# INSTRUCTION TO SERVICE

| ITS: 59212 | April 12, 2021 |
|---|---|
| **SECTION:** | 219-Engine |
| **WRITTEN BY:** | Dana Carver |
| **SUBJECT:** | Updating Siemens Software, Vansco and CM0711 Programs |
| **ISSUE:** | Watchdog faults on the inverters cause them to shut down without warning |
| **SUMMARY:** | Vansco, CM0711 and Siemens software update |

# ITS59212

| Ref. NHTSA Recall No. | Ref. Transport Canada Recall No. |
|---|---|
| 21V-244 | 2021-206 |

**THIS ITS DOCUMENT SHOULD BE RETAINED AND REFERRED TO FOR FUTURE MAINTENANCE UNTIL THE NEW FLYER PARTS AND/OR SERVICE MANUAL IS UPDATED TO REFLECT WORK DONE AS A RESULT OF THIS DOCUMENT. ENSURE THAT THIS DOCUMENT IS AVAILABLE FOR PARTS AND MAINTENANCE STAFF GOING FORWARD.**

**NEW FLYER**

*This is to inform you that your vehicle may contain a defect that could affect the safety of a person.*

## PROCEDURE:

**The following are instructions to update the Vansco, CM0711 and Siemens programs on a bus. The programs have been sent to the New Flyer RPSM and must be updated in the order of Vansco, CM0711 and then Siemens.**

**Vansco Update:**

1. Ensure the Master Run Switch is in Day/Run position and hazard must be on.



2. Ensure laptop battery is fully charged or plugged into a power source.
3. Connect a laptop with VMM software to the under-dash USB A connector located below the right side of the dash, above the pedals.
4. Open the PLC program in the VMM software.
5. Select Tools and Query VMMs.
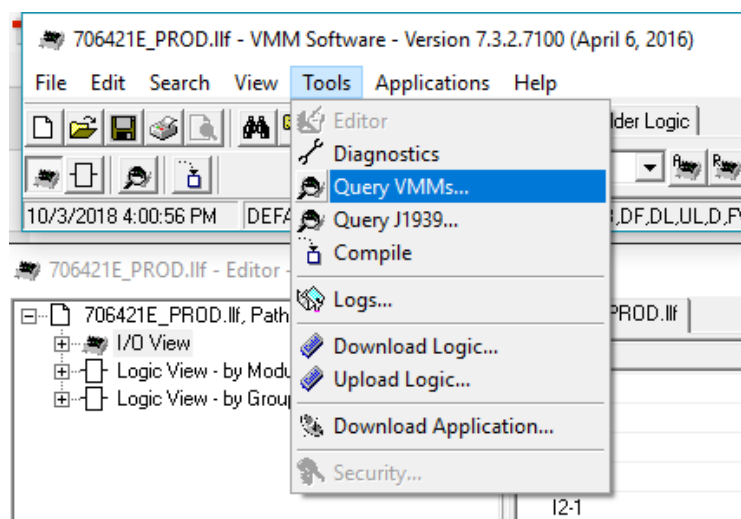


6. Ensure you are communicating with all the nodes in the query screen prior to downloading.

7.  Select Download Logic.

8.  Ensure the correct file name and revision appear in the File window.
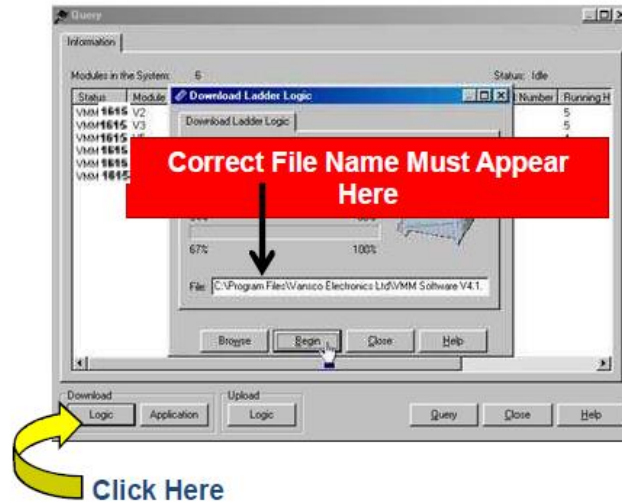


9.  The software will verify the correct number of VMMs are found. Do not download program if all VMMs are not located. If the correct number of VMMs were found, select Yes.
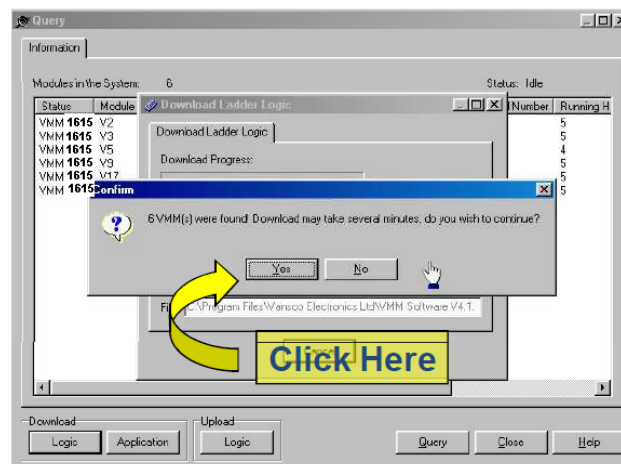


10. After the download is complete, close the download window.

11. Disconnect the USB A cable.

**CM0711 Update:**

12. Ensure VMM 7100 or later is installed because it should have Flash Loader v1.9 or newer on it.

    a. To open flash loader open the VMM software and click Applications → click FlashLoader. See figure 1.

