# TECHNICAL SERVICE BULLETIN

| Classification: | Reference: | Date: |
|---|---|---|
| EL23-016A | NTB23-075A | April 23, 2024 |

# HV BATTERY DTCS STORED IN THE BMS

**This bulletin has been amended. See AMENDMENT HISTORY on the last page.**
**Please discard previous versions of this bulletin.**

**APPLIED VEHICLES:** 2023 ARIYA (FE0)
**APPLIED DATES:** Built on or before January 20, 2023

## IF YOU CONFIRM

One or more of the following DTCs are stored in the **HV BATTERY** or **High Voltage Battery 2** in the BMS (Battery Management System):

- DTC P1B01-62 for “Cell voltage circuit” is stored as PAST and does **not** return as CURRENT when erased,

  **OR**

- DTCs P1B30-11, P1B39-11, P1B3A-11, P1B3B-11, P1B31-11 to P1B36-11; all for “Module temperature sensor”,

  **AND/OR**

- DTCs P1B60-12, P1B69-12, P1B6A-12, P1B6B-12, P1B61-12 to P1B68-12; all for “Cell voltage circuit”.

## ACTION

Follow the **SERVICE PROCEDURE** in this bulletin to reprogram the **HV BATTERY and HIGH VOLTAGE BATTERY 2**.

**IMPORTANT:** The purpose of **ACTION** (above) is to give you a quick idea of the work you will be performing. You MUST closely follow the entire **SERVICE PROCEDURE** as it contains information that is essential to successfully completing this repair.

## Reprogram the HV BATTERY and HIGH VOLTAGE BATTERY 2

**IMPORTANT:** Before starting, make sure:

- ASIST on the CONSULT PC has been synchronized (updated) to the current date.
- All CONSULT-4 software updates (if any) have been installed.
- Connect the CONSULT PC to the Internet via Wi-Fi.

  **HINT:** If Wi-Fi connection is not sufficient or is unstable, data may not download correctly during the reprogramming procedure.

**NOTICE**

- Connect a battery maintainer or smart charger set to reflash mode or a similar setting. If the vehicle battery voltage drops below 12.0V or rises above 13.5V during reprogramming, the BMS may be damaged.
- Be sure to turn OFF all vehicle electrical loads (e.g. A/C, headlamps, audio). If a vehicle electrical load remains ON, the BMS may be damaged.
- Be sure to connect the AC Adapter. If the CONSULT PC battery voltage drops during reprogramming, the process will be interrupted and the BMS may be damaged.
- Turn OFF all external Bluetooth® devices (e.g., cell phones, printers, etc.) within range of the CONSULT PC and the VI. If Bluetooth® signal waves are within range of the CONSULT PC or VI during reprogramming, reprogramming may be interrupted and the BMS may be damaged.
- During the reprogramming process, you will receive some errors. These errors are expected. Please follow all of the steps in this procedure to successfully complete the reprogramming process.

1. Make sure the vehicle is OFF.

2. Turn the vehicle IGN ON.

3. Confirm there is a blinking green light on the dash.

4. Hold the vehicle's start button down for 10 seconds.
   - This will temporarily disable the high voltage (HV) system.

5. Confirm that the green light has stopped blinking and is now OFF.

6. Turn the vehicle IGN ON (start button to ON).

7. Connect the VI3 to the vehicle.

8. Turn the hazard lamps to ON.

9. Start CONSULT-4 on the CONSULT PC.

10. If prompted, select **USA/CANADA Dealers** from the drop-down menu, and then select **OK**.

11. Login using your NNAnet credentials.

    **IMPORTANT:** If not prompted to enter your username and password, the CONSULT PC may not be connected to Wi-Fi. Close CONSULT-4, confirm the CONSULT PC is connected to Wi-Fi, and then reopen CONSULT-4.

12. Wait for the VI3 to be recognized.

    - Green VI3 symbol with check mark in the middle (Figure 1).

13. Ensure that the vehicle's 12 volt battery voltage stays between 12-13.5V (Figure 1).

14. Check to see if there are currently any DTCs.

    - DTCs not listed on page 1 are not covered by this bulletin. For unlisted DTCs, see the ESM for further diagnostic information.

      **HINT:** Having a battery charger ON, with the vehicle ON, may trigger a warning or DTCs which can be ignored (example P0560-22).

15. Select **Vehicle reprogramming**.

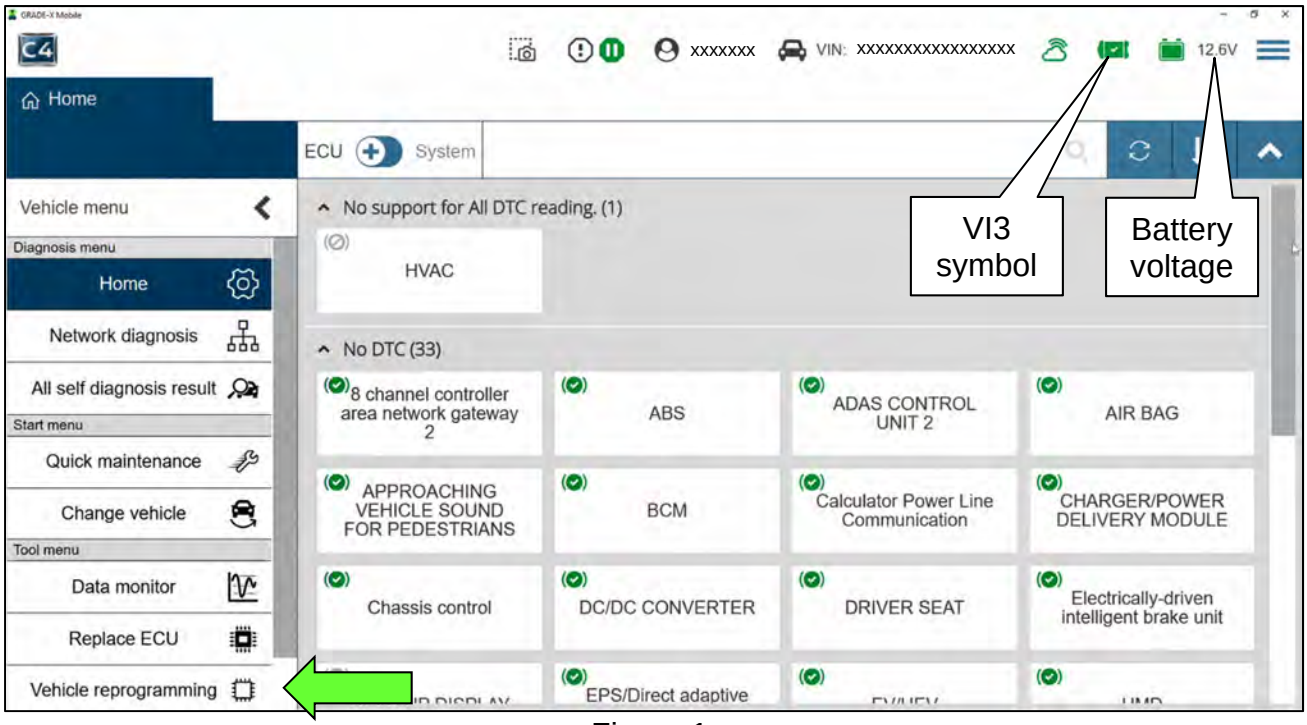


Figure 1

16. Scroll down until you see **HV BATTERY** listed (Figure 2).

17. Select the green arrow to the right of **HV BATTERY**, where shown in Figure 2.

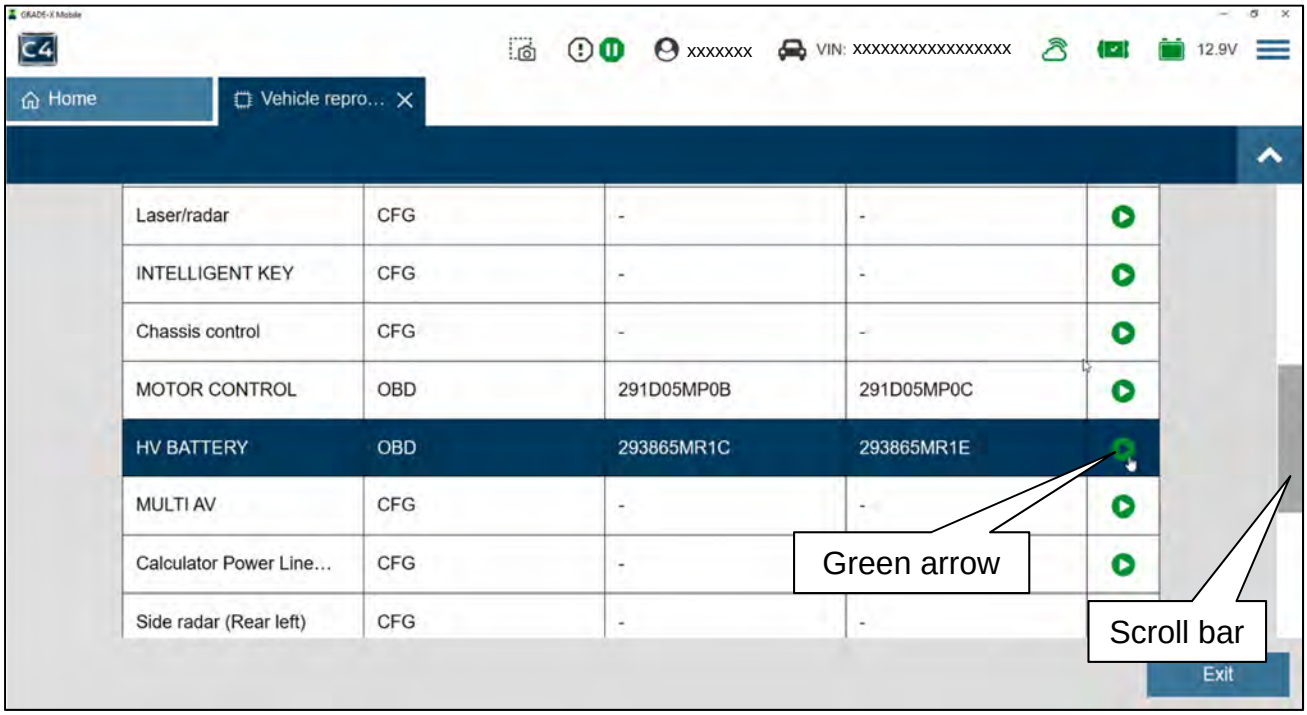


Figure 2

18. Select the **X** in the bottom right corner.

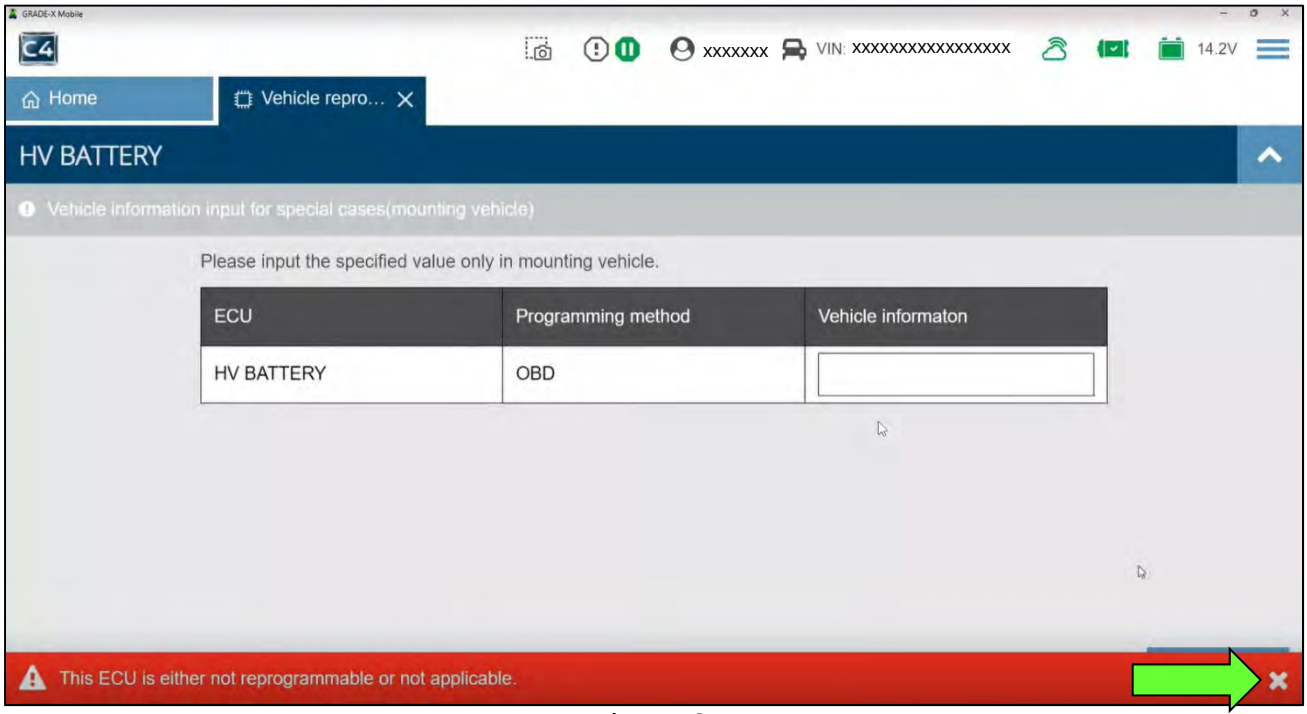


Figure 3

19. Select **Next**.

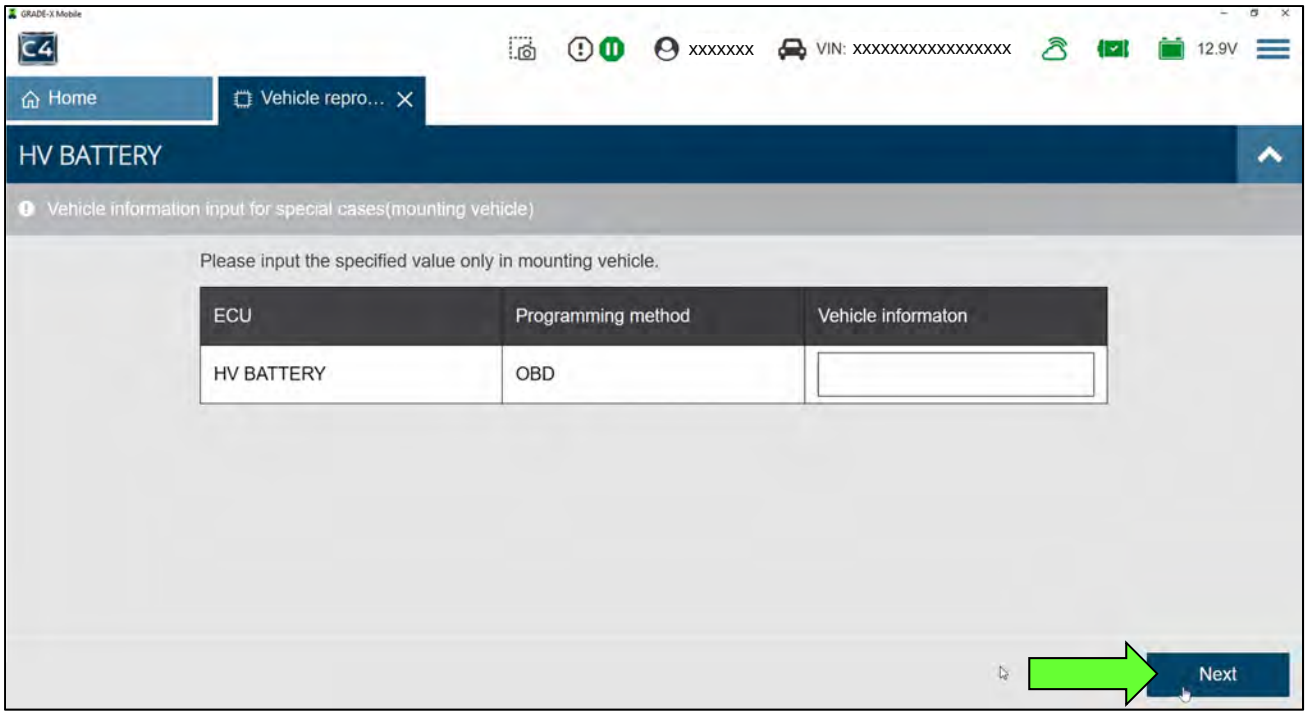


Figure 4

20. Select **Next** again.

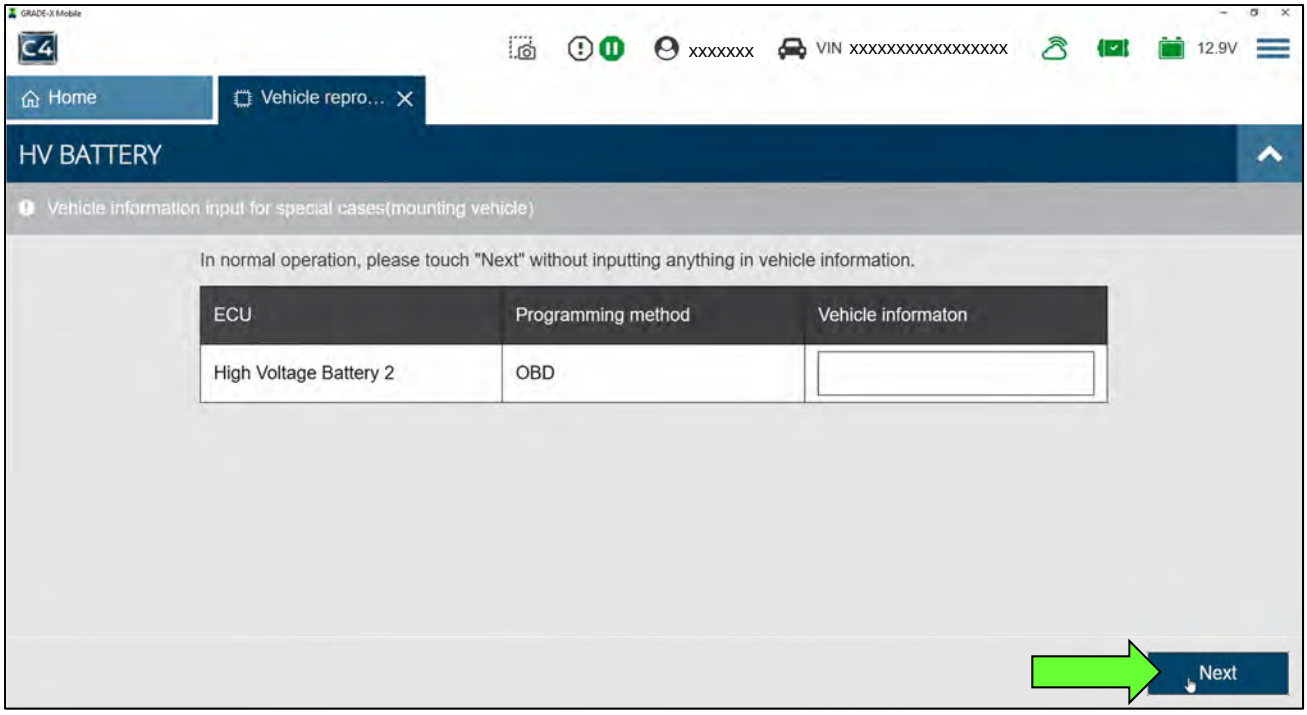


Figure 5

21. Verify the vehicle **VIN** is correct, and then select **Next**.

**IMPORTANT:** If both "HV BATTERY" and "High Voltage Battery 2" are not displayed, an unstable Wi-Fi connection may be present (refer to **IMPORTANT** statement on page 2).

