)
 select upgrade, press
Check mark.

Tab will turn red
Operation Requires Restart
warning will come up,
press the check mark

Follow steps of wizard like the procedure for the master.

Load Firmware

Step 1

This wizard will guide you through the process of loading firmware onto the Apollo hardware.

Press "Next" to continue.

0%

Load Firmware

Step 2

Insert a USB drive containing the firmware to continue.

Press "Next" to continue.

33%

Load Firmware

Step 3

Select the directory containing the firmware files used for upgrading the Apollo hardware.

USB

Firmware upgrade files (*.ipk,*.hex):

Screenshots
mongoose-ecu_aux_upgrade.tar.gz
mongoose-ecu_upgrade.ipk
mongoose_io_aux_fw.hex
mongoose_io_fw.hex
mongoose_slave_fw.hex
MongooseUpgrade.xml

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When firmware has completely loaded
Press the green check mark.

The monitor will restart.

The ECU should synchronize and the
firmware version is only visible for the Aux
firmware. You may have to shut
the tractor off or unplug the ISO Plug at the
back of the tractor, and plug it back in if it
does not upload the info from the ECU.

Load Firmware

Step 4
The system must now restart to upgrade the Apollo CM-40 / EM-24 firmware. Please do not remove the USB drive until the firmware is loaded.

Press "Okay" to restart.

100%

Upgrade ECU (Apollo) - 7700 5TANK-MTRG(SCN)_3320-60 10SPCG(GRAN SCN)

UPGRADE ECU FIRMWARE
Click to upgrade ECU firmware

ECU	ECU Name	ECU Type	ECU ISO Name	Firmware version
1	Apollo CM-40	Apollo CM-40	a00880081cec7eca	2.11-r6,0.0.18
2	Apollo CM-40 1	Apollo CM-40	a00880081ce77ec5	0.0.18
3	Apollo EM-24 1	Apollo EM-24	a00880101cfd7ef9	0.0.15

ECU Setup   Add/Replace ECU   Upgrade ECU

Select   New   ECU   Geometry   Section Control   Operator Inputs   Seeder   Speed

User   System   Vehicle   Implement   Product

In order to Upgrade the Main Firmware you will have to create an "Upgrade" profile. (Some tanks may already have this profile) Do this after you have Upgraded all ECU's on machine. (Once Upgrade is complete you must then return to original profile)

Go to Implement/
 New/
 Factory
Select a new implement
 with only one ECU select
The first item in each list
6000/
6280/
6280 2 TANK MTRG 1FAN
 Select Apollo for ECU type
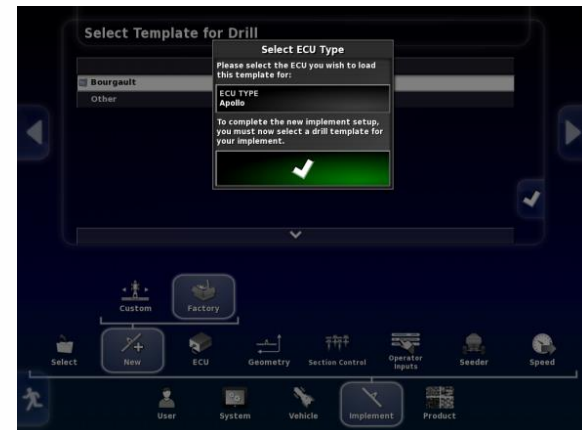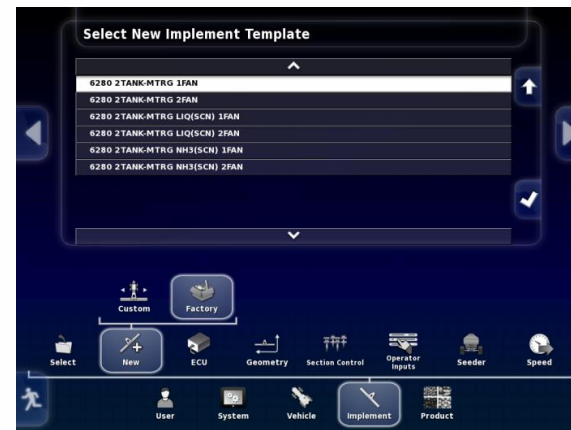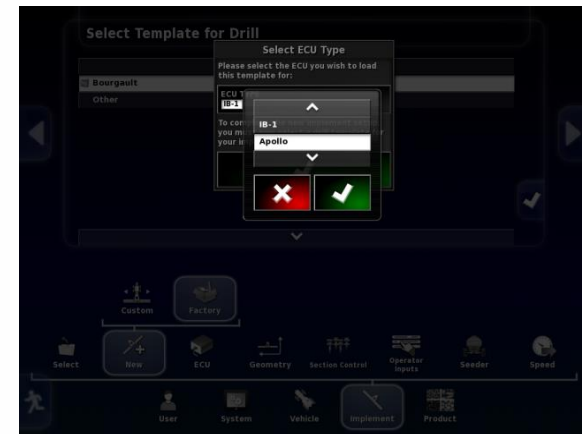
Name new profile Extra CM-40 (UPGRADE)

While the system is re-starting unplug all of the COMMS connectors from all ECU's except the one you want to Upgrade, CM-40 (Slave)(the slave only has 1 or 2 Channels used if you have a slave the Master will have all 4 Channels used)

COMMS Port being Detected

COMMS Unplugged
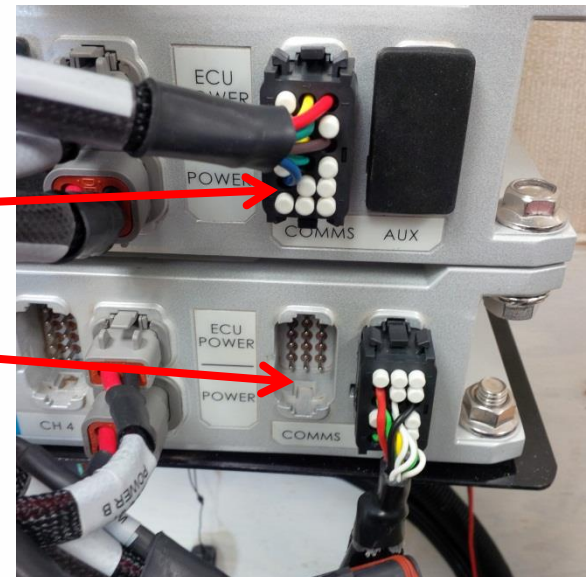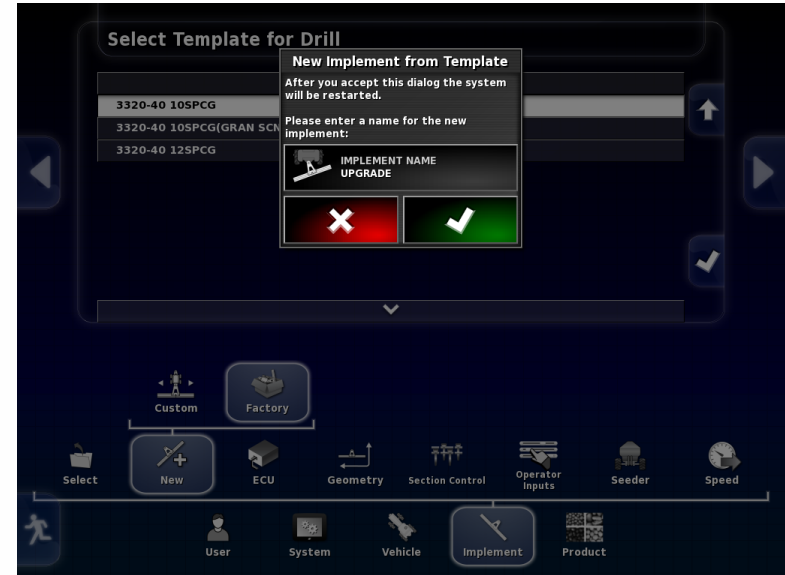
Go to Implement/
 ECU/
 Add/Replace ECU

Select Replace CM-40
Press check mark.