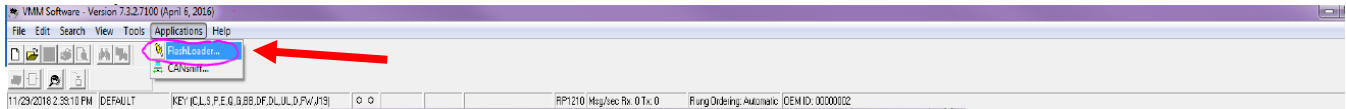    b. To check the version is v1.9 or later, click Help → click About. See figure 2.



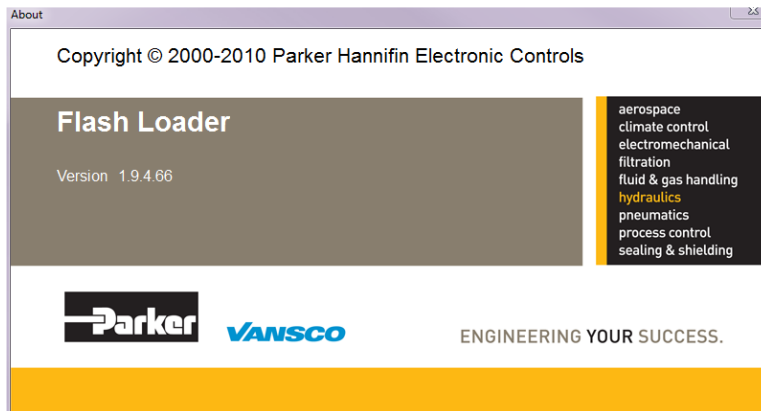**Figure 1: FlashLoader location**



**Figure 2: Flashloader version**

13. Make sure the bus is <u>NOT</u> in EV MODE. Turn the bus to Day Run or Night Run with EV MODE OFF.

14. Turn hazard lights on, to assure the bus is awake while programming the CM0711.

15. Connect a NEXIQ USB LINK to the 9-pin Vehicle Diagnostic Port behind the driver and USB cable to laptop.


☞ **NOTE:** **Make sure the NEXIQ USB LINK is a wired connection (<u>NOT </u>Bluetooth).**


16. With the NEXIQ connected, in FlashLoader go to File → RP1210 Settings and make sure NEXIQ USB LINK J1939 Channel 1 is selected. Check this if you are having trouble getting connected.

17. You will see several question marks and other devices on the left-hand side, find source address 0x49, this is the CM0711 (see figure 3).

    a. The version shows what is currently loaded in the CM0711. Take a screenshot of what is currently loaded.

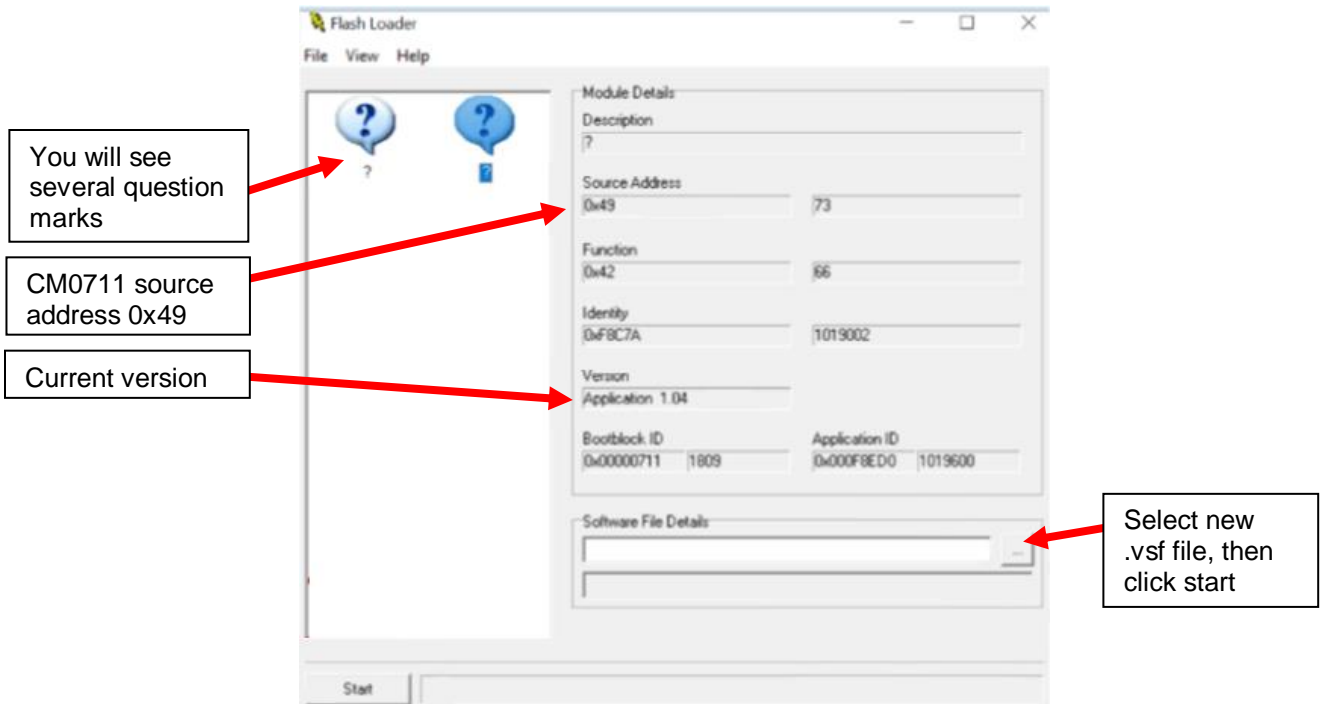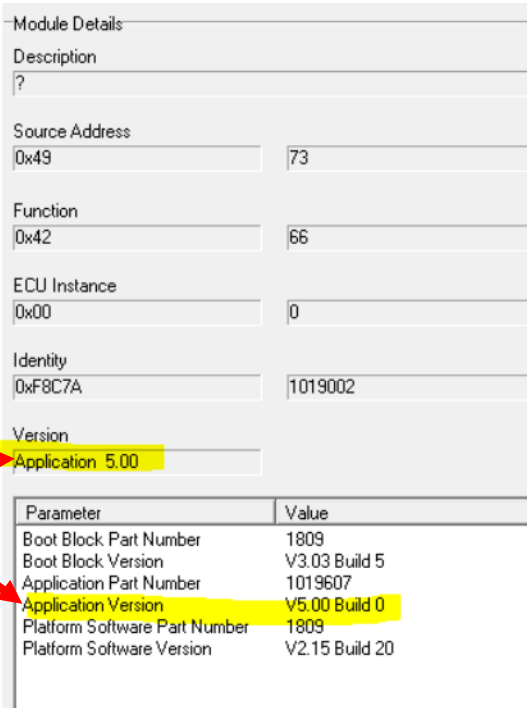    b. Select the new .vsf file you received and click start (It will take 1-2 minutes to download the program).