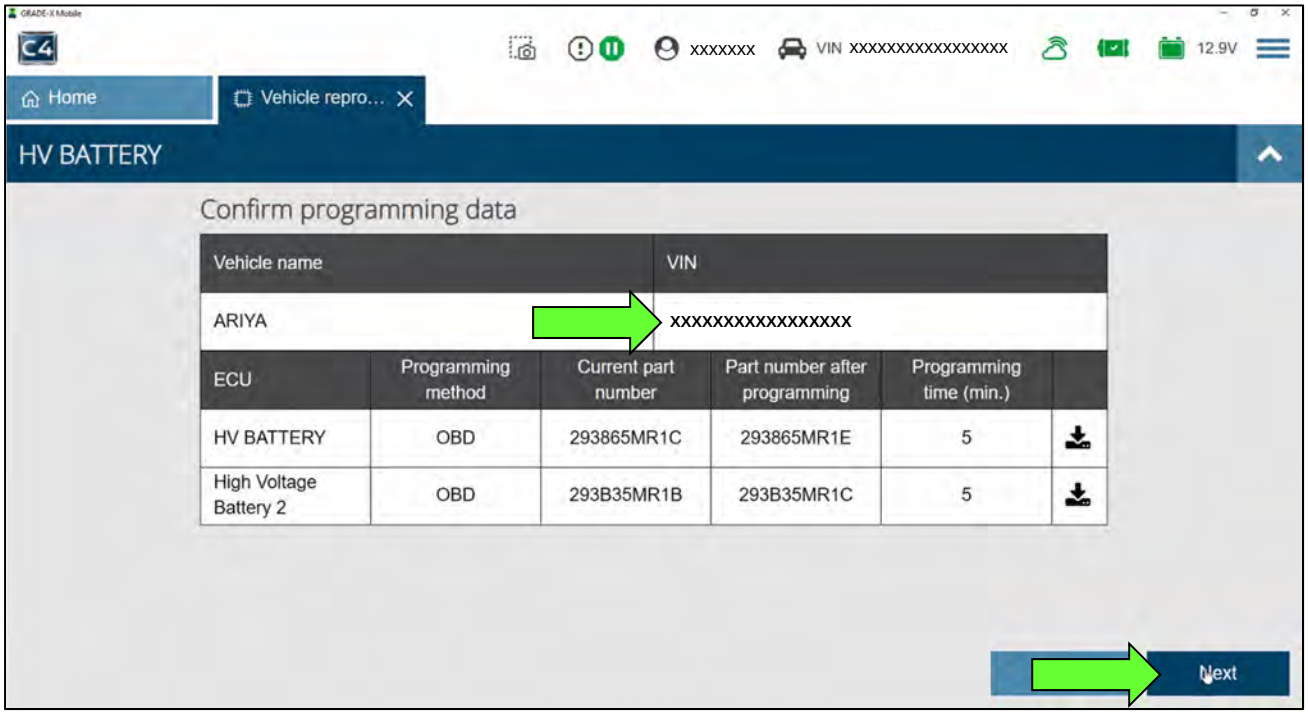


Figure 6

22. Wait for all three (3) progress bars to fill to 100%, and then select **Next**.

**IMPORTANT:** If both "HV BATTERY" and "High Voltage Battery 2" progress bars do not complete, refer to **IMPORTANT** statement on page 2, and then select the **X** next to "Vehicle repro" (Figure 7) and restart the reprogramming at step 15 on page 3.

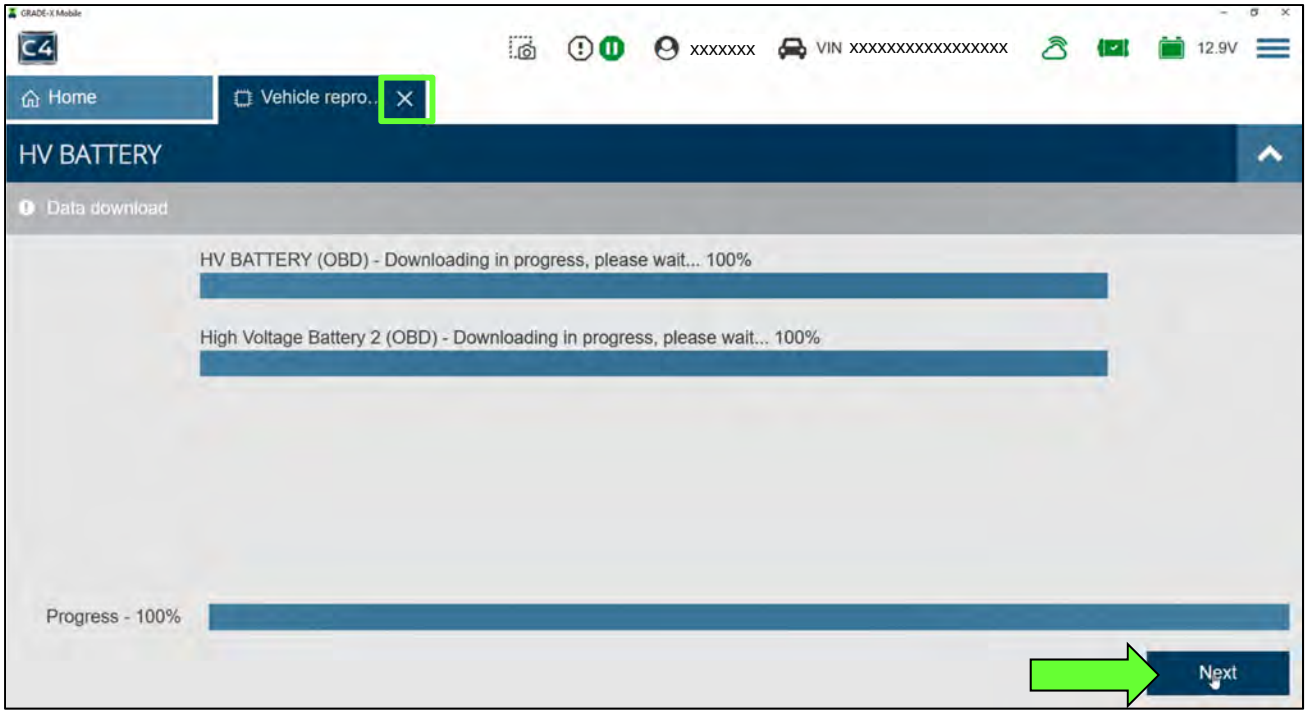


Figure 7

23. Verify the vehicle's 12 volt battery voltage is between 12.0V and 13.5V.
    - Adjust the battery charger as needed.
24. When 12V, or greater, is displayed in the "Value" field (Figure 8) and the green check mark appears, select **Next**.

    **HINT:** Raise or lower the 12 volt battery's voltage until the check appears.
25. After the required conditions are met, select **Next**.

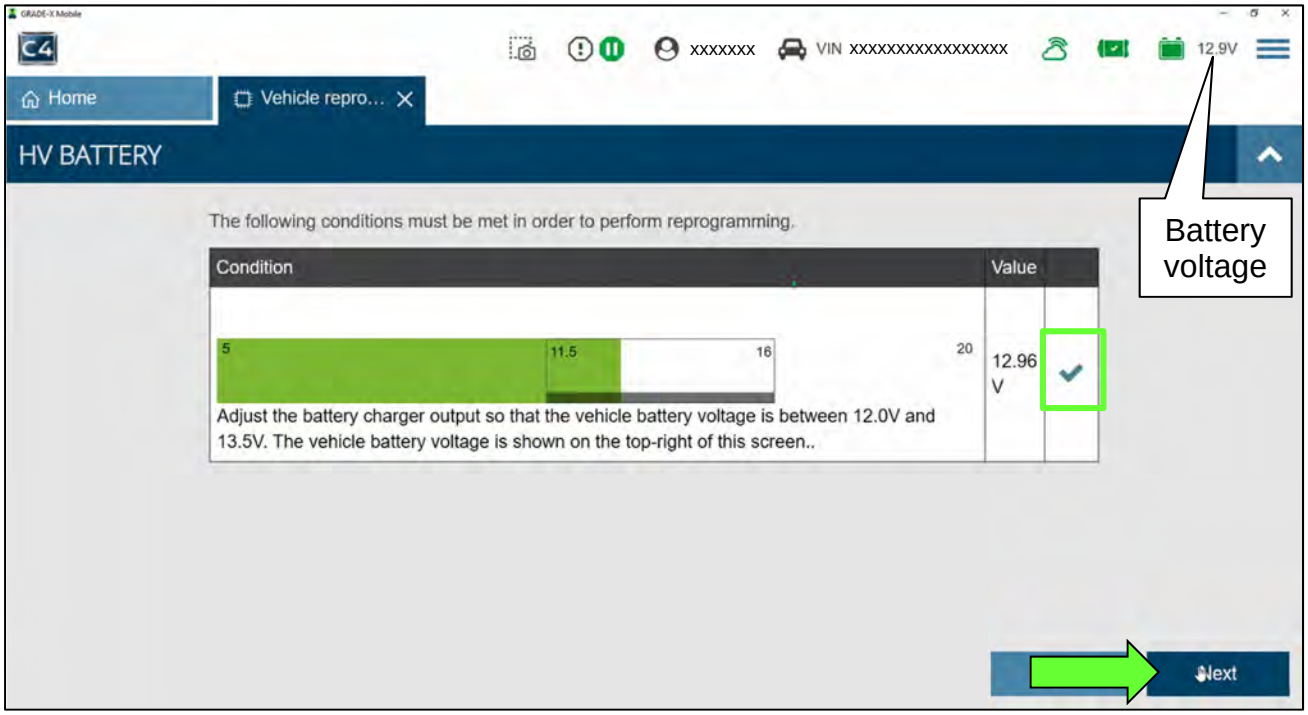


Figure 8

26. When the screen in Figure 9 is displayed, select **Next**.

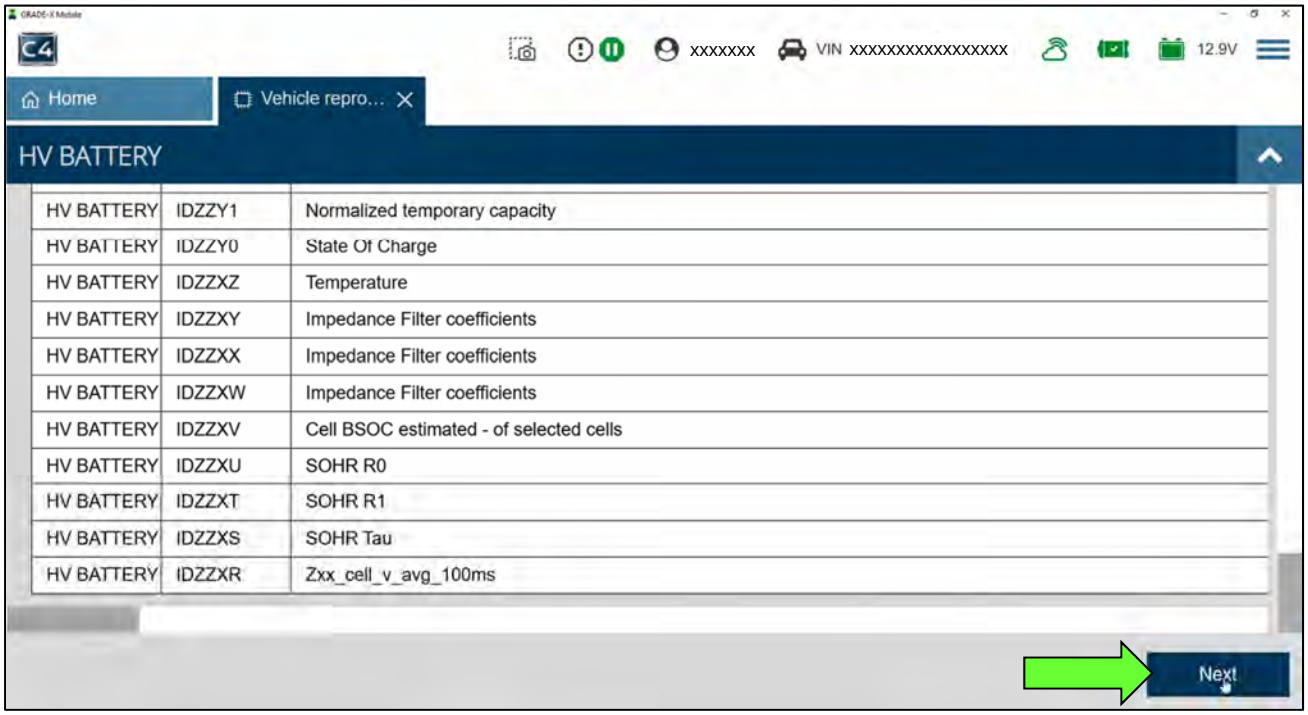


Figure 9

27. Did “Reprogramming error” display (Figure 10)?

**YES:** Select **Yes**, and then proceed to step 28.

**IMPORTANT:** Do not disconnect the VI3 or shut down CONSULT-4 if reprogramming does not complete. If the screen in Figure 10 displays, reprogramming did not complete.