Follow directions of wizard
to replace ECU.
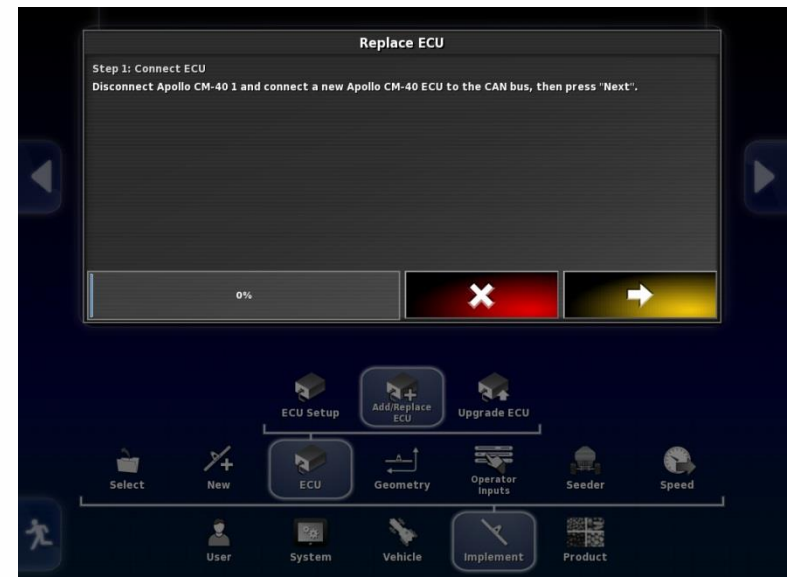
Press the Arrow when it turns yellow to advance to next step.
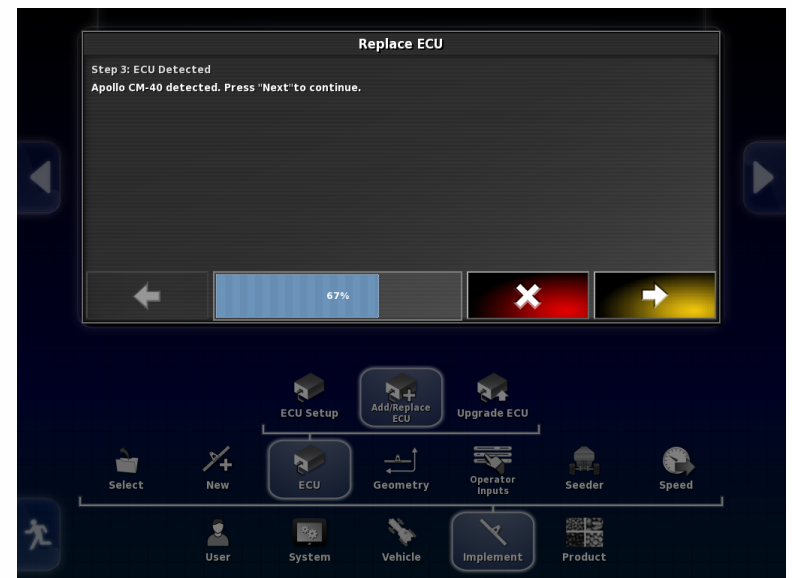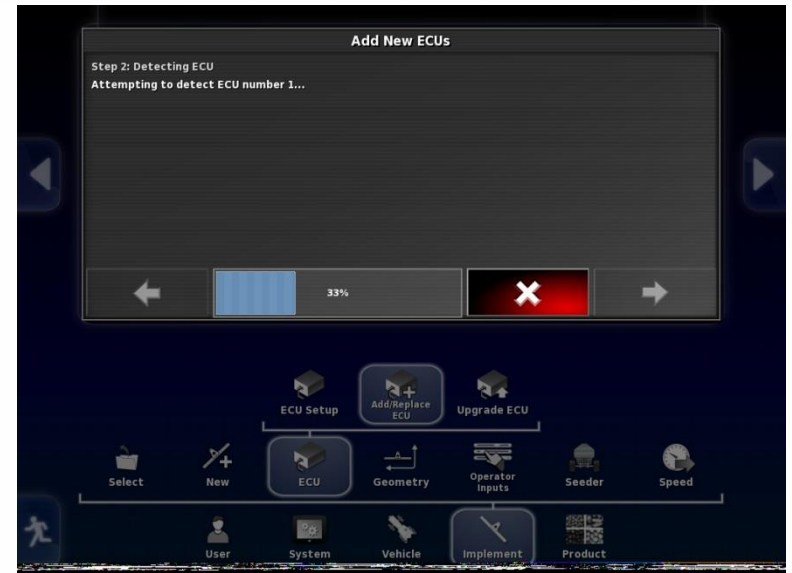
Once complete press green tab with
Check mark.
Monitor will re-start.
If ECU is not detected unplug ISO plug
 at back of tractor
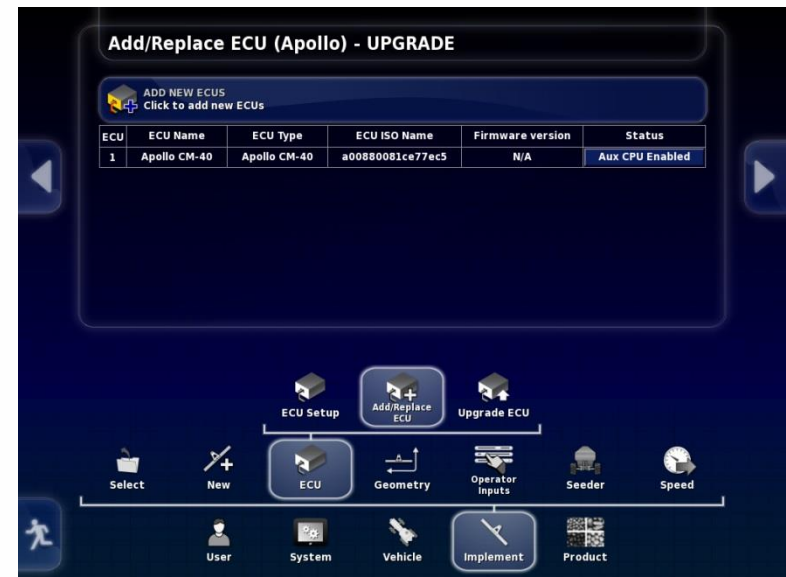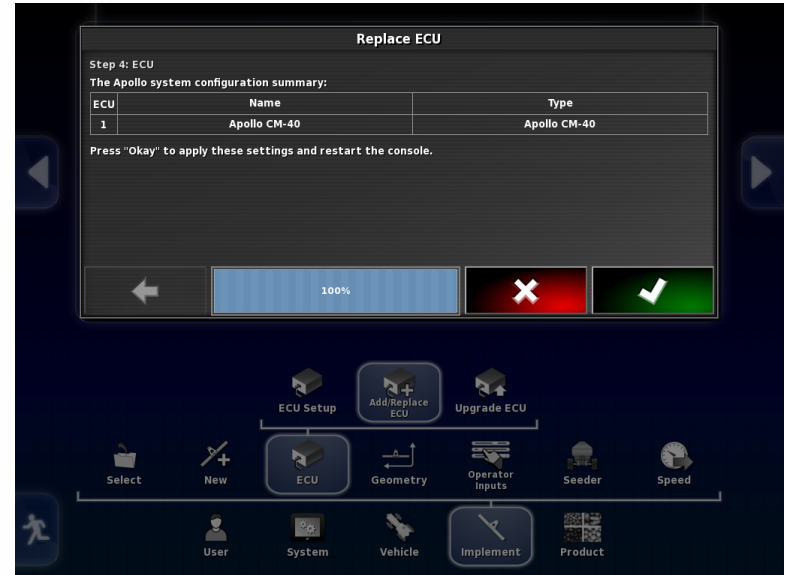
If ECU is selected should get a green tab indicating the ECU information is being uploaded.
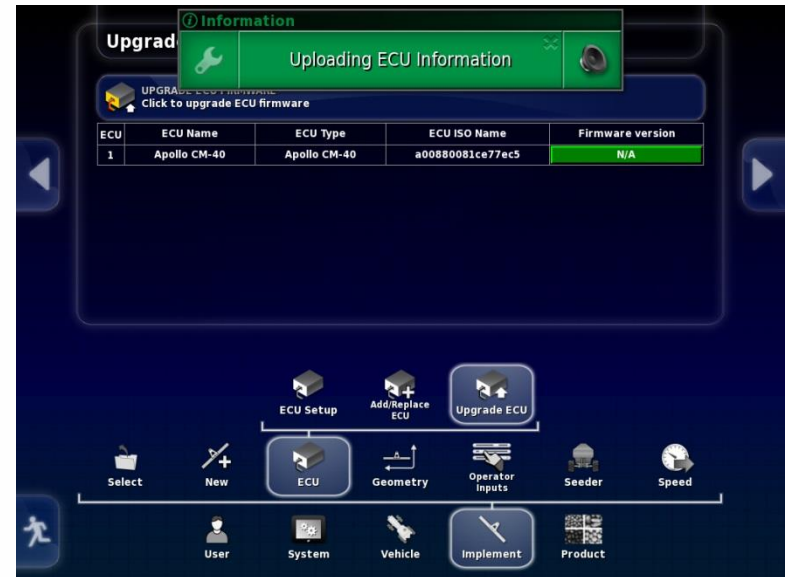
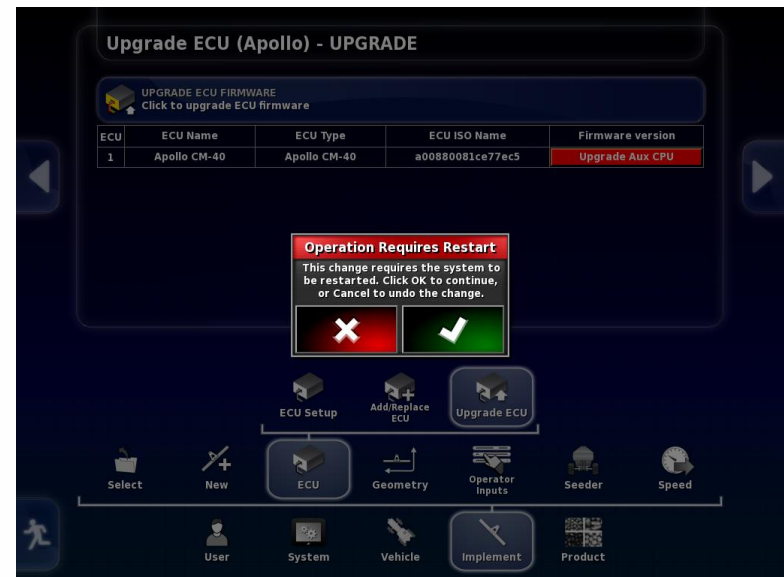Once this is complete you can now Upgrade the firmware, select Update Main CPU, press check mark.
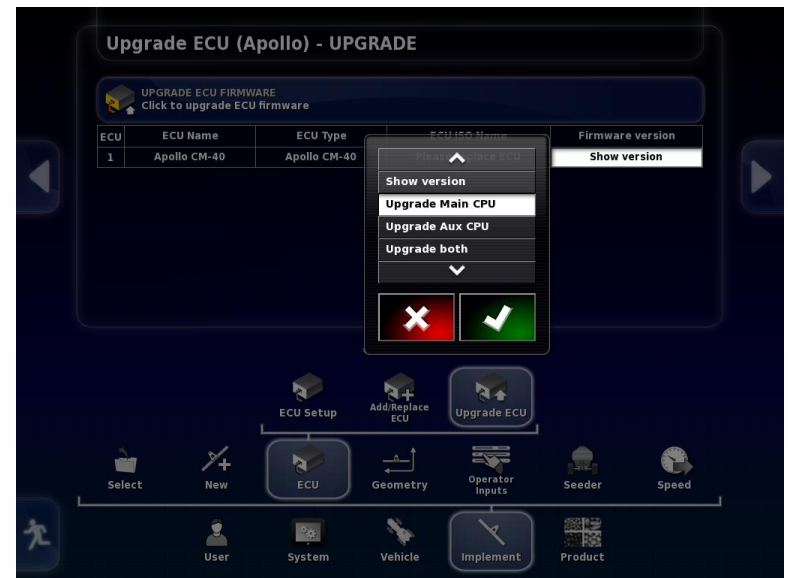
EXTRA CM-40