You will see several question marks

CM0711 source address 0x49

Current version

Select new .vsf file, then click start

**Figure 3: CM0711 source address and current version**

18. After downloading finishes, follow the same process in step 5 and find source address 0x49. The Version # should now be updated to the program you just loaded. The following example in figure 4 is for loading 1019607_NFIL_Electric_Bus_V5.00.vsf. It is also important to notice that it is V5.00 Build 0.



**Figure 4: CM0711 source address and updated version**

19. Turn the master-run switch OFF for at least 20 seconds. It takes at least 7 seconds for the CM0711 to power off after turning off the master-run switch, but 20 seconds is recommended to be safe.

20. Put the bus back into Day Run (not EV mode).

21. Open the rear panel and make sure the light on the CM0711 is flashing green and then orange. This indicates the CM0711 is operating.

☞ **NOTE:** **If the CM0711 light is off or steady red, it is bricked and will need to be sent back to NPD. Unfortunately, the bus will be undrivable without a function CM0711 so please contact NPD as soon as possible.**



**Figure 5: Rear panel and CM0711 module location**

22. Make sure the bus can enter EV mode by cycling EV mode "ON" then "OFF".

23. Download updated PLC program to Vansco.

24. Remove all tools and debris and return the bus to service condition.

**Please refer to Appendix A for Instructions to Update the Siemens Software**

**Important Note 1:** Force the HVIL flag inactive to ensure that the PLC program does not shut off communication prior to searching all nodes (step 1.7 in Appendix A).

**Important Note 2:** The delay time can be changed to allow the technician more time between key-on and searching for nodes. 15 seconds has been used with success.

**Important Note 3:** The DICO, motor inverter(s), auxiliary inverters and parameters need to be updated.

## Appendix A

# 1 Instructions

1.1 Use the Siemens Diag in the Rear Panel (see diagram below) to connect the computer containing the software to the system.
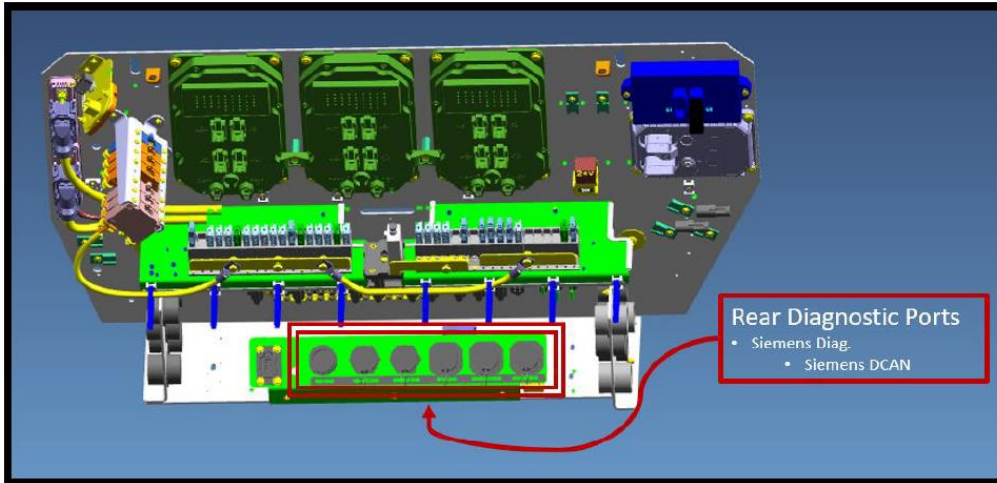


**Image 1. CAD image showing location of Siemens diagnostic ports**

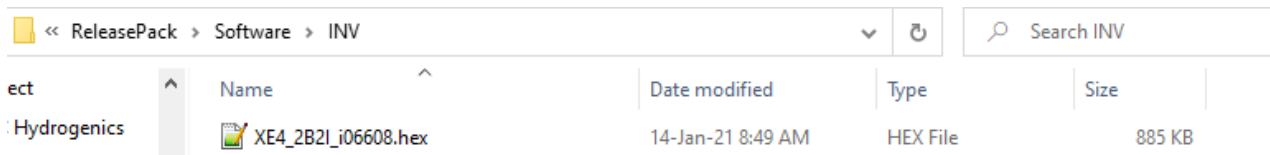1.2 From the computer, navigate to folder where SW package is located