**NO:** Skip to step 44 on page 16 to continue with reprogramming.

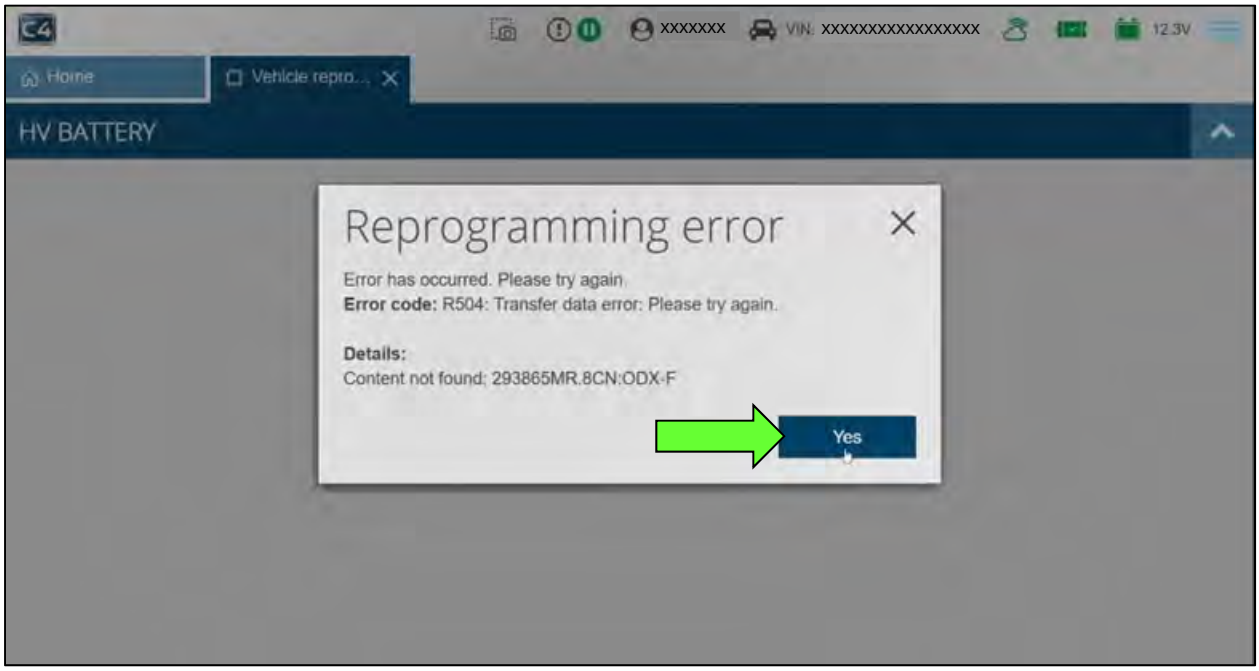


Figure 10

28. Select **Yes** again.

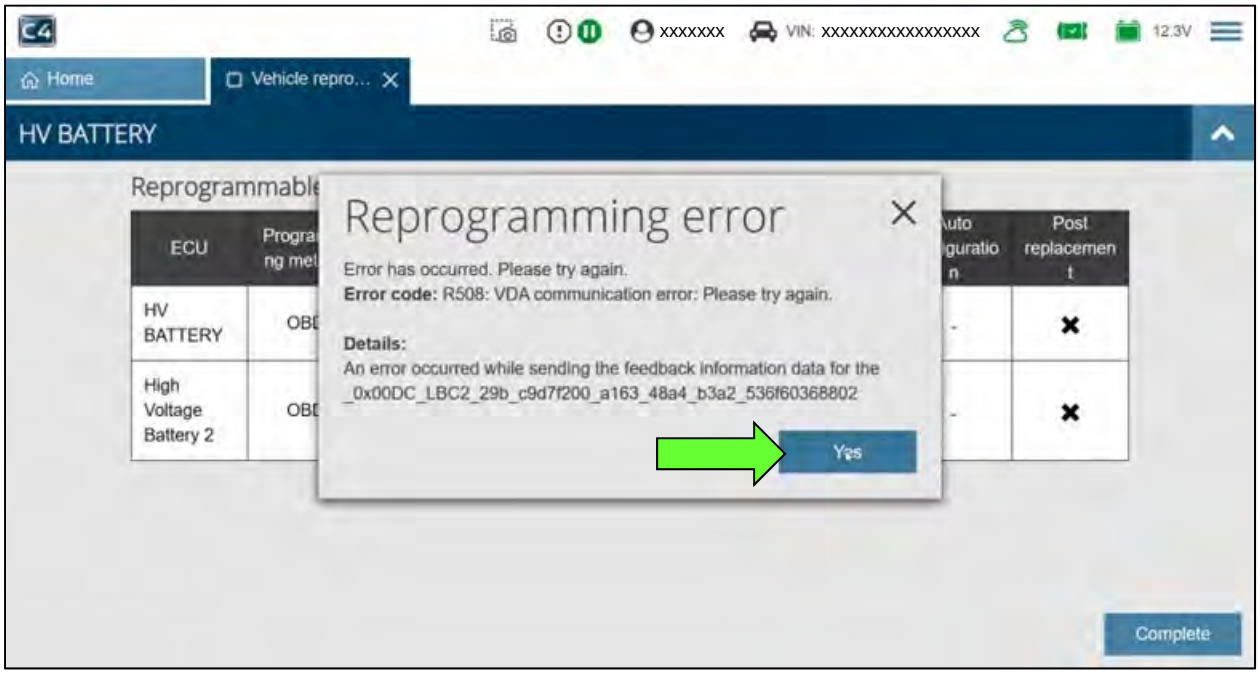


Figure 11

29. Select **Complete**.

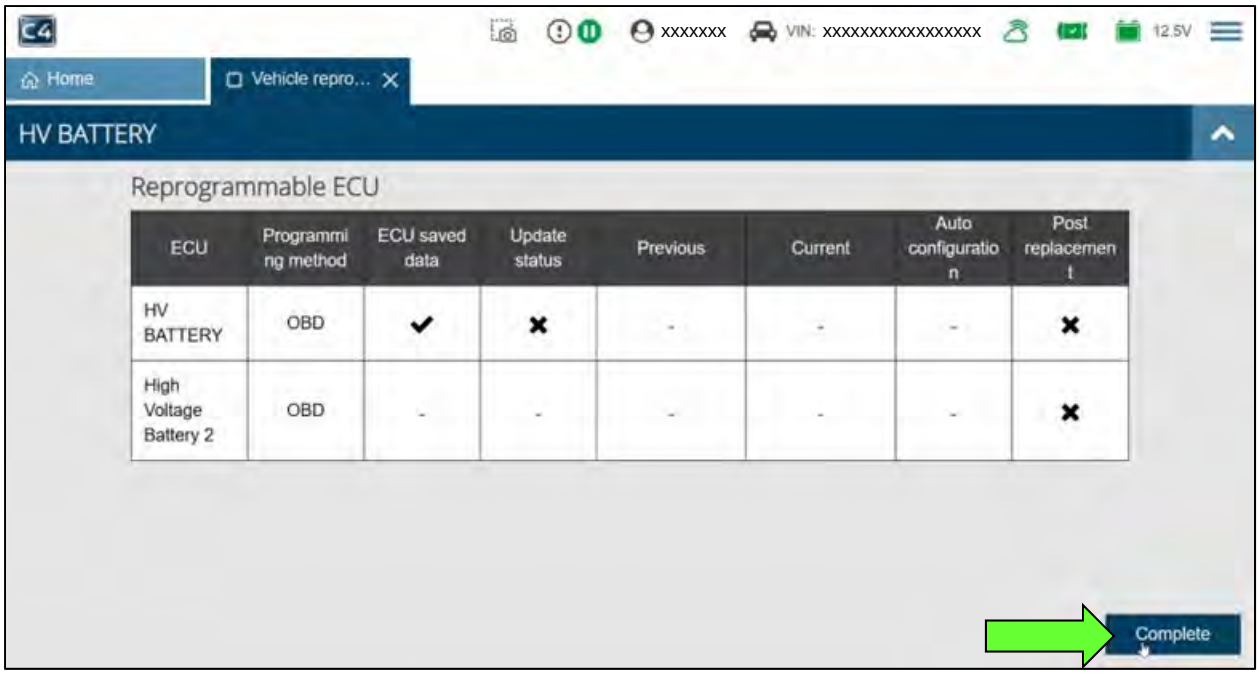


Figure 12

**<u>Do not disconnect the VI3 or shut down CONSULT-4 if reprogramming does not complete</u>**.

30. Confirm that the following conditions are met:

    - Check battery voltage (12.0 - 13.5 V)
    - External Bluetooth® devices are OFF
    - All electrical loads are OFF (e.g. A/C, headlamps, audio)
    - CONSULT PC A/C adapter is plugged in
    - Transmission is in Park