The right tab will turn red.
Press the Upgrade ECU Firmware tab
at the top to begin Upgrade.

Will get warning that a restart must occur
if you proceed. Press the check mark.

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Wizard will guide you through the
Firmware update.

Insert Thumb drive with Upgrade
 into USB port on side of X30
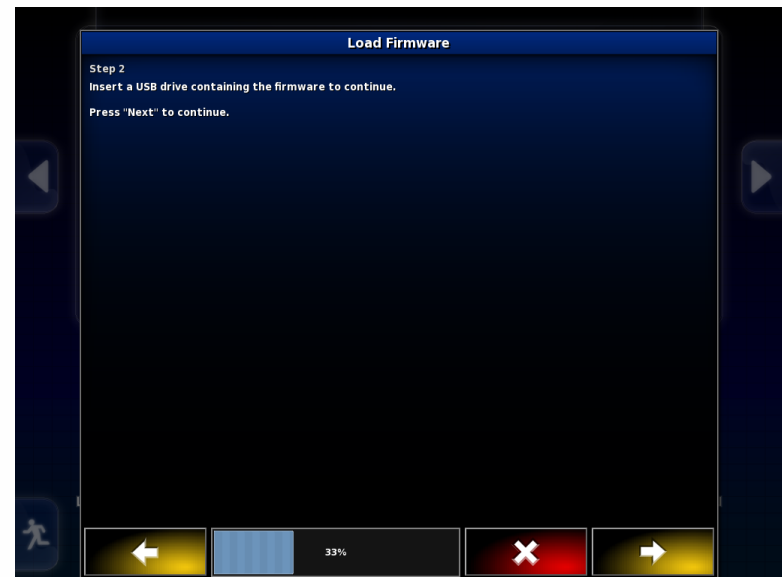
Upgrade files should be visible.
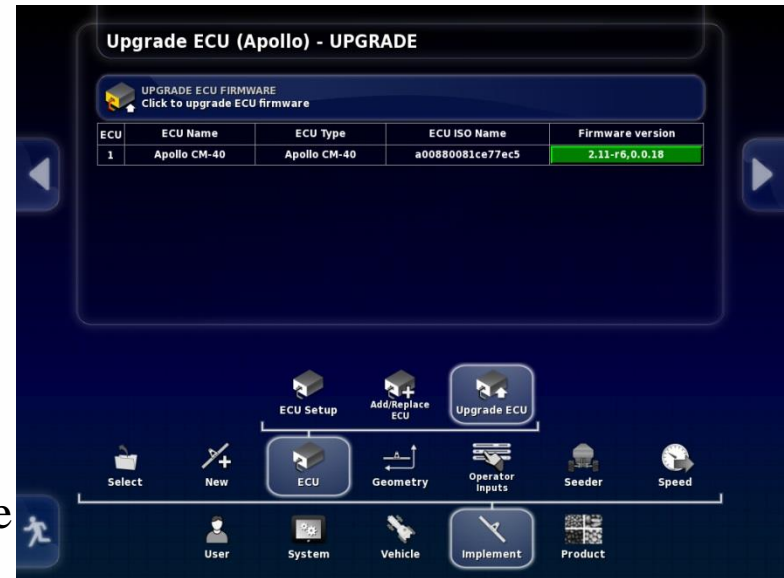
Once complete press check mark
to initiate restart.