**Image 2. Screenshot showing the contents of the folder with a .hex file (.hex file for XE40 shown in example)**

1.3 Start the ELFA WinFlash tool via double click

1.4 From the tool choose **Select** in *Hex-File menu*
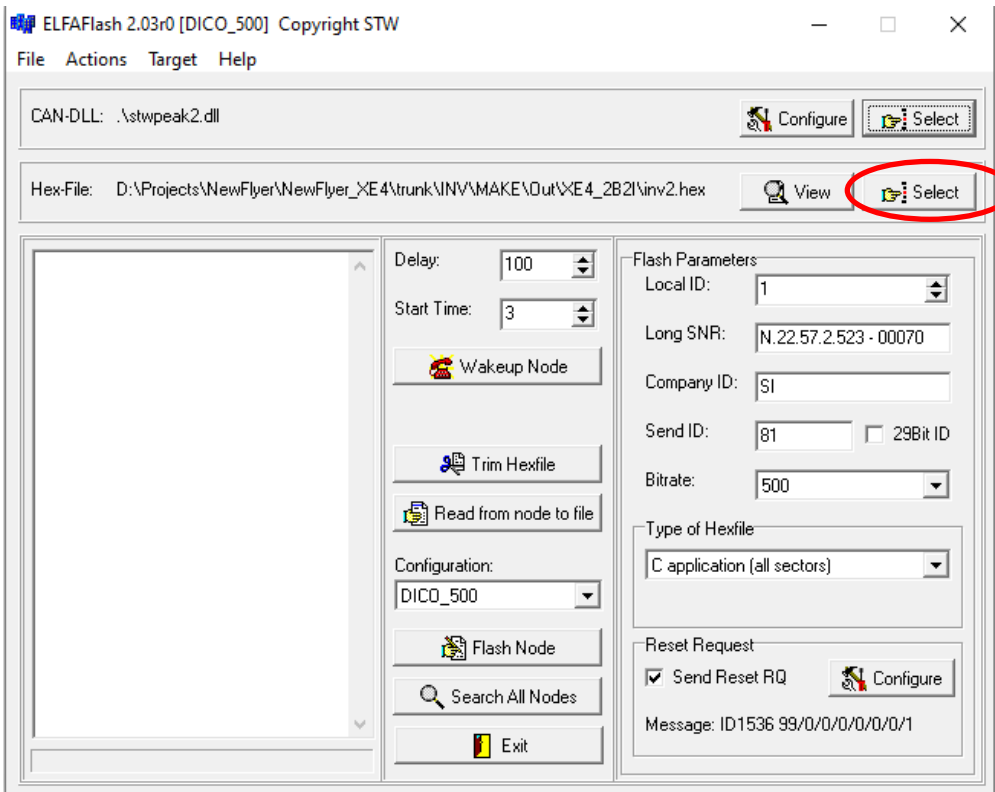


**Image 3. Image showing ELFA flash tool window**

1.5 Navigate to the folder where SW package is located *ReleasePack→Software→INV*.
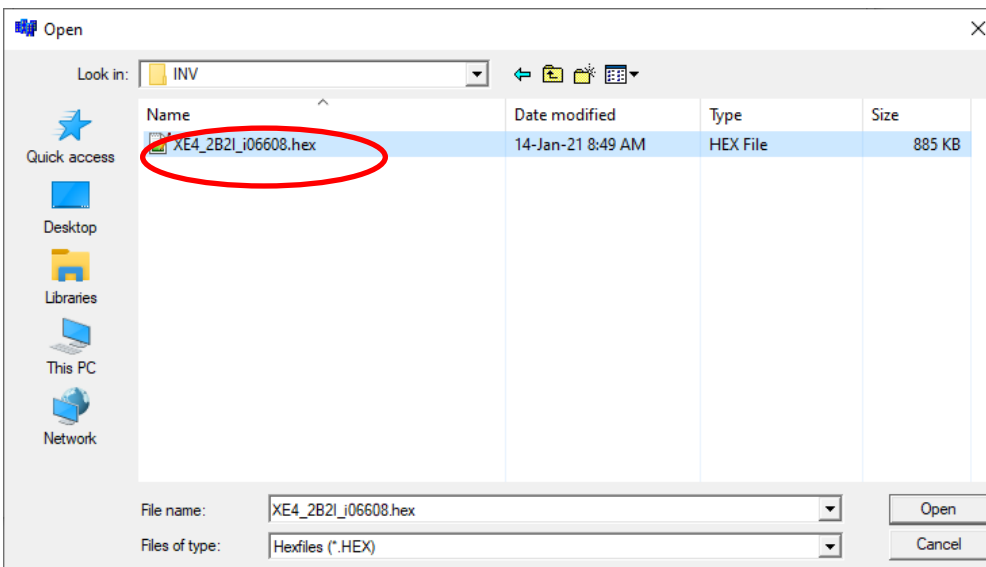
Click the .hex file to open



**Image 4. Image showing .hex file for an XE40 configuration**

Flash Tool Configuration
Software Flashing

1.6    Switch OFF Key Start (KL15) for all components and wait approximantely 30 seconds

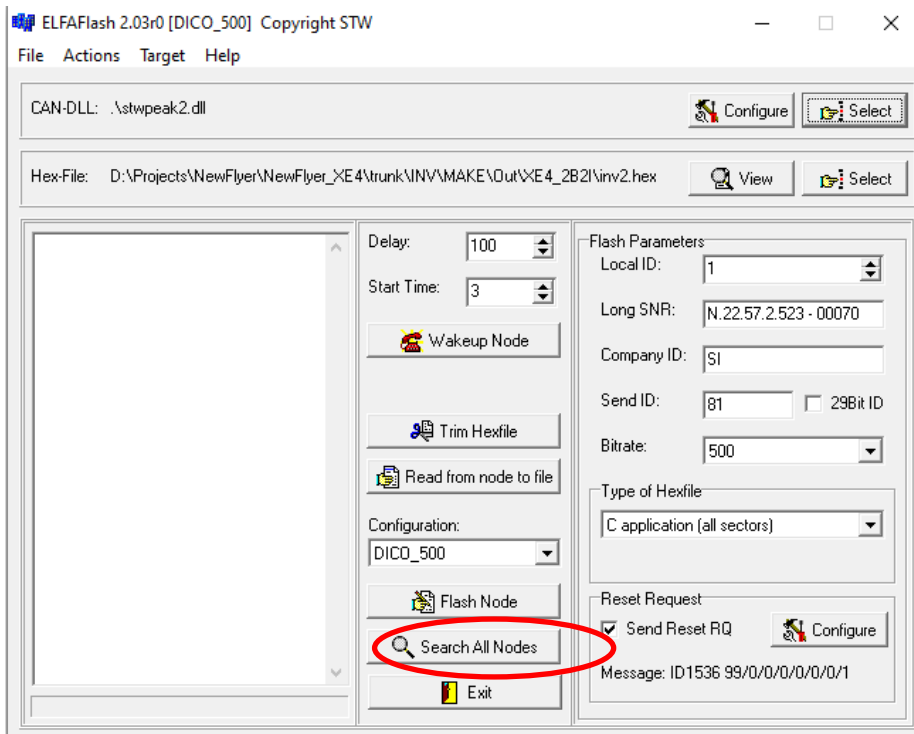1.7    Select **Search All Nodes** and switch ON Key Start (KL.15)