31. Allow system to complete self-diagnosis.


Figure 13

32. Select **Replace ECU**.


Figure 14

33. Select **HV BATTERY**.

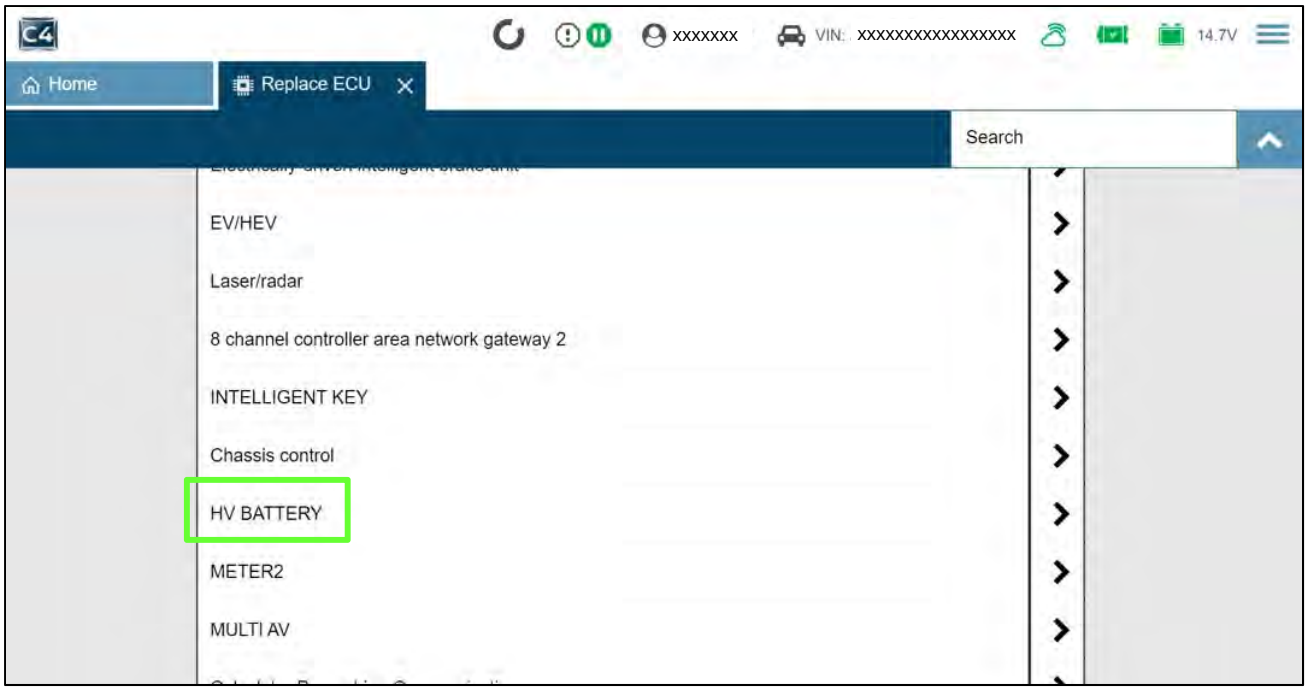


Figure 15

34. Select **Continue**.

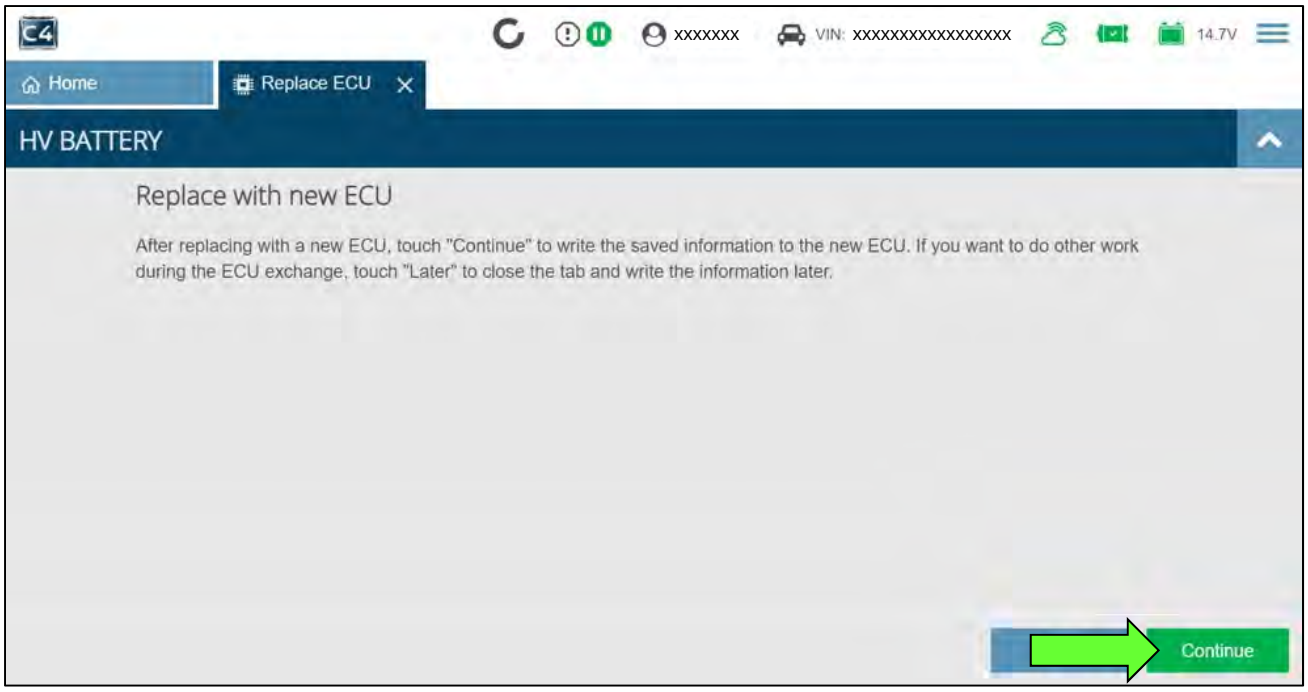


Figure 16

35. Select **Next**.

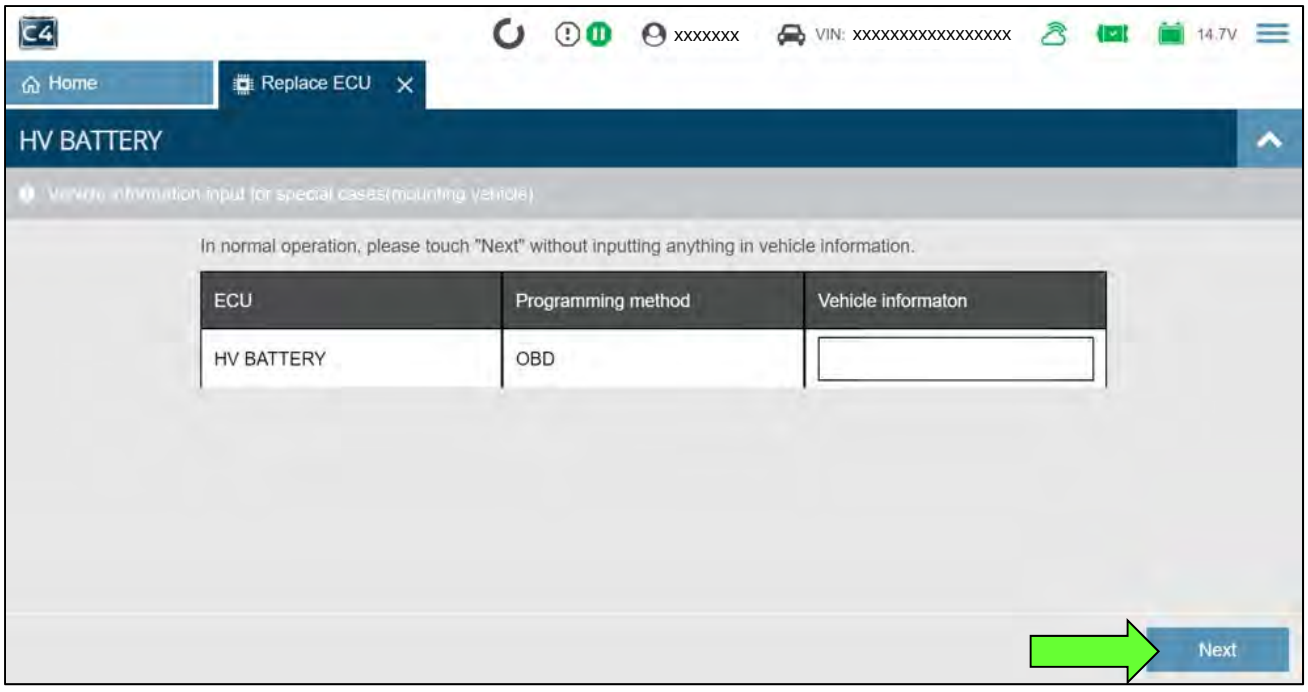


Figure 17

36. Select **Next** again.

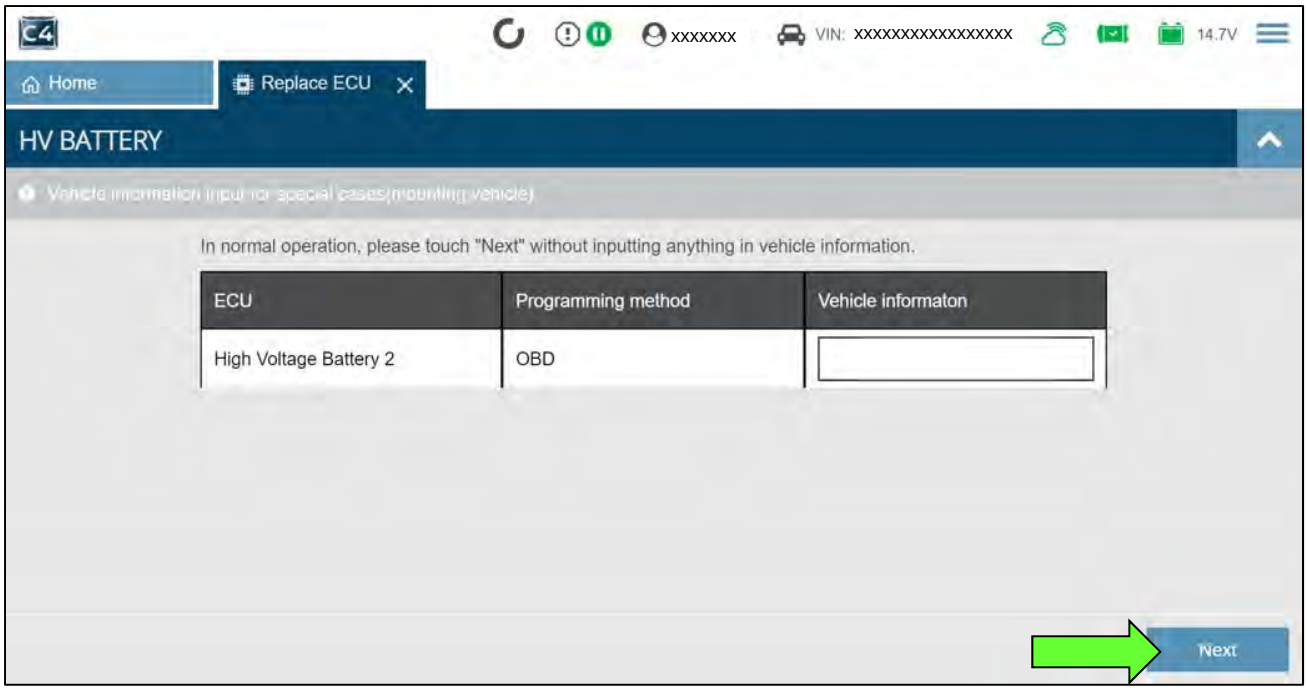


Figure 18

37. Select **Next** a third time.

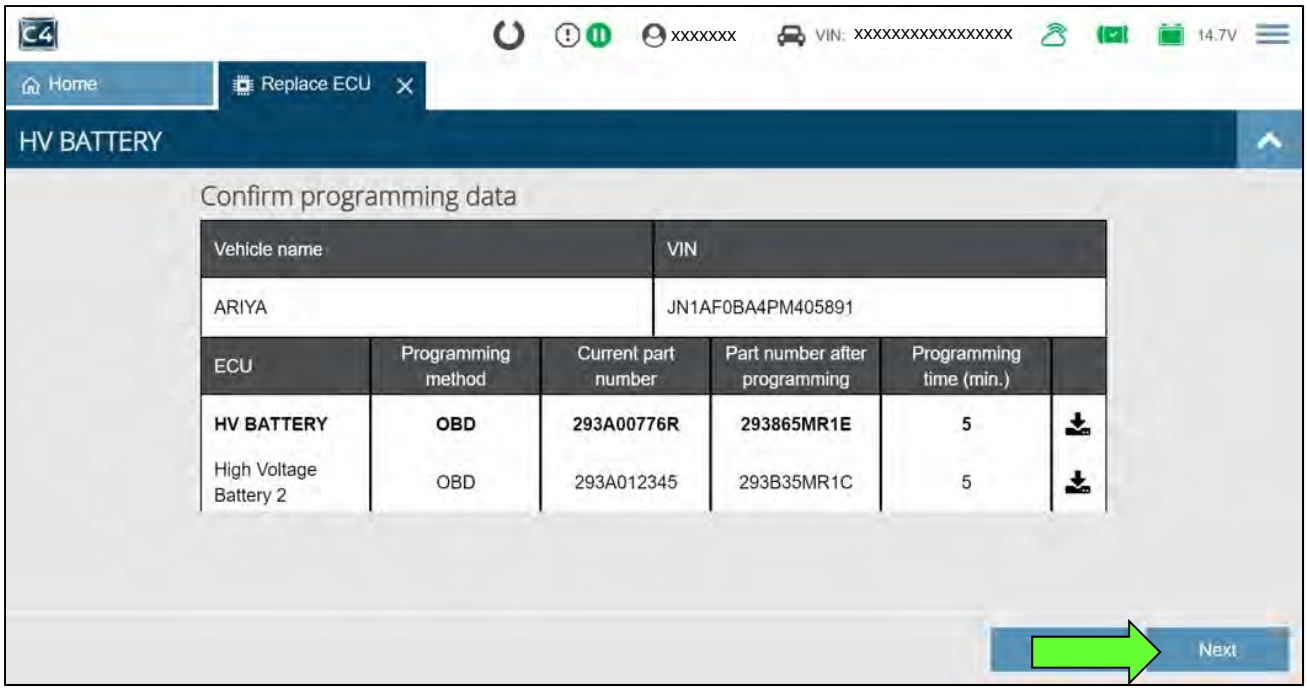


Figure 19

38. Wait for all three (3) progress bars to fill to 100%, and then select **Next**.

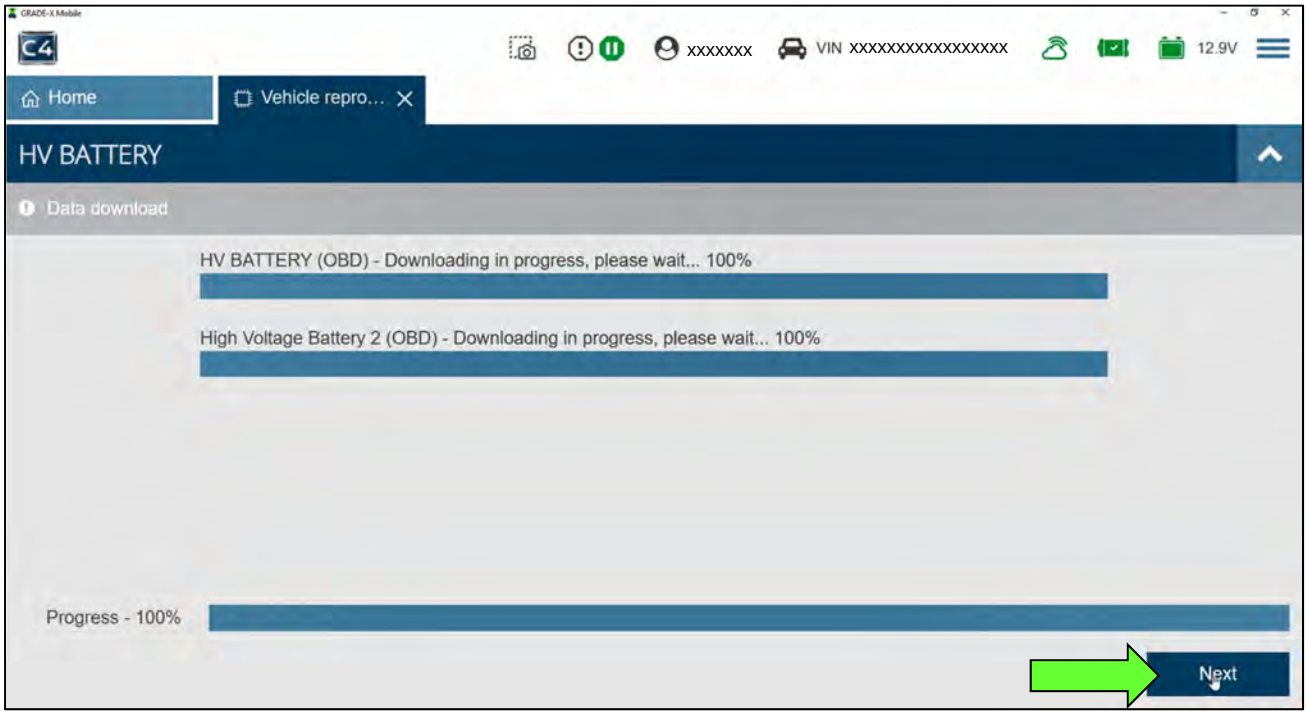


Figure 20

39. Verify the vehicle's 12 volt battery voltage is between 12.0V and 13.5V.
    - Adjust the battery charger as needed.
40. When 12V, or greater, is displayed in the "Value" field (Figure 21) and the green check mark appears, select Next.

    **HINT:** Raise or lower the 12 volt battery's voltage until the check appears.
41. After the required conditions are met, select **Next**.