Once firmware is detected check both Main and Aux firmware to make sure they are the correct versions.

You will now have to switch profiles back to the original profile of your actual machine.

Re-plug all of the COMMS connectors into the proper ECU's.

You may have to shut down/unplug ISO connector at the back of the tractor to get ECU information to upload.

This completes the Upgrade for the Main portion of the CM-40 1 (slave Master ECU, 5 tank and 6 tank machines)

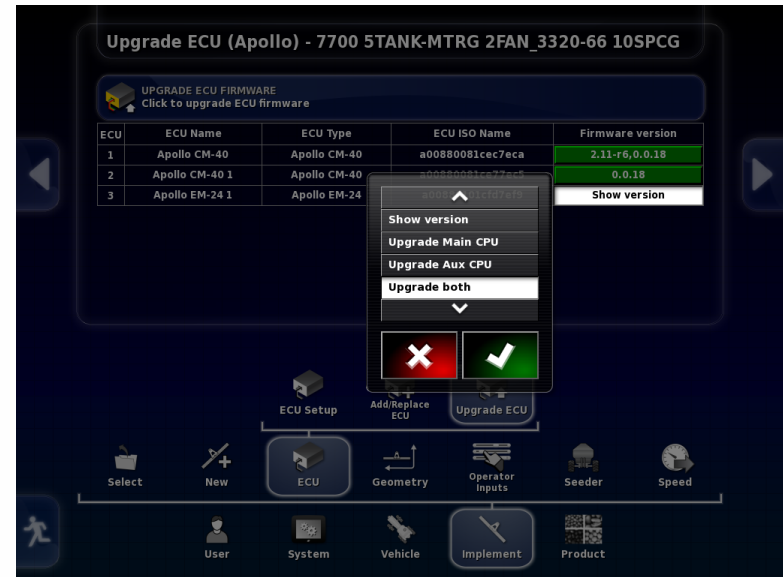Note: Downforce CM-40 would follow the same procedure if it is present and needs to upgraded to new firmware,

If tank has either sectional control or blockage or both firmware for Apollo EM-24 must also be completed.
This must be done for each EM-24 on machine. There will be one EM-24 for sectional control and one EM-24 for blockage. (blockage EM-24 mounted on drill, for a leading tank the sectional EM-24 is also mounted on the drill)

Go to Implement/
ECU/
Upgrade ECU

Press tab to right of EM-24 to be Upgraded, select Upgrade both,
press the check mark

Tab selected will turn red.

Press the tab labelled Upgrade ECU Firmware to initiate Upgrade
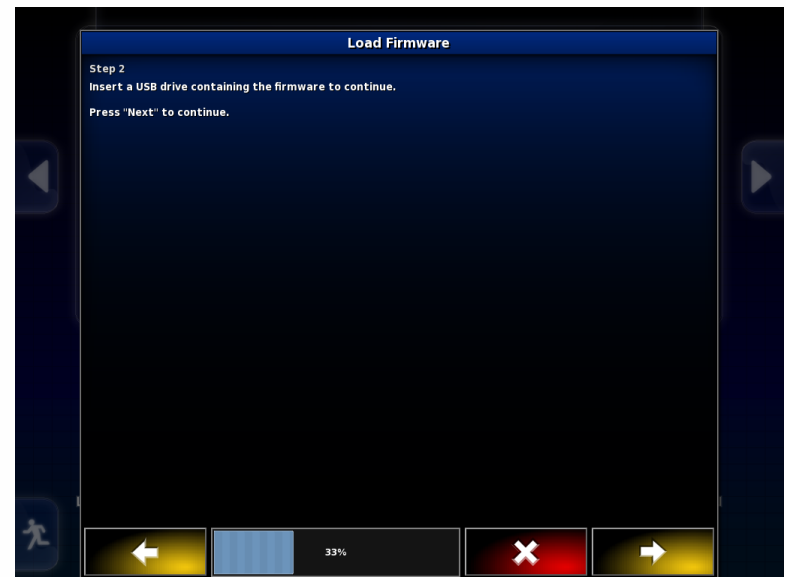
Should get warning
 that a restart is required.

Press the check mark.

Follow steps given by wizard.

Once firmware is loaded press the check mark at bottom right of X30 screen.

Monitor will restart
If monitor does not detect
ECU power down by shutting
tractor off or unplugging the
ISO plug at the back of the
Tractor.
Once synchronized the
firmware should be visible,
Check that it is the correct
version.
If only one EM-24 you are
finished.

If you have a second EM-24
repeat procedure for second
EM-24. (Second EM-24 will
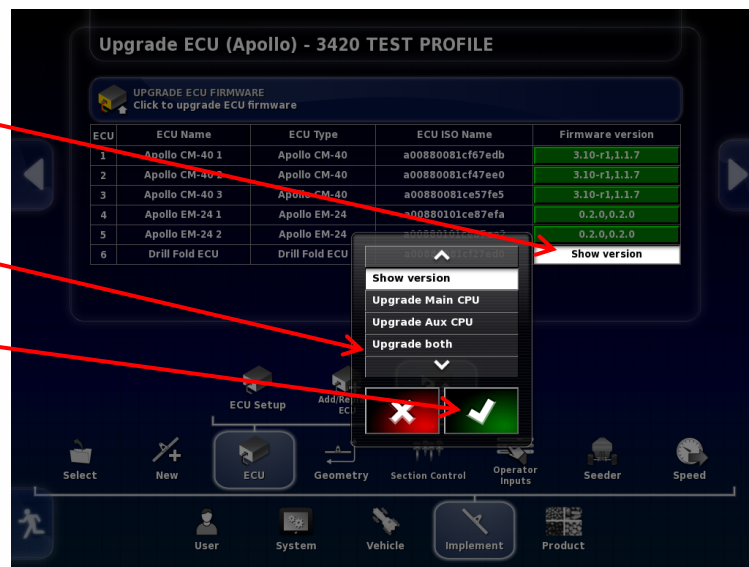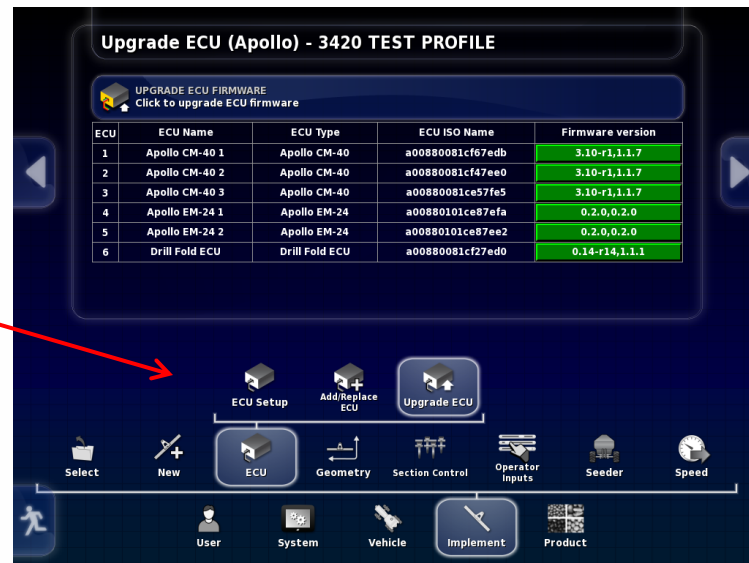be named Apollo EM-24 2)
Upgrade complete