**Image 5.  Image showing "Search All Node" selection on Flash tool window**

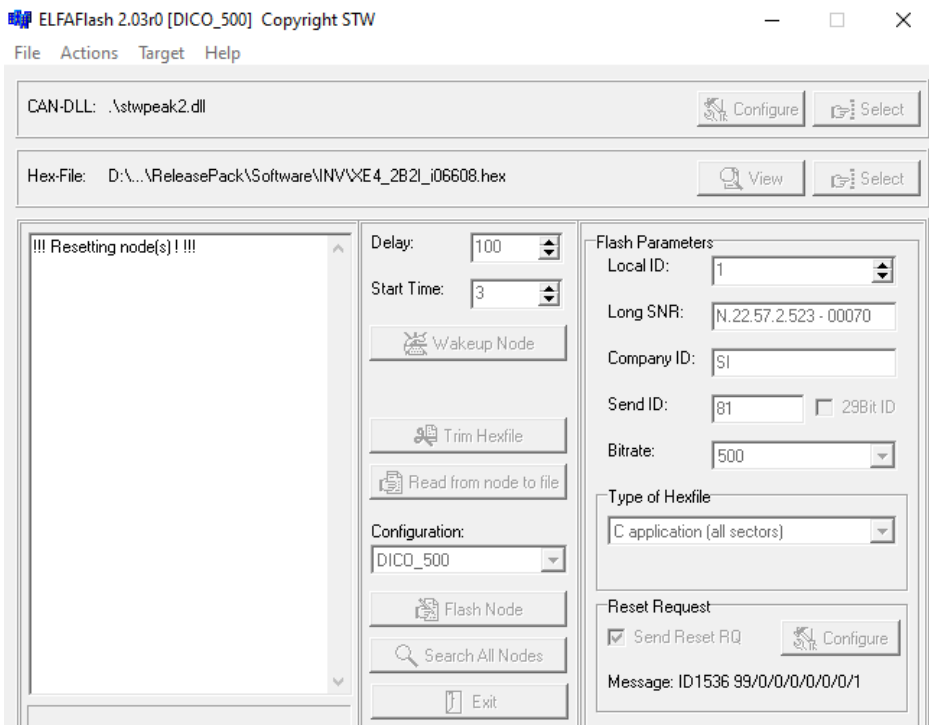The process of Resetting node(s) will appear like the image below



**Image 6. Image showing Resetting node(s) message on Flash tool.**

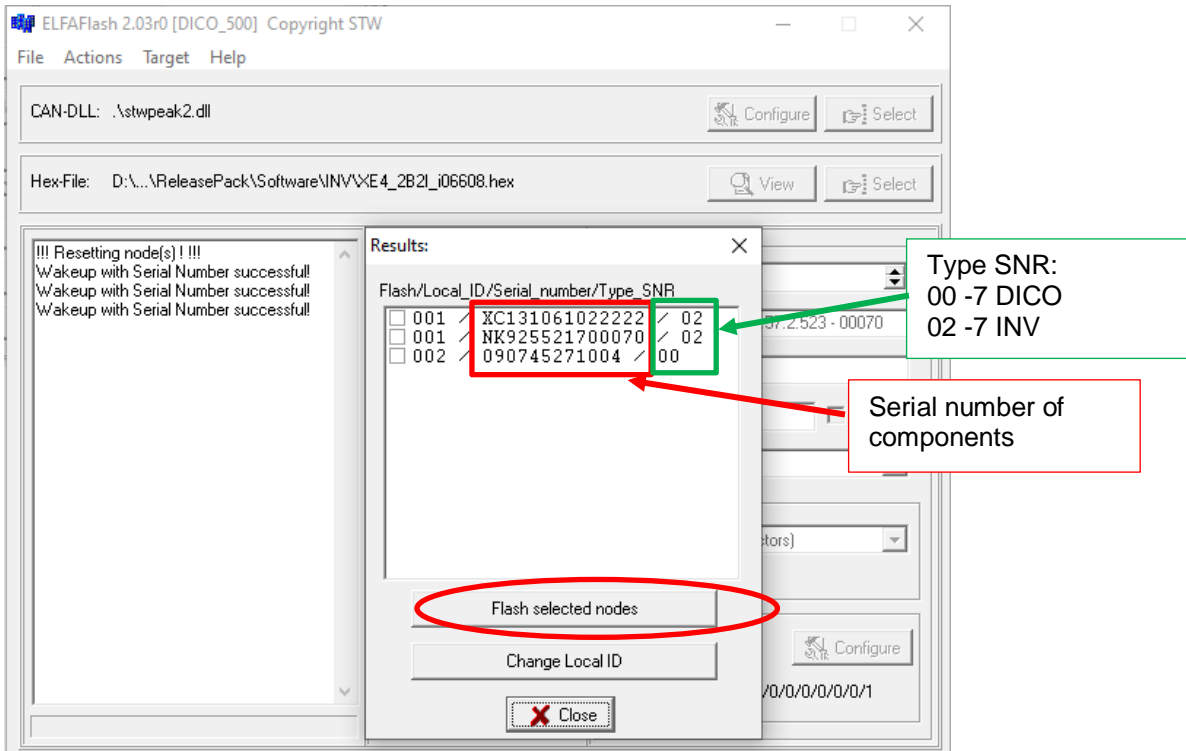After successful wakeup, choose the correct Inverter serial number and then click **Flash selected nodes**.