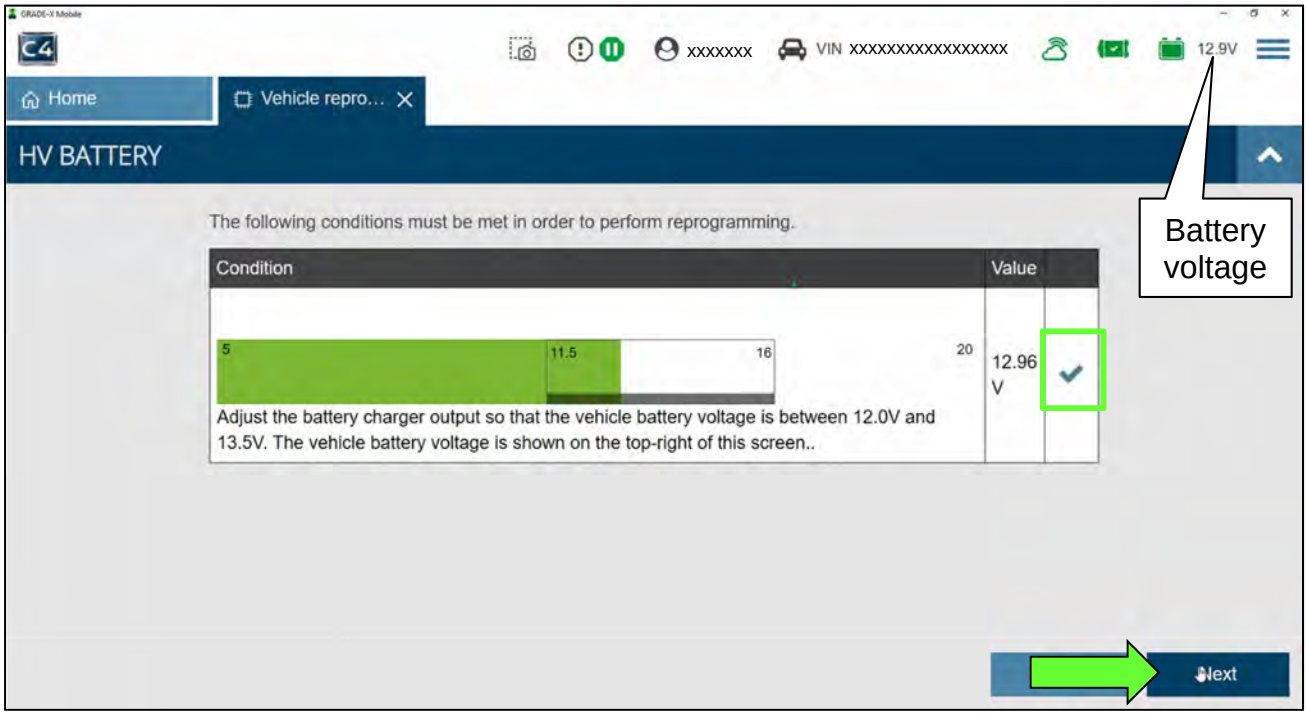


Figure 21

42. Wait for the **In Progress** bar to fill to 100%.

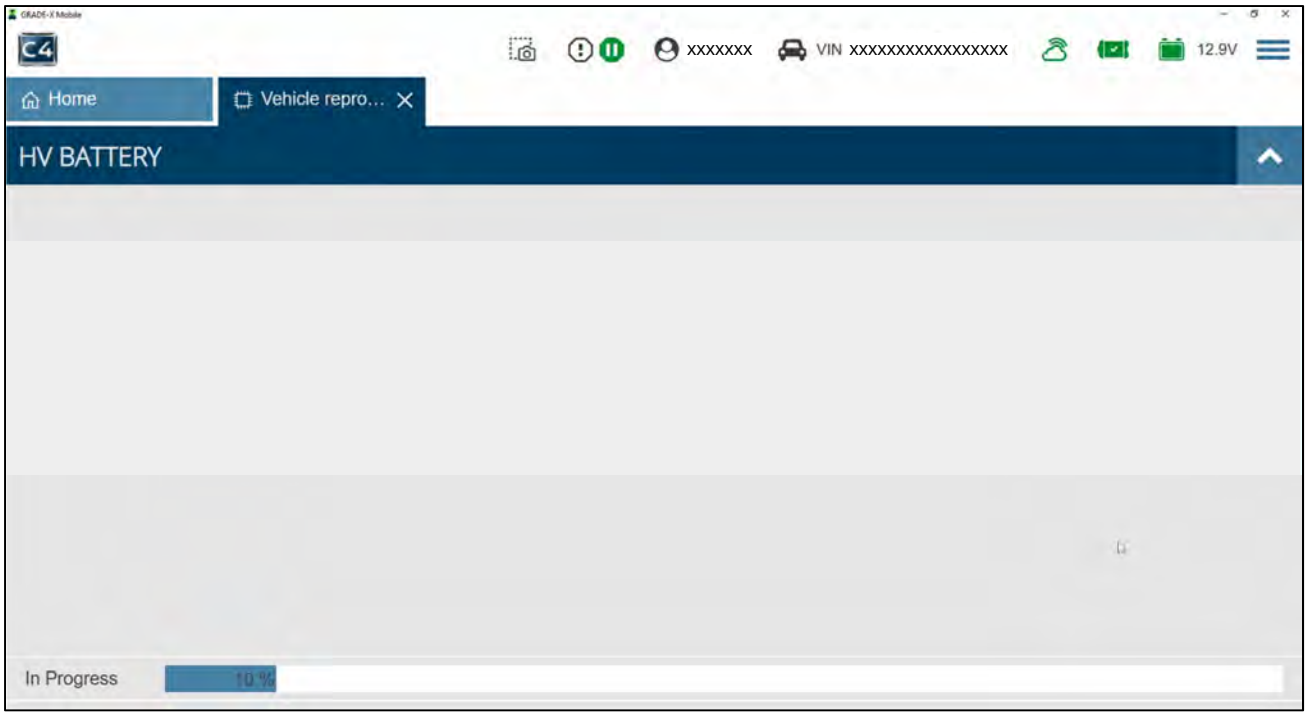


Figure 22

43. When the screen in Figure 23 is displayed, select **Next**.

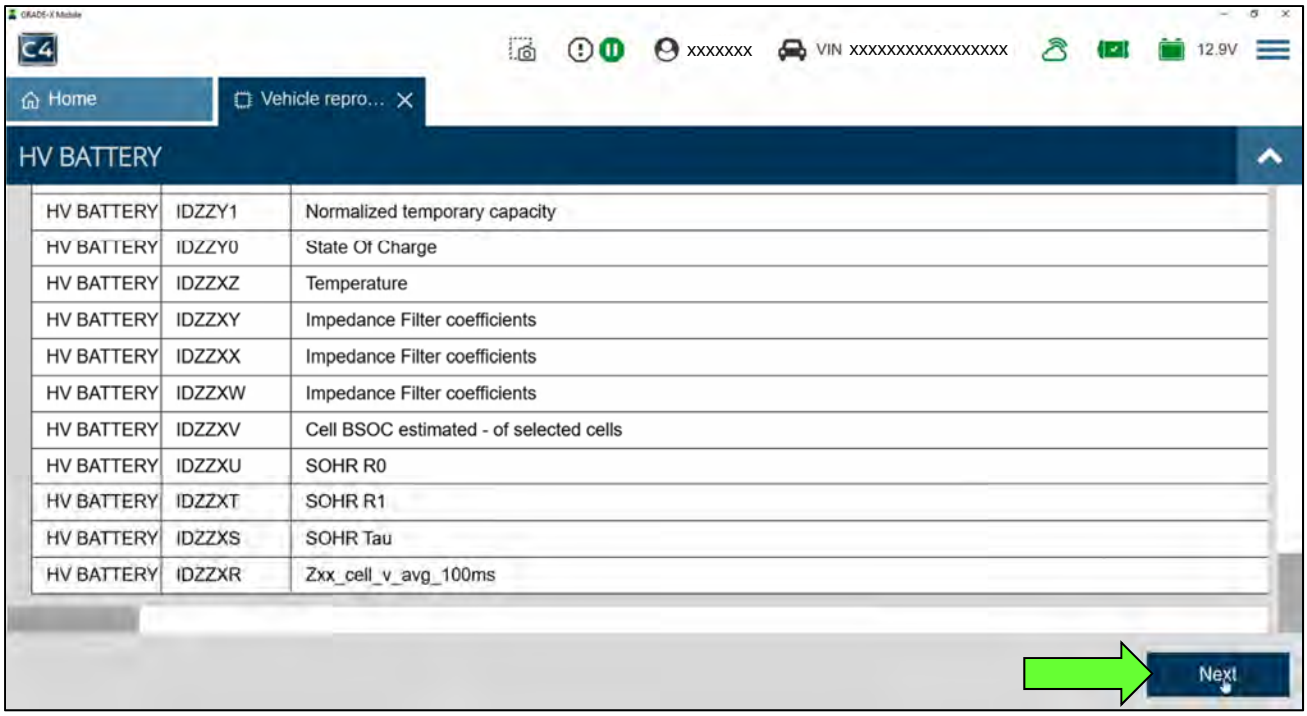


Figure 23

44. Wait for the progress bar to fill to 100%.

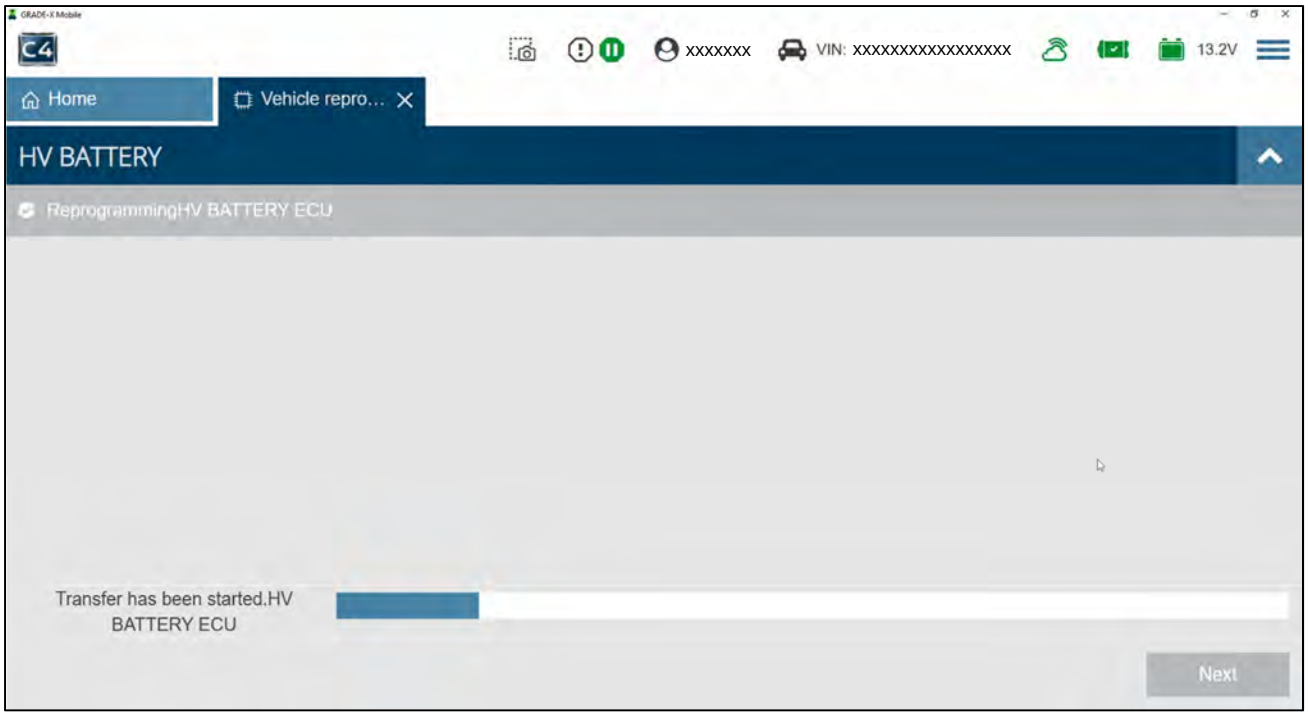


Figure 24

45. When the screen in Figure 25 is displayed, select **START**.

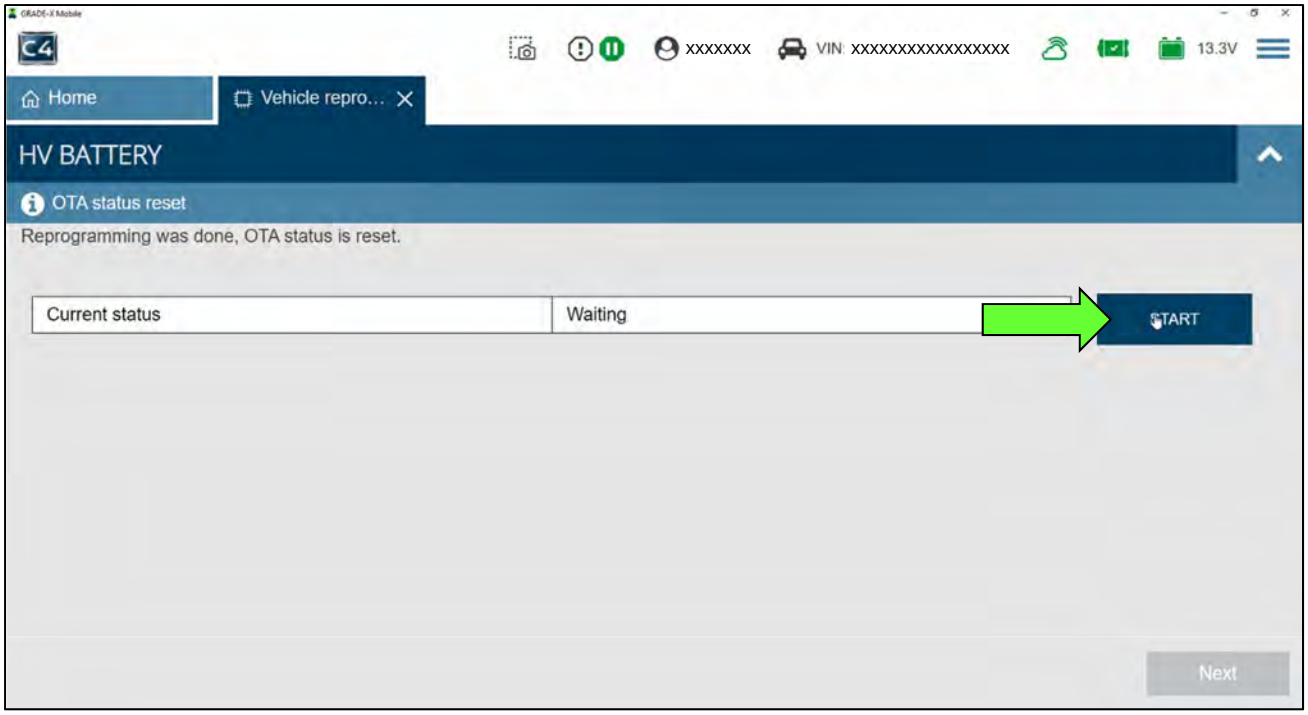


Figure 25

46. Confirm that **Current status** has changed to “Completed”, and then select **Next**.

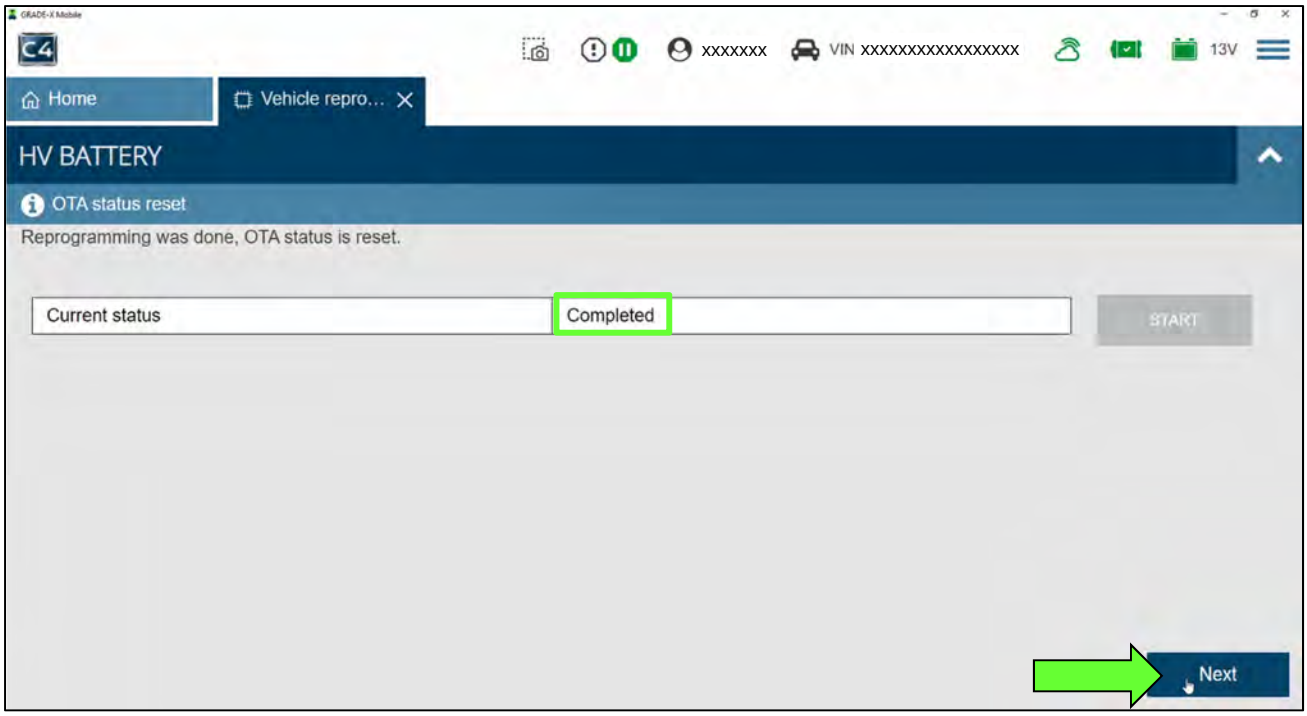


Figure 26

47. Confirm that the **IGN SW** status is “On” and has a **Waiting time** of “300” (seconds).

**HINT:** This is equal to 5 minutes.

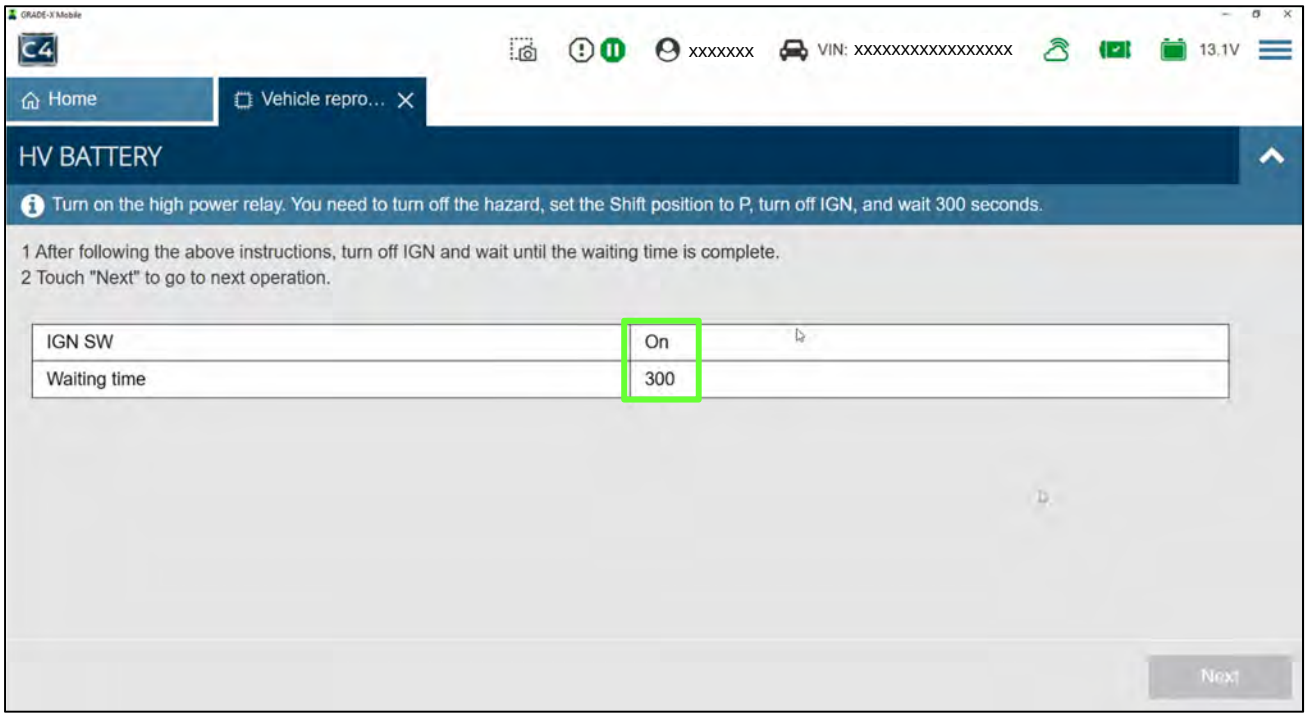


Figure 27

48. Turn the hazard lamps OFF.

49. Confirm that the vehicle is in Park (**P**), and then turn the vehicle IGN to OFF.

50. Verify the **IGN SW** status is now “Off” (Figure 28).
    - **Waiting time** should now count down automatically. Wait until count reaches “0”.