3420 Drill Fold ECU Upgrade
Go to ECU Upgrade tab

Select Firmware version tab for Drill Fold ECU,

select upgrade both,

Select check mark

Touch the Upgrade ECU Firmware tab

Warning screen will appear Make sure no one is near Machine, when safe press the check mark

Upgrade ECU (Apollo) - 3420 TEST PROFILE

UPGRADE ECU FIRMWARE
Click to upgrade ECU firmware

ECU	ECU Name	ECU Type	ECU ISO Name	Firmware version
1	Apollo CM-40 1	Apollo CM-40	a00880081cf67edb	3.10-r1,1.1.7
2	Apollo CM-40 2	Apollo CM-40	a00880081cf47ee0	3.10-r1,1.1.7
3	Apollo CM-40 3		e5	3.10-r1,1.1.7
4	Apollo EM-24 1		fa	0.2.0,0.2.0
5	Apollo EM-24 2		e2	0.2.0,0.2.0
6	Drill Fold ECU		d0	Upgrade both

Operation Requires Restart

WARNING: certain functions may cycle or change state unexpectedly as the console powers down or restarts. Please ensure all people are clear of the machine before continuing.

This change requires the console to be restarted. Click OK to continue, or Cancel to undo the change.

ECU Setup   Add/Replace ECU   Upgrade ECU

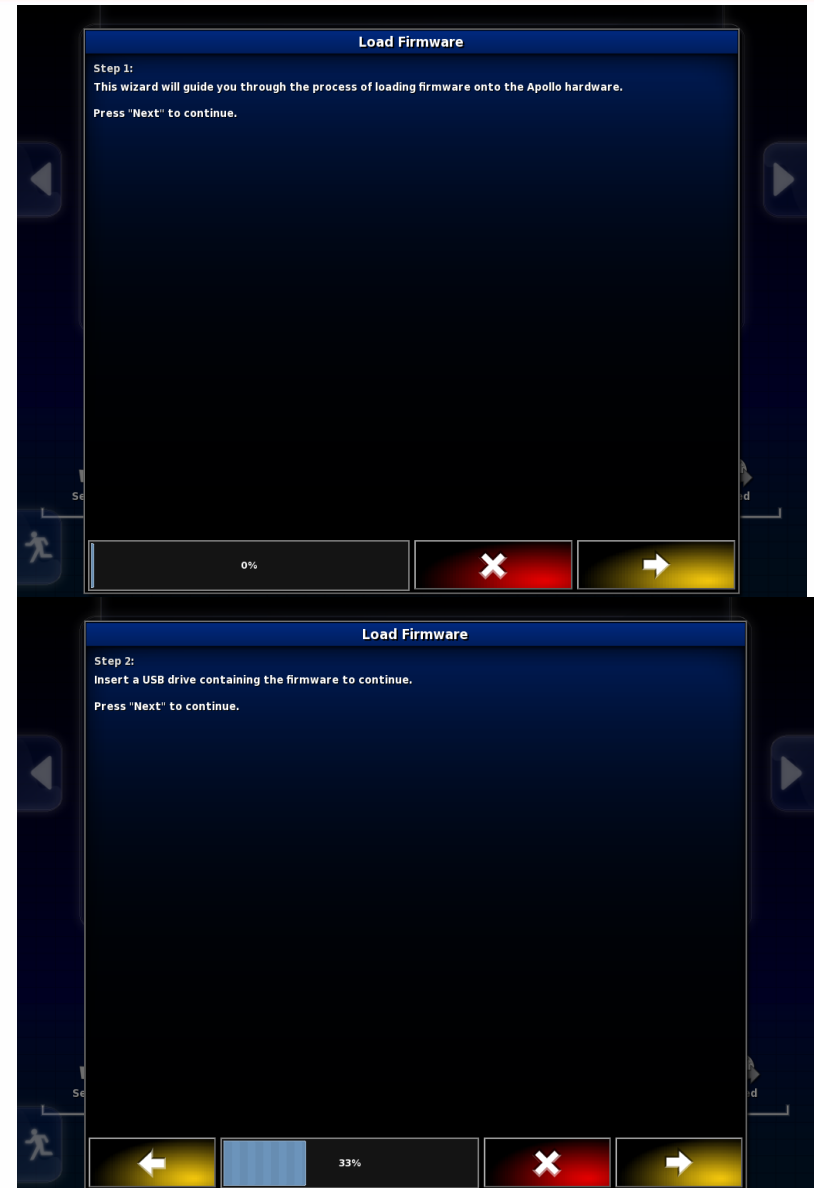Select   New   ECU   Geometry   Section Control   Operator Inputs   Seeder   Speed

User   System   Vehicle   Implement   Product

Wizard will guide you through the Upgrade

Insert USB with firmware into monitor
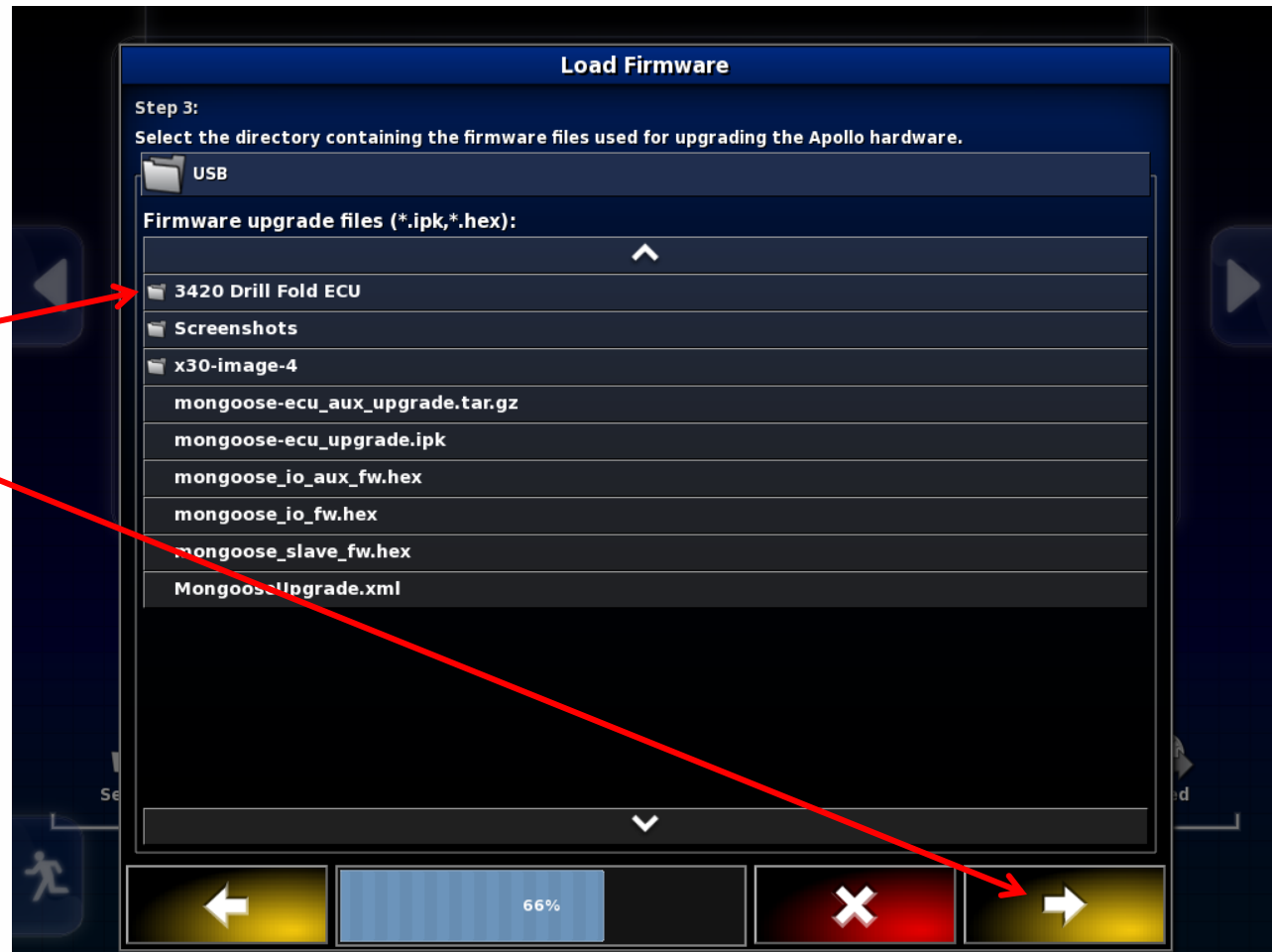
Drill fold firmware is Located in the 3420 Drill Fold ECU folder.