**Image 7.  Image showing example of a system containing two Inverters and one DICO**

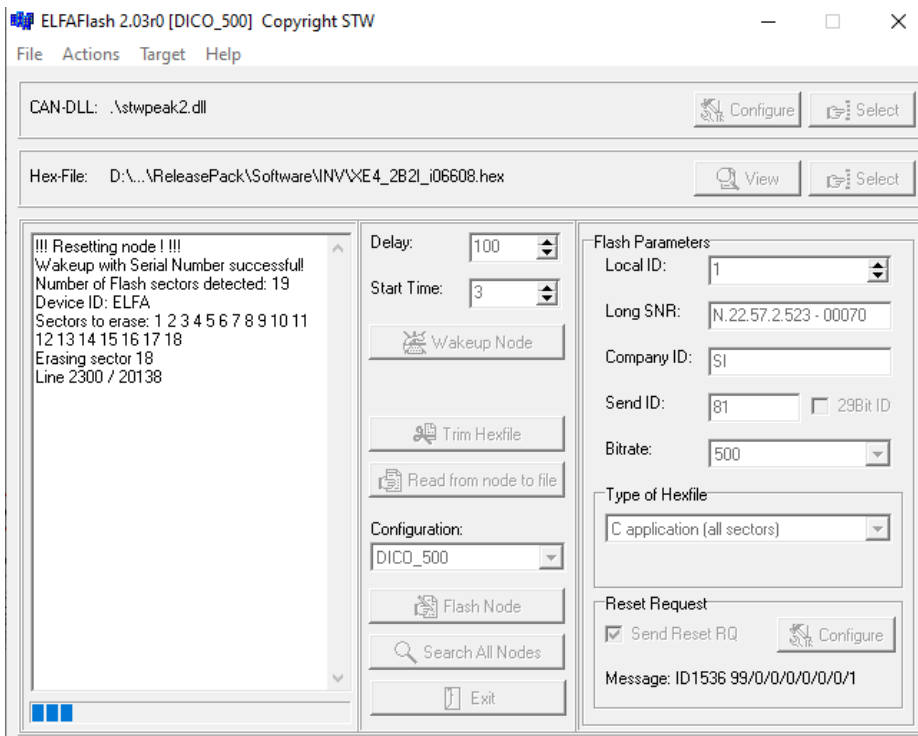Process of SW flashing is shown below



**Image 8. Image showing software flashing in progress**

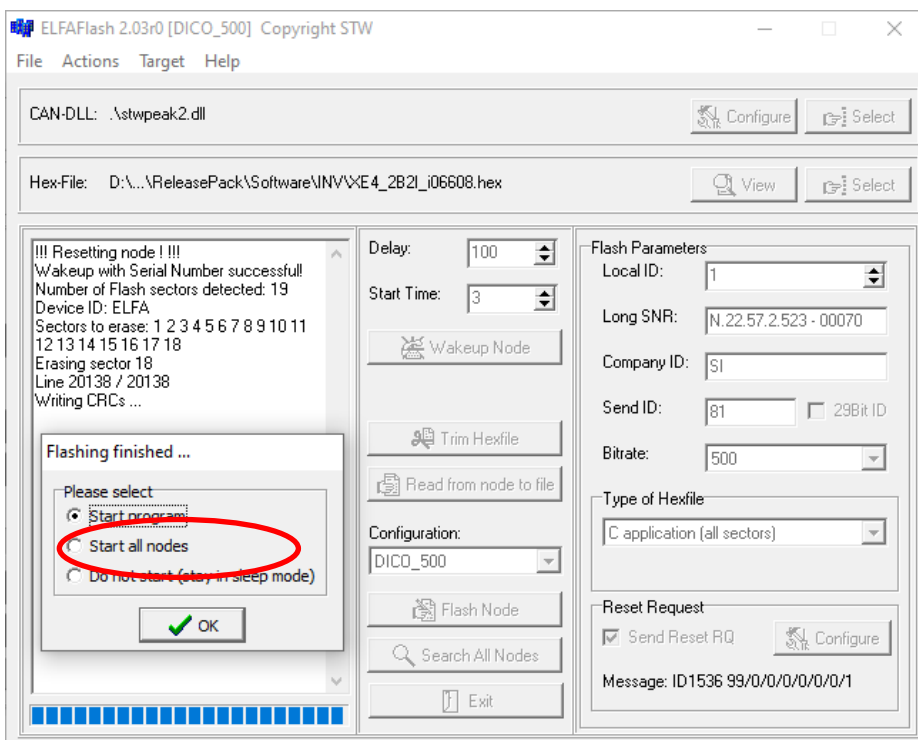1.8     Once the SW flashing process finished, choose **Start program** and click **OK**.