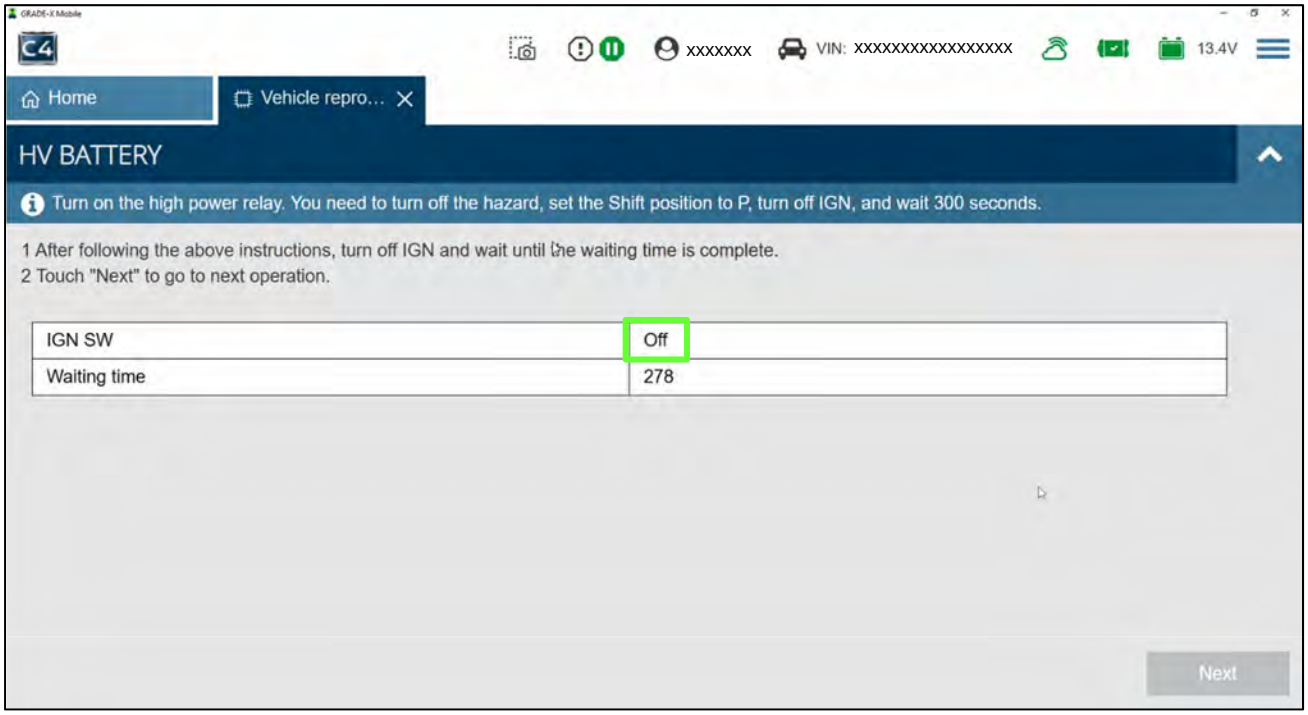


Figure 28

51. When **Waiting time** reaches “0”, select **Next**.

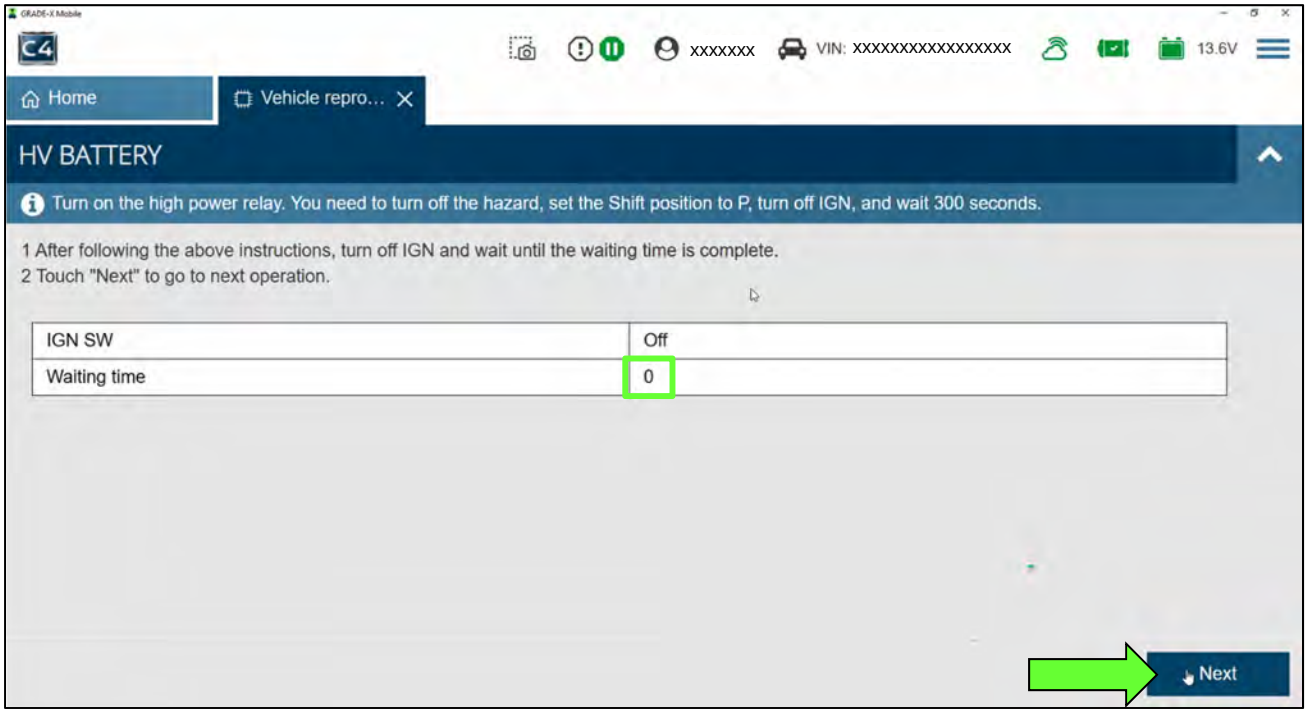


Figure 29

52. Turn the vehicle ON, and then select **Next**.

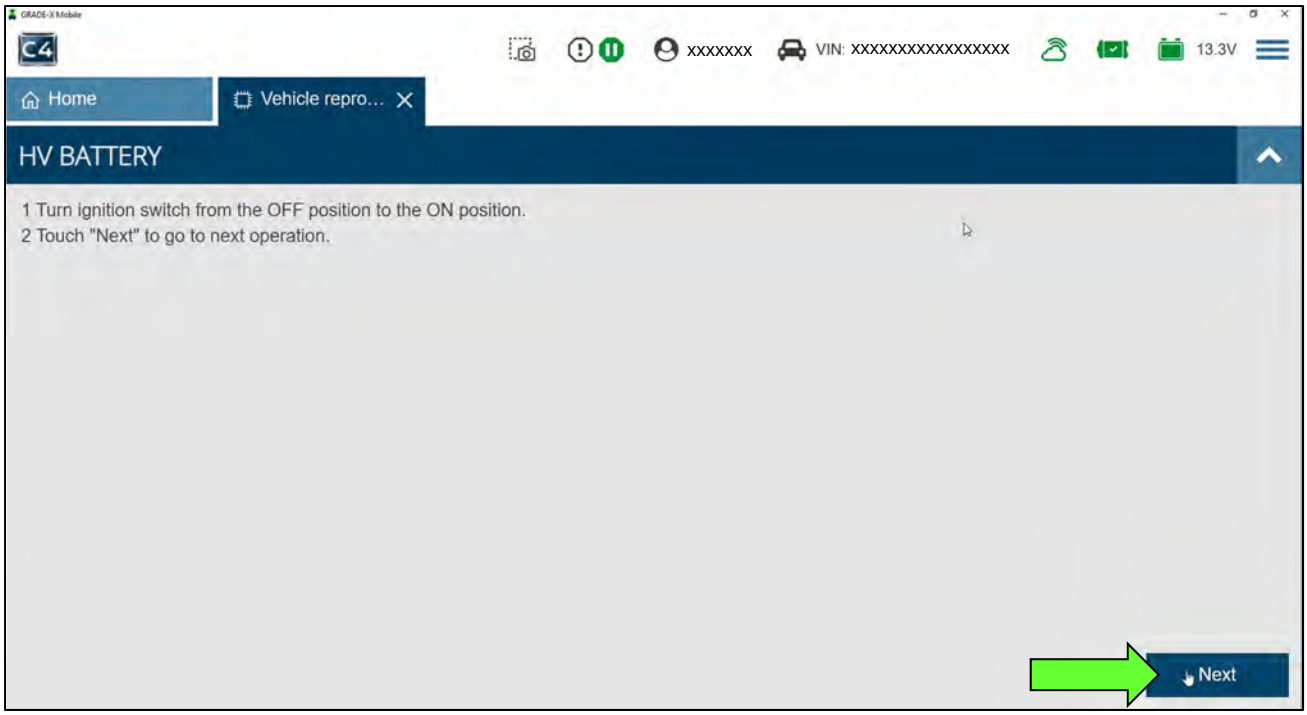


Figure 30

53. When the screen in Figure 31 is displayed, select **Next**.

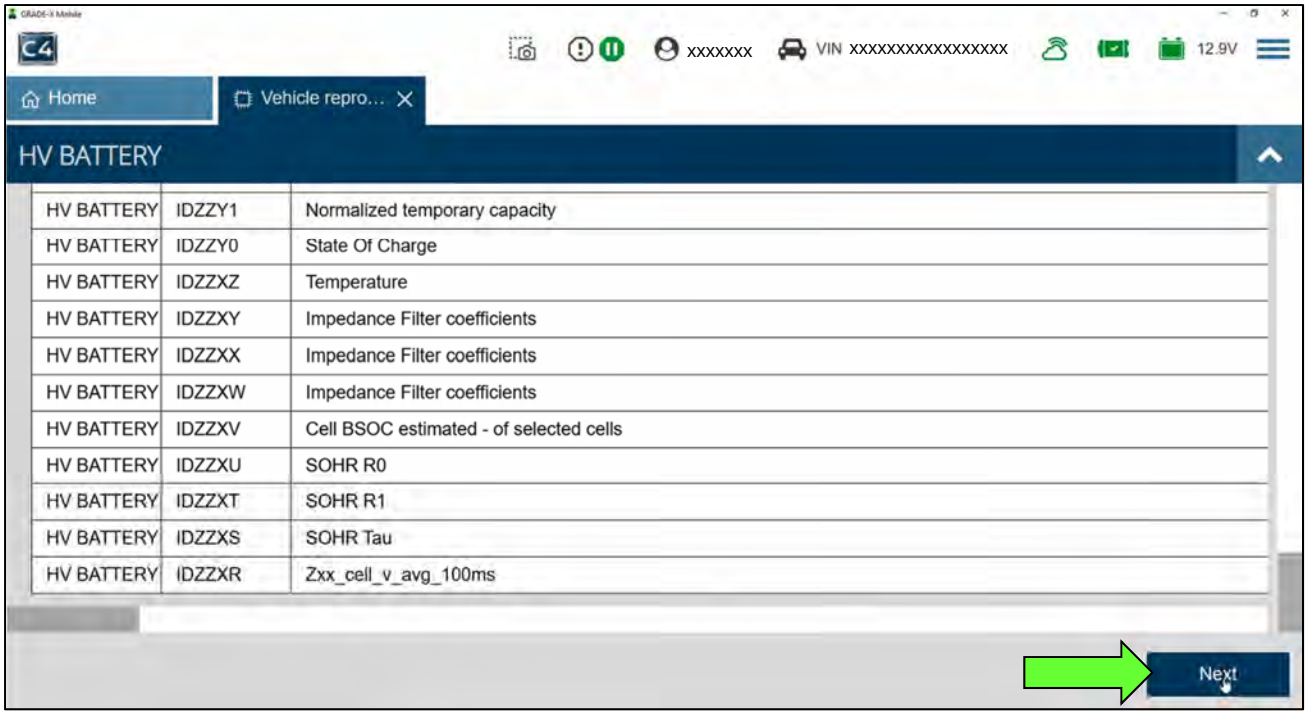


Figure 31

54. When the screen in Figure 32 is displayed, select **Next**.

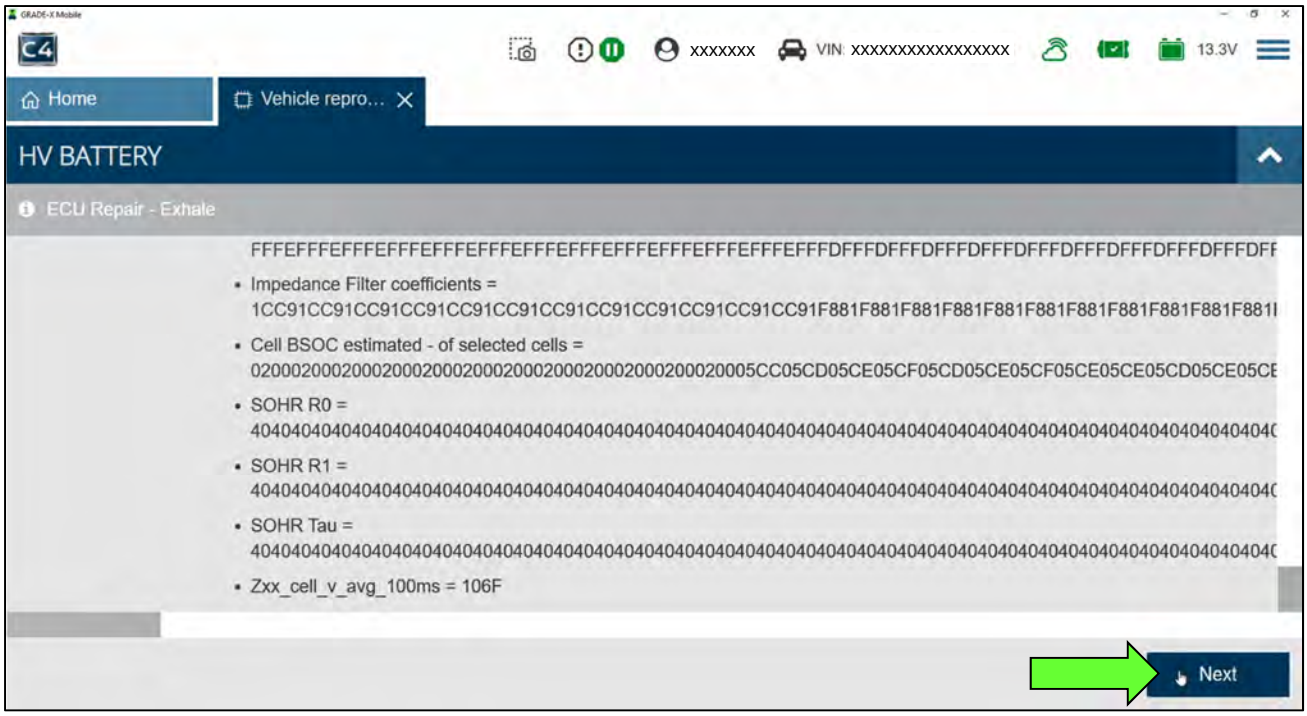


Figure 32

55. Wait for the progress bar to fill to 100%.

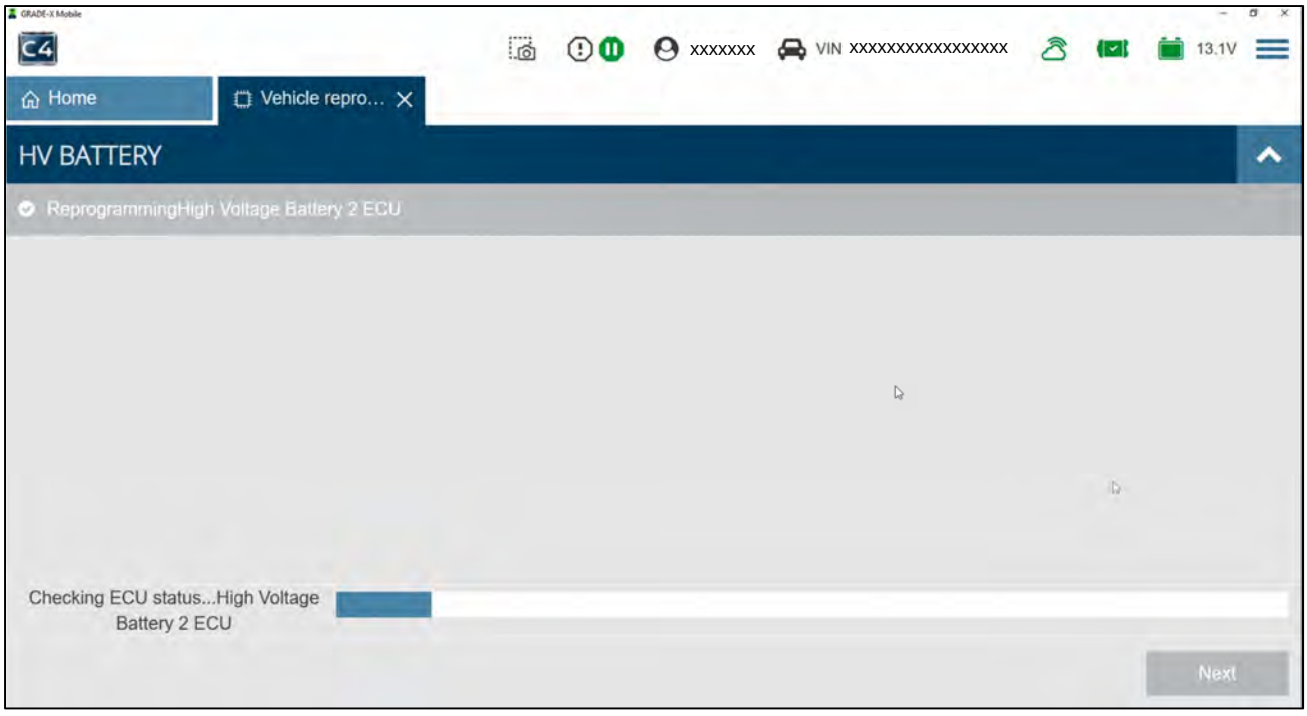


Figure 33

56. When the screen in Figure 34 is displayed, select **START**.

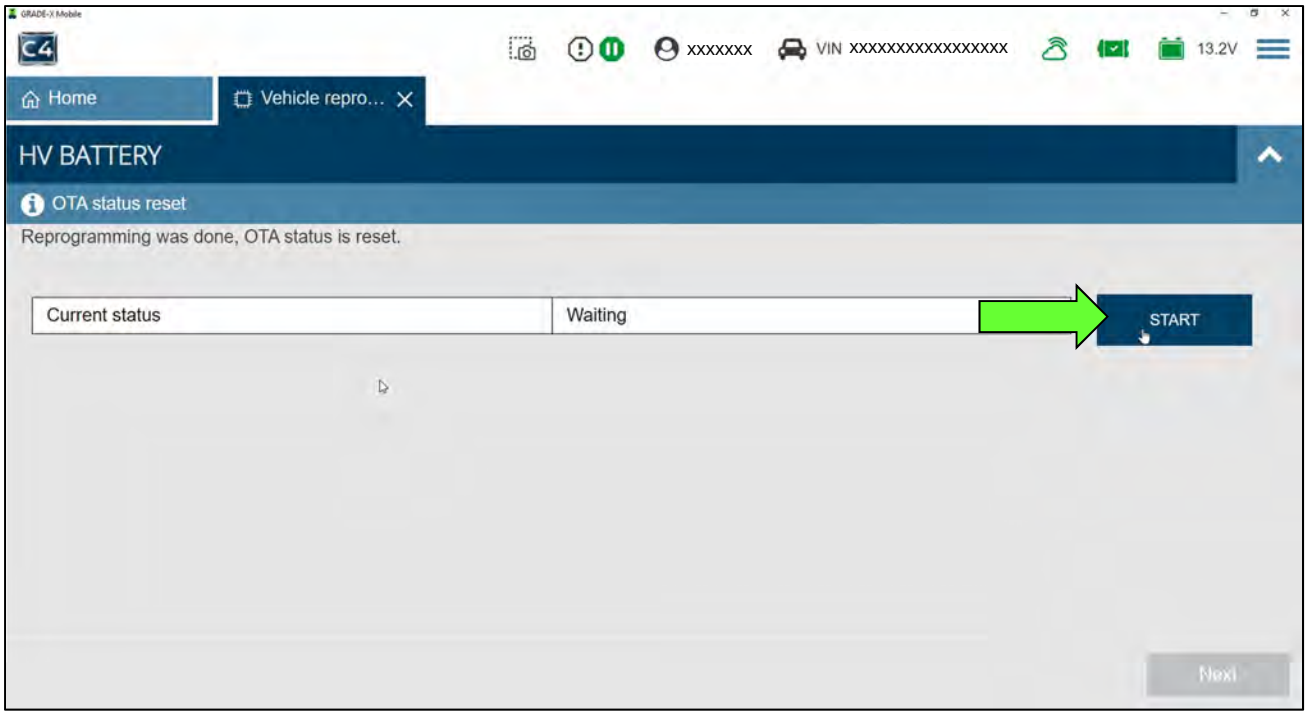


Figure 34

57. Once **Current status** has changed to “Completed”, select **Next**.

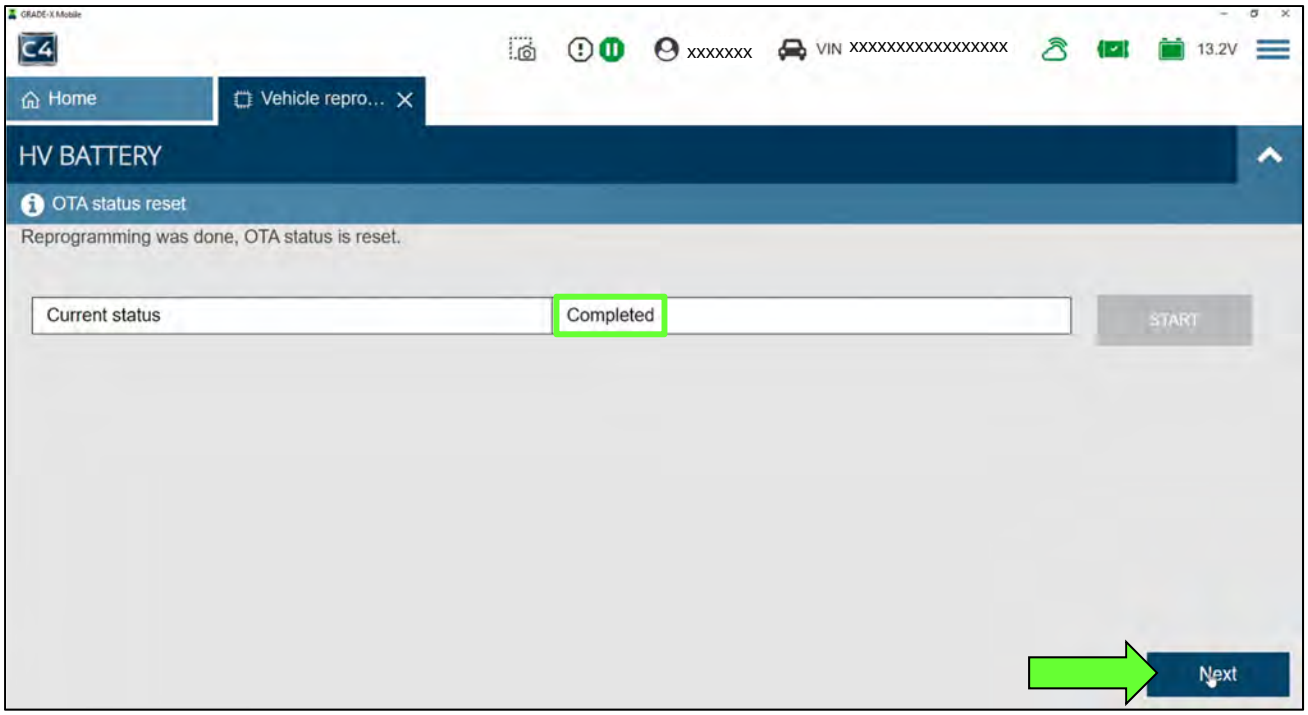


Figure 35

58. Verify the **IGN SW** status is “On”.

**HINT:** The vehicle should still be in Park (**P**) with the hazards OFF.

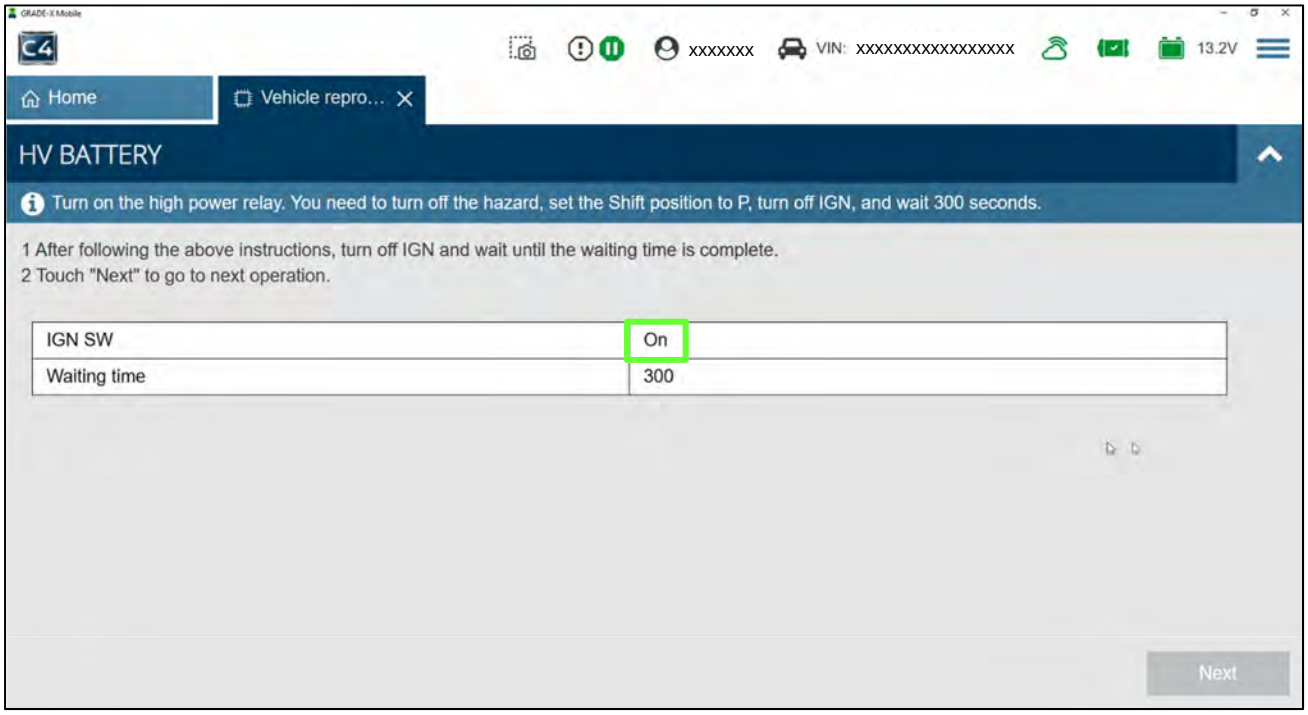