Select this folder

Press the right arrow tab

Load Firmware

Step 3:
Select the directory containing the firmware files used for upgrading the Apollo hardware.

📁 USB

Firmware upgrade files (*.ipk,*.hex):

- 3420 Drill Fold ECU
- Screenshots
- x30-image-4
- mongoose-ecu_aux_upgrade.tar.gz
- mongoose-ecu_upgrade.ipk
- mongoose_io_aux_fw.hex
- mongoose_io_fw.hex
- mongoose_slave_fw.hex
- MongooseUpgrade.xml
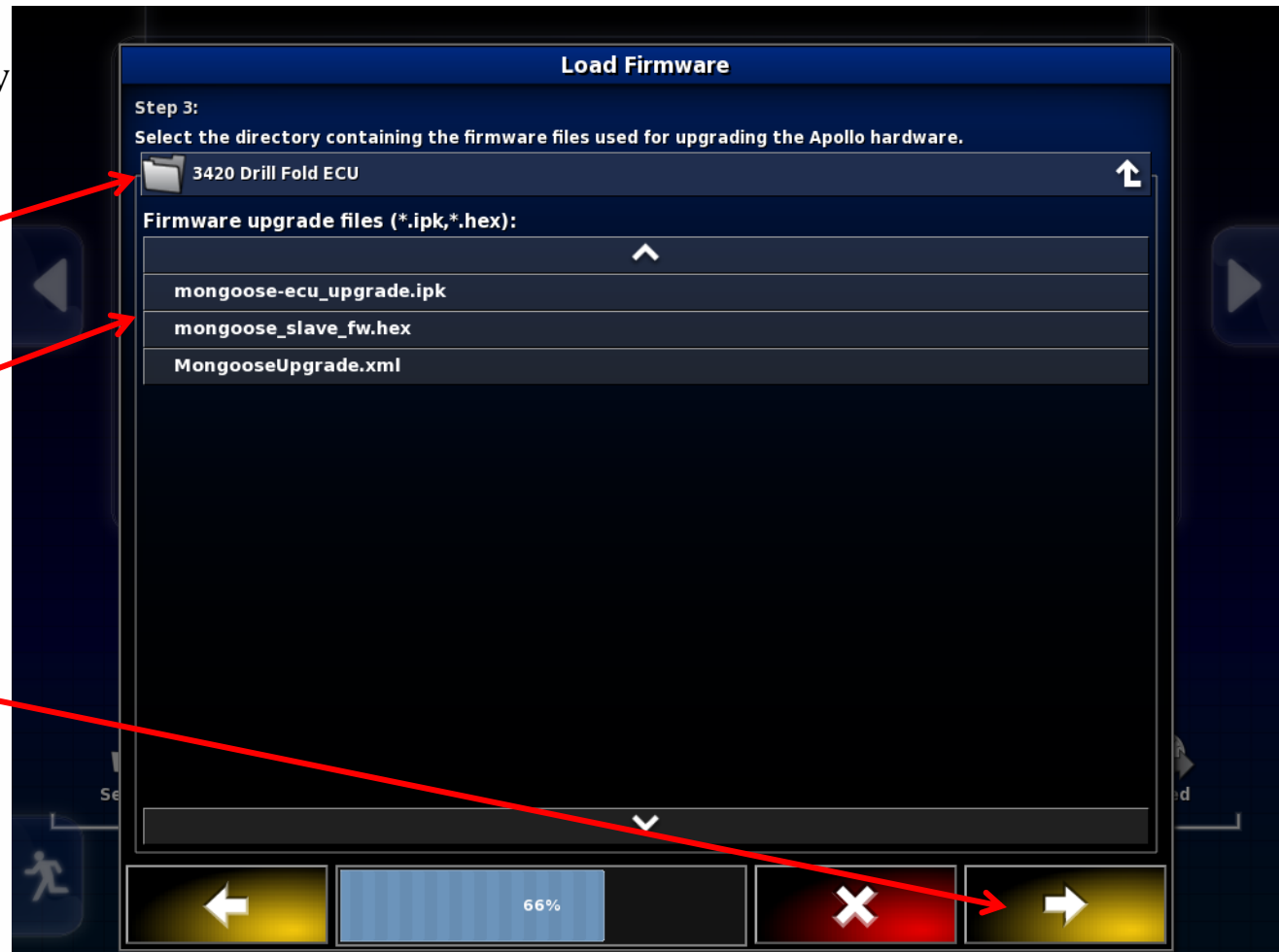
66%

The screen should now Look like this with The 3420 Drill Fold ECU folder open .