**Image 9.  Image showing menu that window that appears when flashing is finished**

The Inverter with the serial number which has been flashed will show up like the picture below. Close ELFA flash tool.
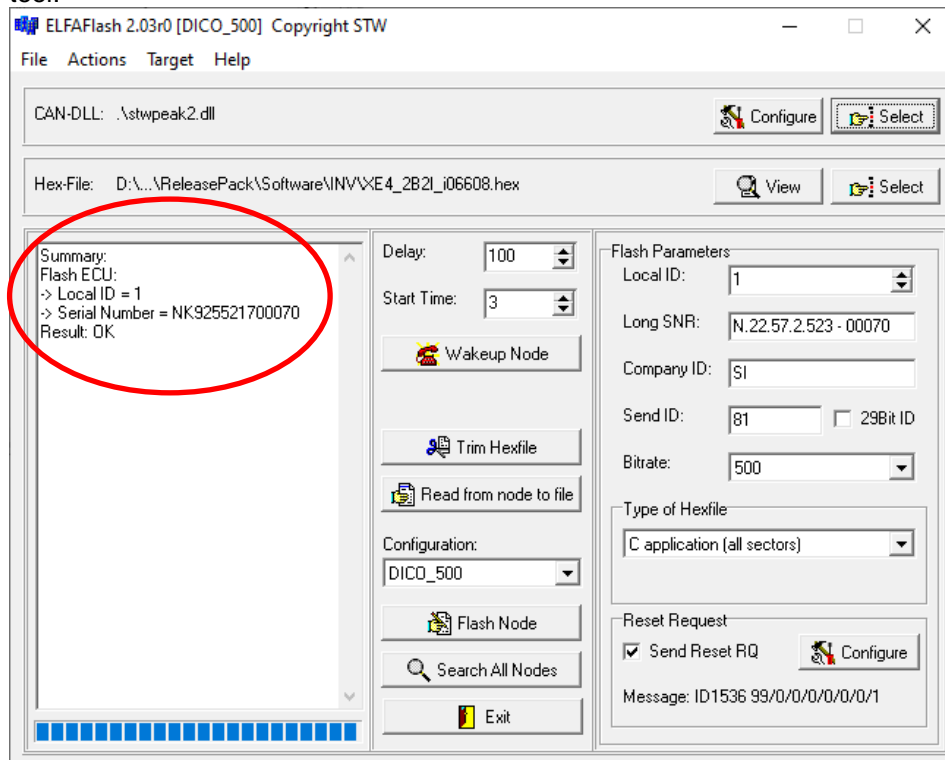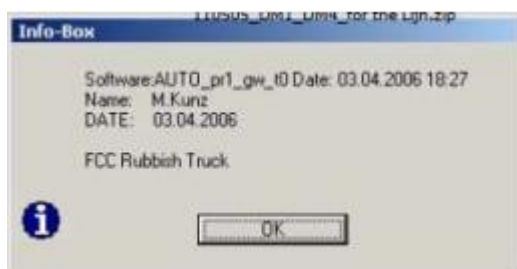


**Image 10.  Image showing ELFA flash tool window with serial number of the inverter that has been flashed**

# 2  Validation

Perform a final check for the software version.  Refer to Appendix A1 to confirm the software release package for your bus configuration.

# 3 Error Buffer Check

Once the final check for the software has been installed per the instructions, the user should perform a drive test and export the error buffers to confirm proper functionality of the trap 10 software update. **This step only needs to be completed once per bus configuration** (e.g. XE40, XE60, etc.). Once the software release package is confirmed for a specific bus configuration, this test will not need to be repeated for every vehicle within that configuration.

1. Key off (restart) the vehicle

2. Test drive the vehicle for 20-30 minutes

3. Pull off to a safe area, stop the vehicle, and turn off bus

4. Connect to the vehicle via PCAN-USB tool (see image below for location of diagnostic port). Open Siadis Expert
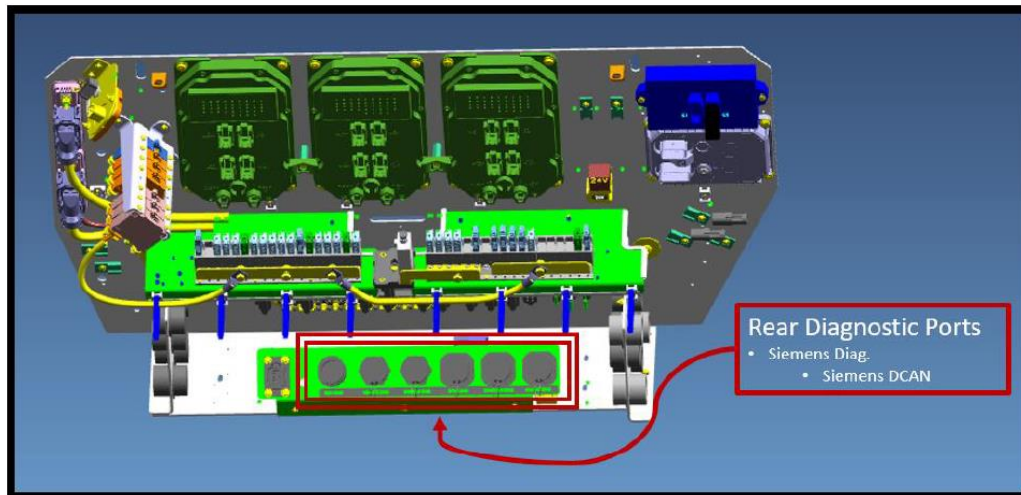


**Image 11. CAD image showing location of Siemens diagnostic ports**

5. Start SIADIS

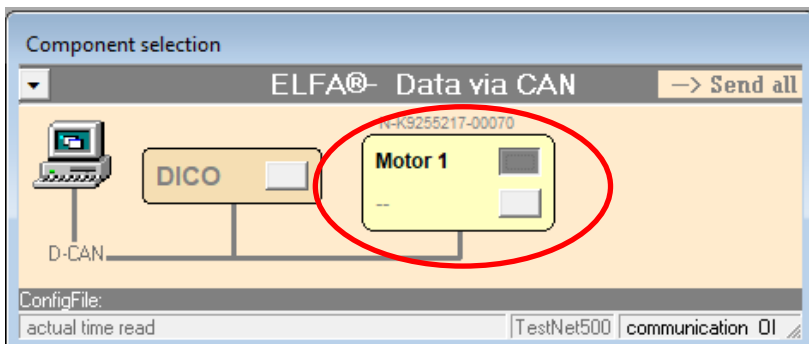6. Within Component Selection, choose Motor 1