Figure 36

59. Turn the vehicle IGN to OFF, and then verify the **IGN SW** status is now “Off”.

- **Waiting time** should now count down automatically. Wait until count reaches “0”.

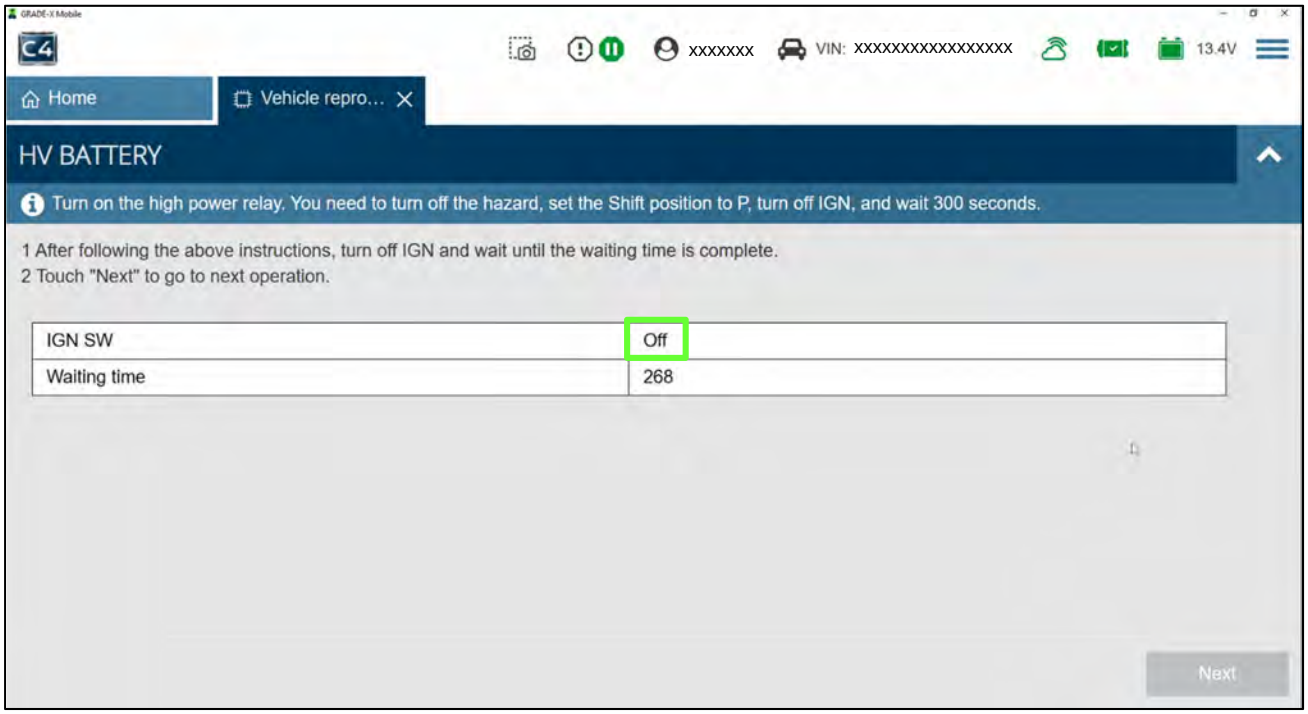


Figure 37

60. When **Waiting time** reaches “0”, select **Next**.

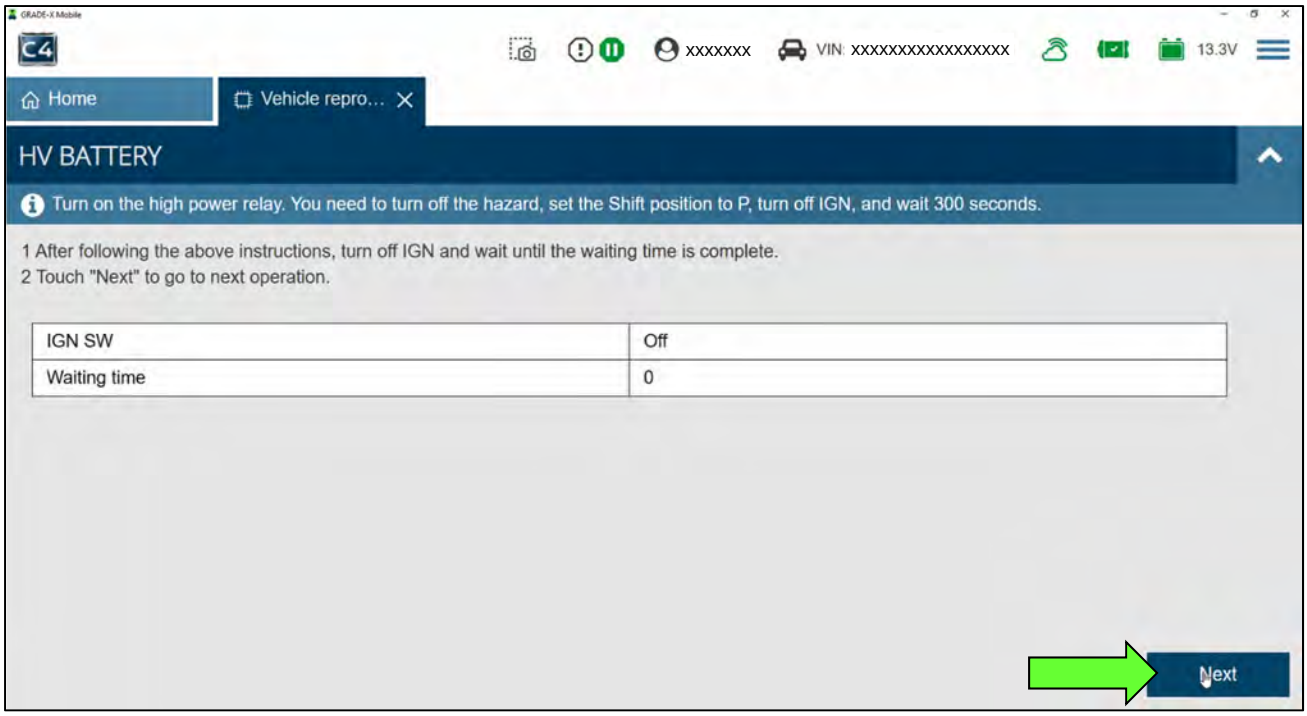


Figure 38

61. When the screen in Figure 39 is displayed, select **Next**.

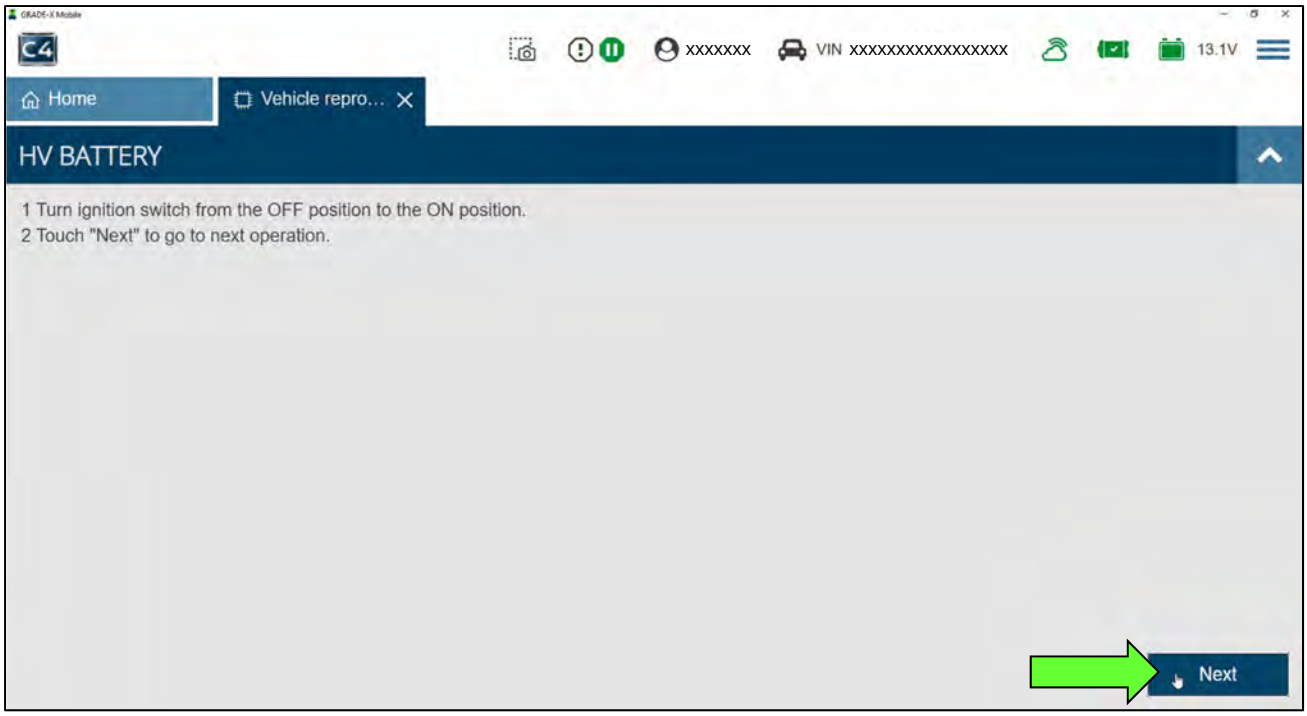


Figure 39

62. Verify that **Update status** has “check marks” for the **HV BATTERY** and the **High Voltage Battery 2** (Figure 40).

63. Verify that the **Current** part numbers are different than the **Previous** part numbers.

- If either of the “Current” part numbers have not changed, select **Home,** and then restart the reprogramming procedure from step 15 on page 3.

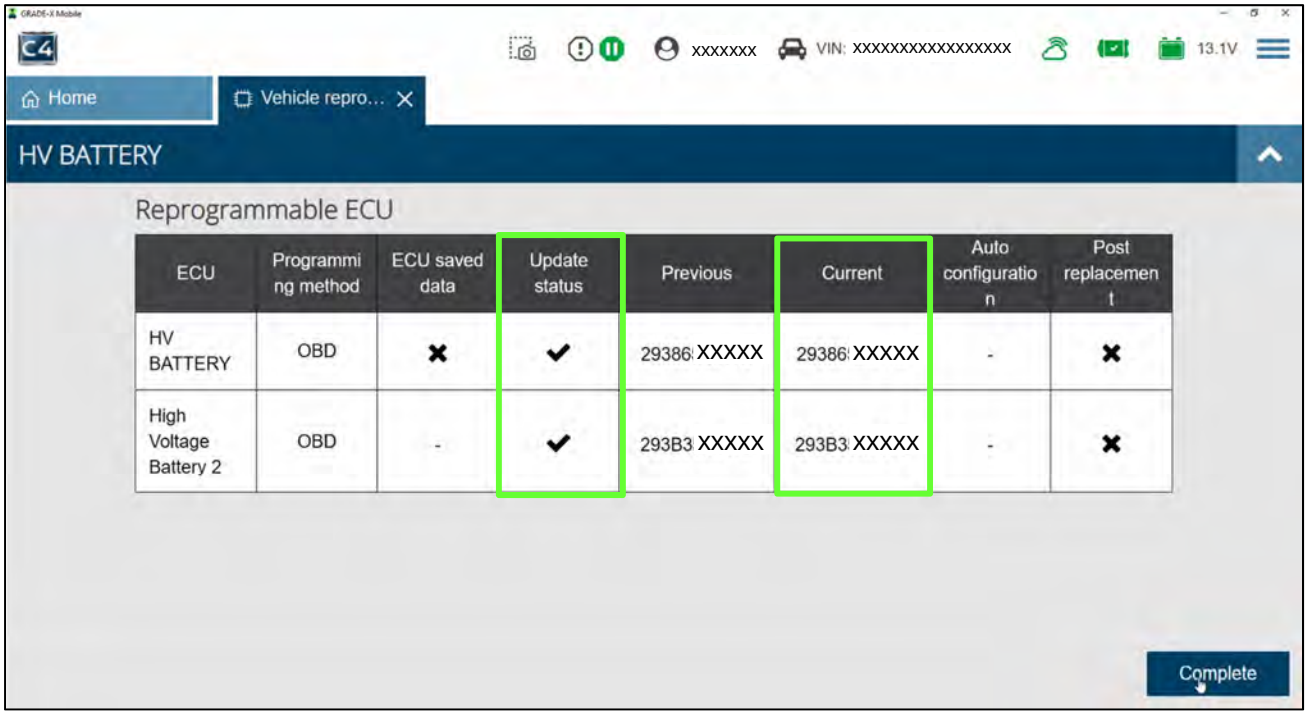


Figure 40

64. Select the drop down menu icon, and then select **Print**.

- Attach the printed confirmation to the repair order.