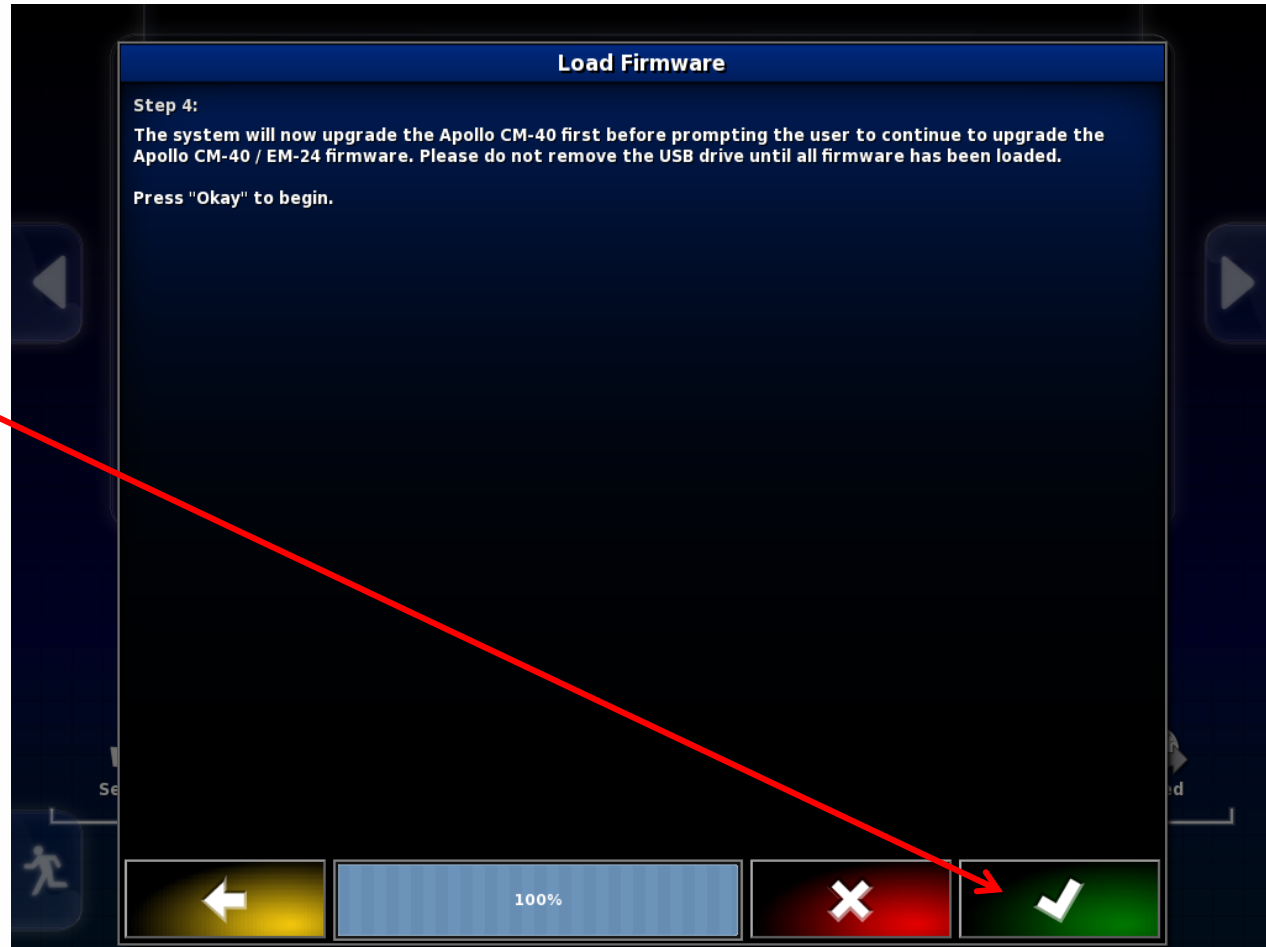There should be three Upgrade files.

Press the right arrow Tab.

Load Firmware

Step 3:

Select the directory containing the firmware files used for upgrading the Apollo hardware.

📁 3420 Drill Fold ECU

Firmware upgrade files (*.ipk,*.hex):

mongoose-ecu_upgrade.ipk

mongoose_slave_fw.hex

MongooseUpgrade.xml

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System is ready to Upgrade
The CM-40 with Drill fold
Software.

Press check mark.

Load Firmware

Step 4:
The system will now upgrade the Apollo CM-40 first before prompting the user to continue to upgrade the Apollo CM-40 / EM-24 firmware. Please do not remove the USB drive until all firmware has been loaded.

Press "Okay" to begin.

100%

Firmware will now be upgraded

Bar turns blue showing progress
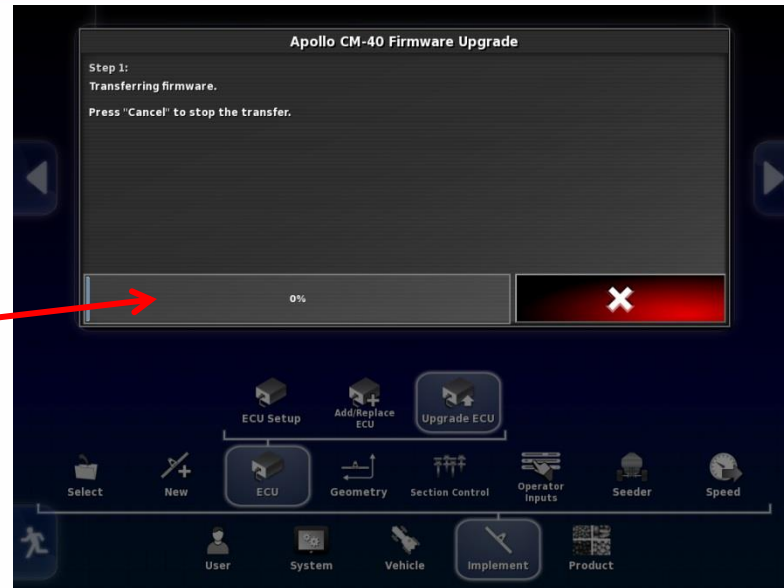
When complete press check mark
To proceed.
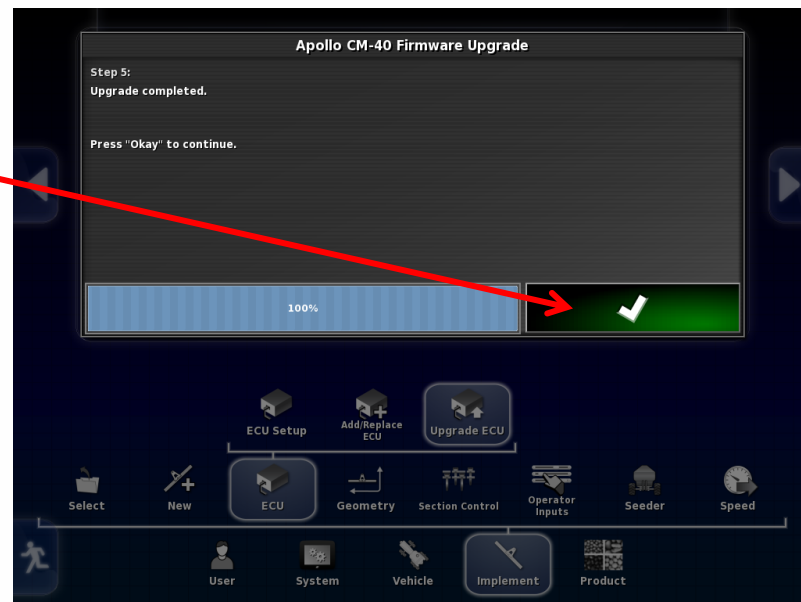
Monitor will restart,
Communication will have
To be re-established with
ECU's

ECU's may need power
supply removed before they
will synchronize.

This can be done by shutting
tractor off or unplugging
ISO plug at rear of tractor

⚠ Warning!
No ECU Communication - Drill Fold ECU

Upgrad...