**Image 12. Image of SIADIS tool window showing components**
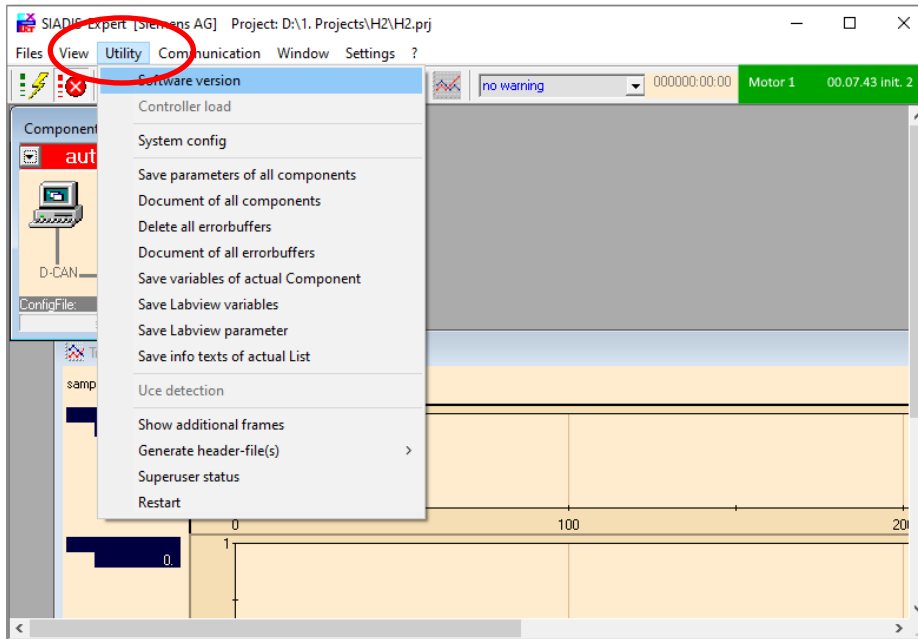
7. Navigate to Utility menu → Software version



**Image 13. Image showing SIADIS tool Utility menu**

Confirm that the appropiate SW version shows (See Appendix A1)
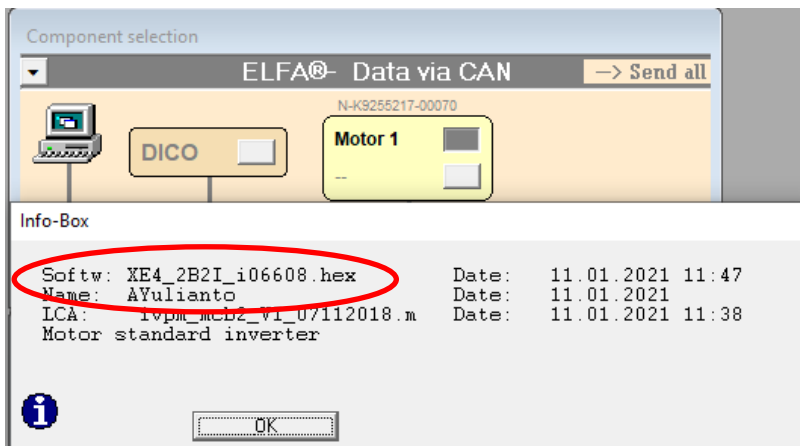


**Image 14. Image showing software version info window (example shown is for an XE40)**

8. To access the error buffer select click Utility → "document of error buffers"
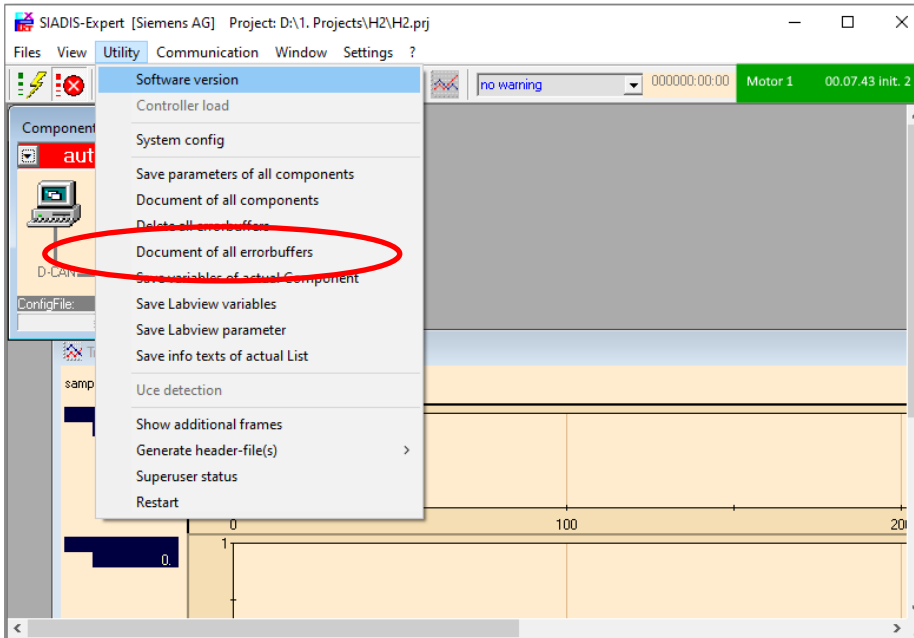


**Image 15. Image showing to access error buffer in SIADIS tool.**

9. Once the error buffers are visible, review them and verify that there are no trap 10 errors

10. If there are no trap 10 errors, mark the vehicle as completed, save the error buffer, and register it as complete in the attached and return a copy to Siemens.

11. If there are trap 10 error in the error buffer, verify that the correct software has been flashed (refer to section 6 & 7) according to Appendix A1

| | Operation | Number of Technician(s) | Hours | Labor Time T X HR |
|---|---|---|---|---|
| **LABOUR ESTIMATE** | | | | |
| 1 | Update the Vansco, CM0711 and Siemens software | 1 | 2 | 2 |