UPGRA...
Click to upgrade ECU firmware

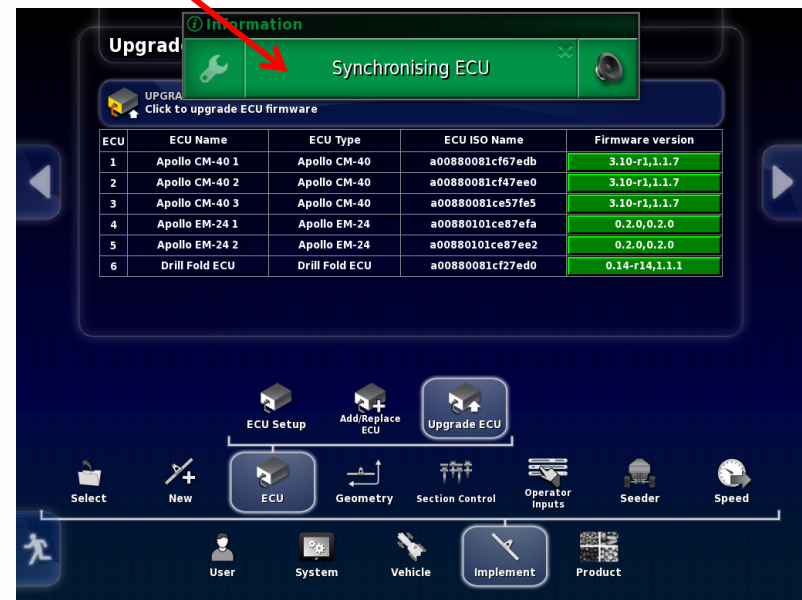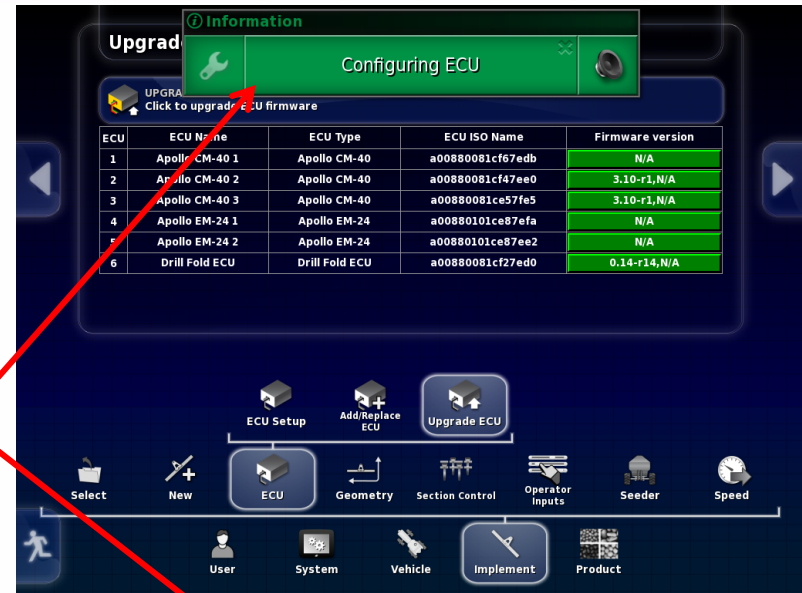| ECU	ECU Name	ECU Type	ECU ISO Name	Firmware version
1	Apollo CM-40 1	Apollo CM-40	a00880081cf67edb	N/A
2	Apollo CM-40 2	Apollo CM-40	a00880081cf47ee0	N/A
3	Apollo CM-40 3	Apollo CM-40	a00880081ce57fe5	N/A
4	Apollo EM-24 1	Apollo EM-24	a00880101ce87efa	N/A
5	Apollo EM-24 2	Apollo EM-24	a00880101ce87ee2	N/A
6	Drill Fold ECU	Drill Fold ECU	----	N/A

ECU Setup   Add/Replace ECU   Upgrade ECU

Select   New   ECU   Geometry   Section Control   Operator Inputs   Seeder   Speed

User   System   Vehicle   Implement   Product

Allow X30 and ECU's to configure and synchronize before doing anything green status bar must not be touched or the upgrade may have to be redone.

Upgrade is complete
You can now touch
Any of the tabs.

Note: a CM-40 is turned
Drill Fold ECU by
changing the firmware,
the Drill Fold ECU can
be changed back to a
CM-40 by putting the
CM-40 firmware back
onto it.

Upgrade ECU (Apollo) - 3420 TEST PROFILE

UPGRADE ECU FIRMWARE
Click to upgrade ECU firmware

ECU	ECU Name	ECU Type	ECU ISO Name	Firmware version
1	Apollo CM-40 1	Apollo CM-40	a00880081cf67edb	3.10-r1,1.1.7
2	Apollo CM-40 2	Apollo CM-40	a00880081cf47ee0	3.10-r1,1.1.7
3	Apollo CM-40 3	Apollo CM-40	a00880081ce57fe5	3.10-r1,1.1.7
4	Apollo EM-24 1	Apollo EM-24	a00880101ce87efa	0.2.0,0.2.0
5	Apollo EM-24 2	Apollo EM-24	a00880101ce87ee2	0.2.0,0.2.0
6	Drill Fold ECU	Drill Fold ECU	a00880081cf27ed0	0.14-r14,1.1.1

ECU Setup   Add/Replace ECU   Upgrade ECU

Select   New   ECU   Geometry   Section Control   Operator Inputs   Seeder   Speed

User   System   Vehicle   Implement   Product

4. Put Thumb drive in X30 USB port to provision it for upgrade. Go to settings page by touching wrench symbol in bottom left of screen. Depending on Software version on X30 there are different locations for Provisioning USB for Upgrade, shown below. Software versions before 3.20.513 are on left 3.20.513 is on the right.
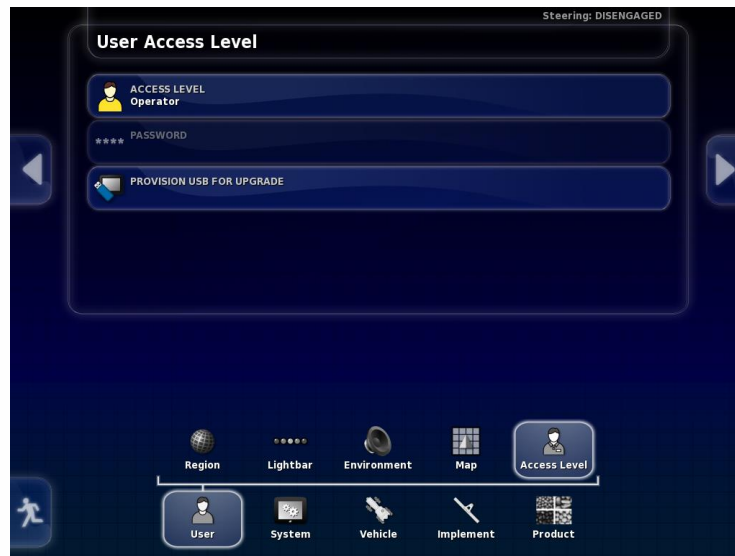
3.16.xxx to 3.18.xxx   3.20.xxx
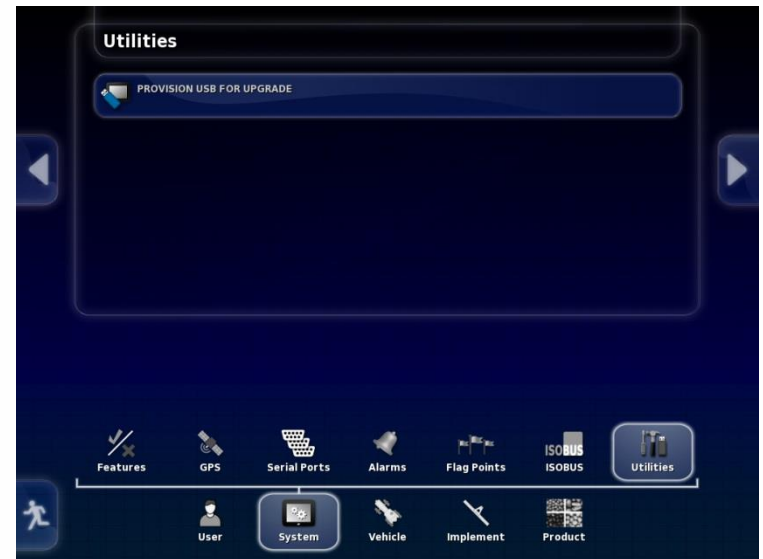
5. Remove thumb drive

6. Turn off X30, plug thumb drive back in to X30

7. Re-start X30

8. Wait for message on screen to remove thumb drive. Remove thumb drive.

9. System will reboot and ask you if you want to do a touchscreen calibration but not necessary. **Select No.**

10. System will ask if you want to retain user settings. **Always select yes.**

11. On main screen, click the Bourgault button in the top left hand corner. Ensure that the software version shown is correct. (3.24.508)

12. Upgrade complete.

13. Check your profile and timings to make sure they are set properly. **If using sectional control, section timing must be set.**

14. When updating Software in monitor the firmware in the ECU(s) must also be updated . Follow the procedure in the previous pages to upgrade firmware.

15. The procedure will be the same software and firmware versions will vary from pictures make sure you know the versions that you are installing.