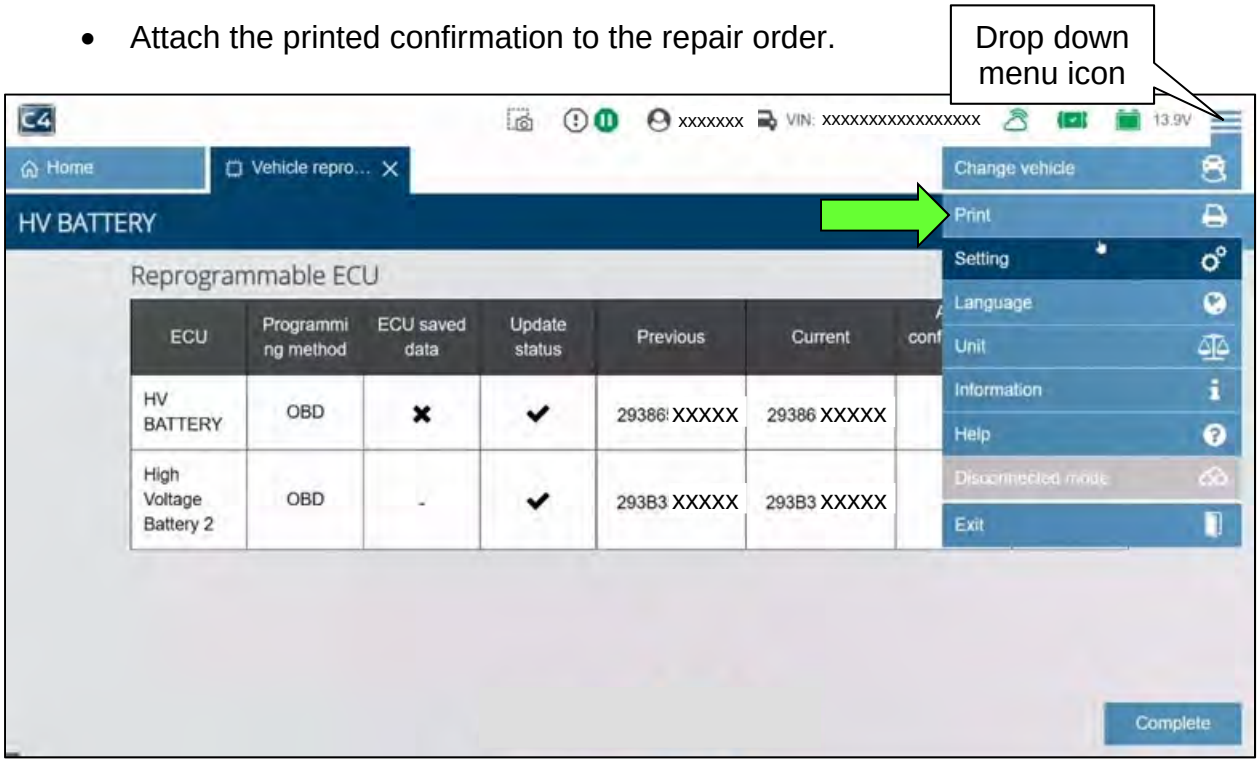


Figure 41

65. Select **Complete**.

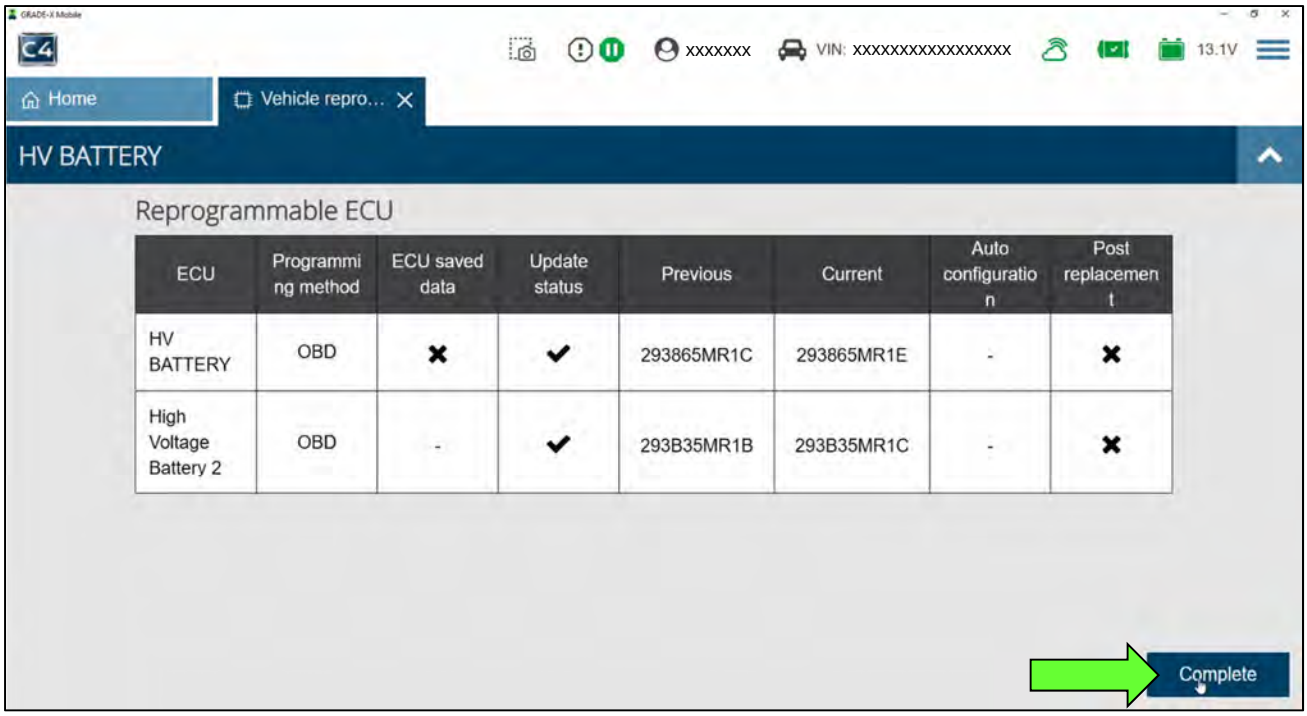


Figure 42

66. Turn the vehicle IGN to OFF.

67. Disconnect the VI3 from the vehicle.

    **IMPORTANT:** The remainder of the procedure will not complete if this step is not followed.

68. Remove the battery charger from the vehicle's 12 volt battery, and then close the hood.

69. Close all doors, and then lock the vehicle with the key fob.

70. Wait at least 5 minutes.

    **IMPORTANT:** Do not to disturb the vehicle during this time period to ensure the vehicle goes into sleep mode.

71. Turn the vehicle IGN ON and reconnect the VI3 to the vehicle.

72. Confirm if any Past DTCs are present.

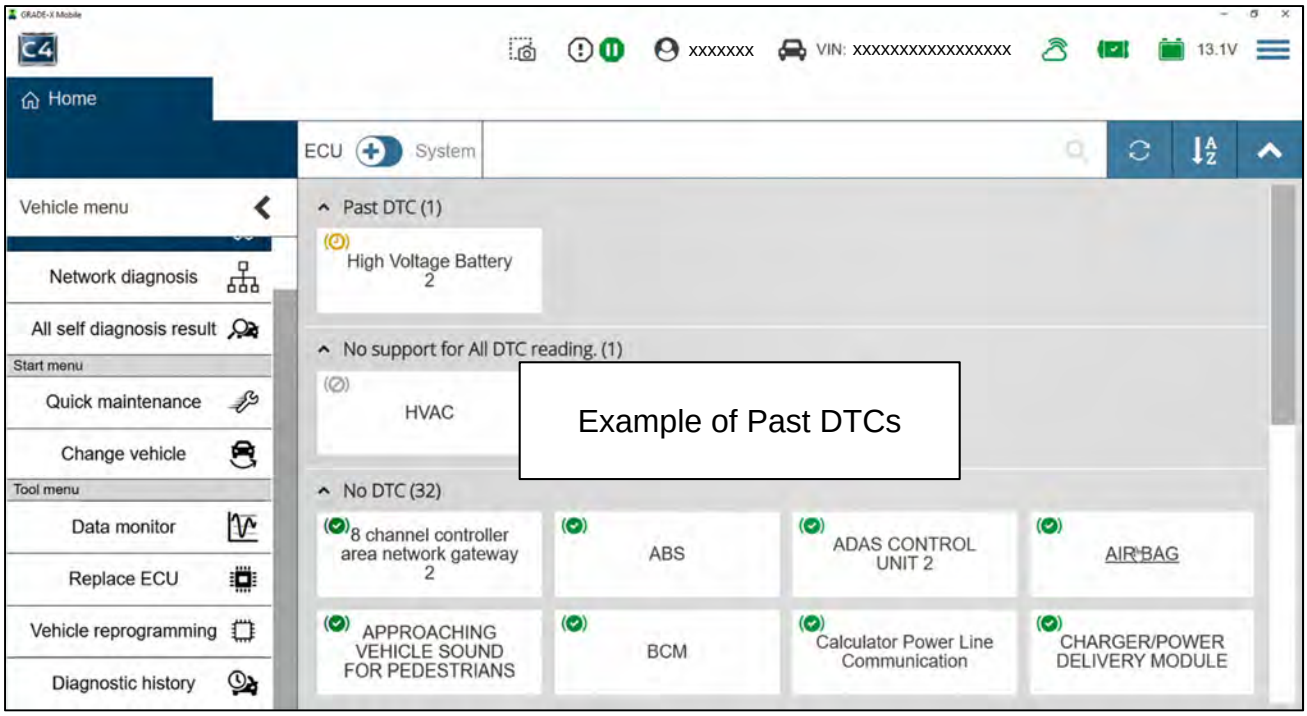


Figure 43

73. If a DTC(s) is present, perform “Erase all DTC” as follows:

    a. Select **All self diagnosis result**.

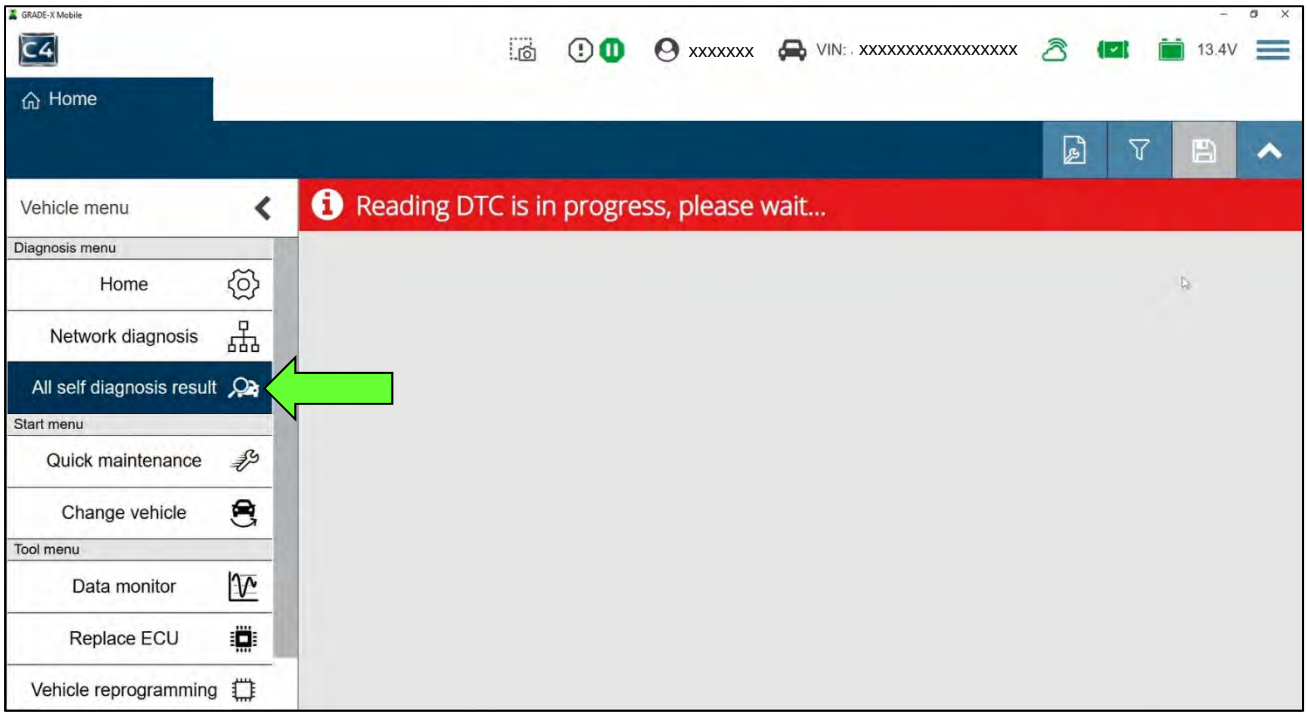


Figure 44

b. Select the “Erase DTC” icon shown in Figure 45.

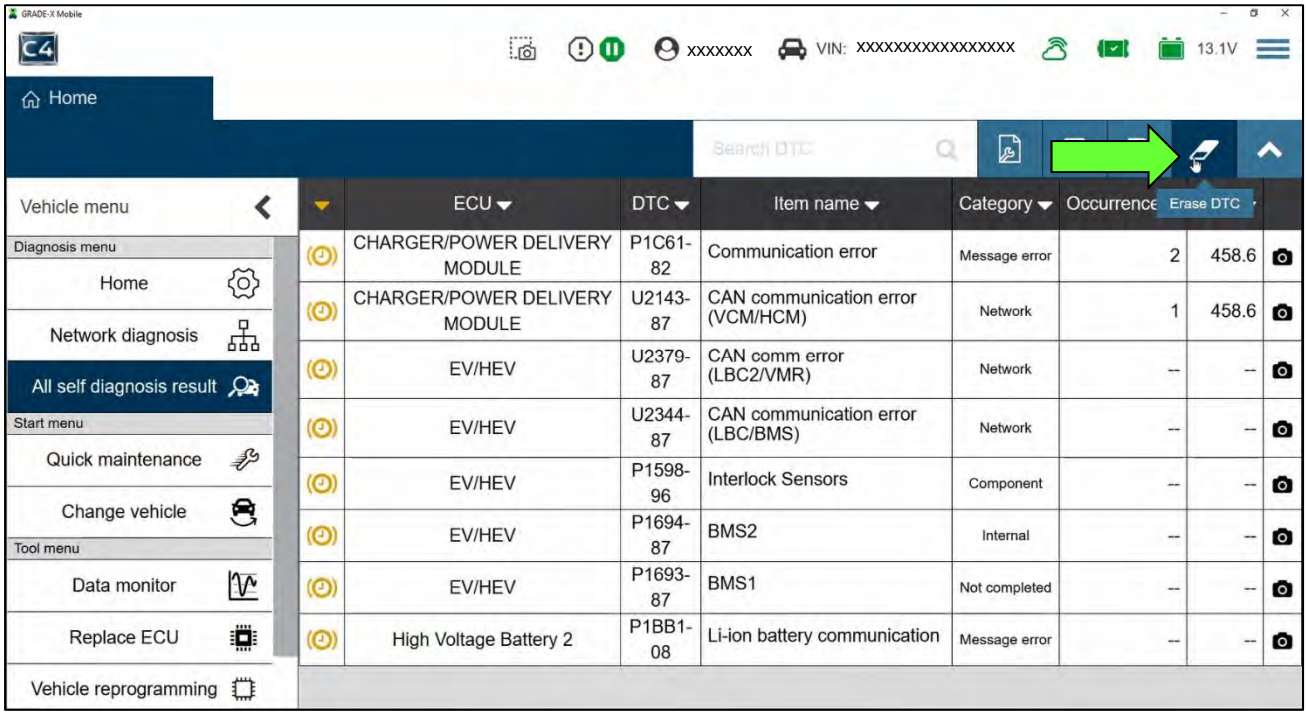


Figure 45

c. Select **Yes**.

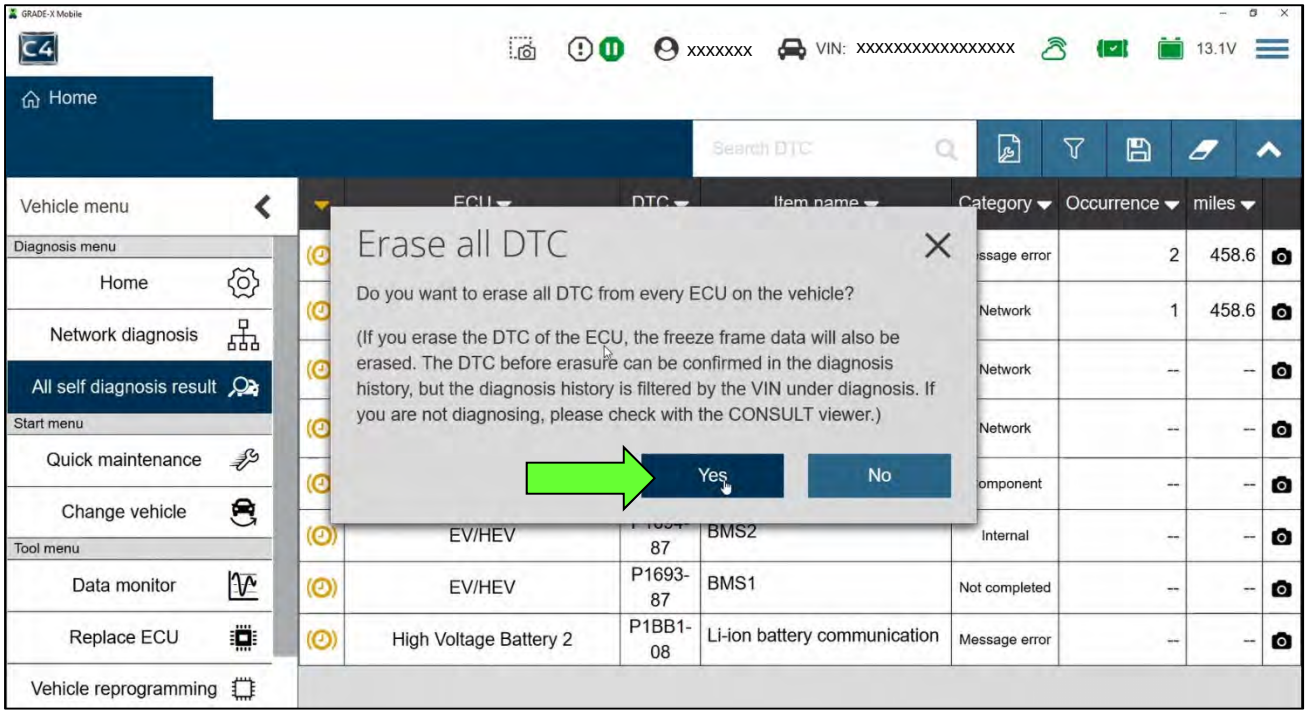


Figure 46

d. Select **Home** and wait for the system diagnosis to complete. Confirm that all DTCs have been erased.

   o Any remaining DTCs, other than those listed on page 1, are not covered by this bulletin. For unlisted DTCs see the ESM for further diagnostic information.

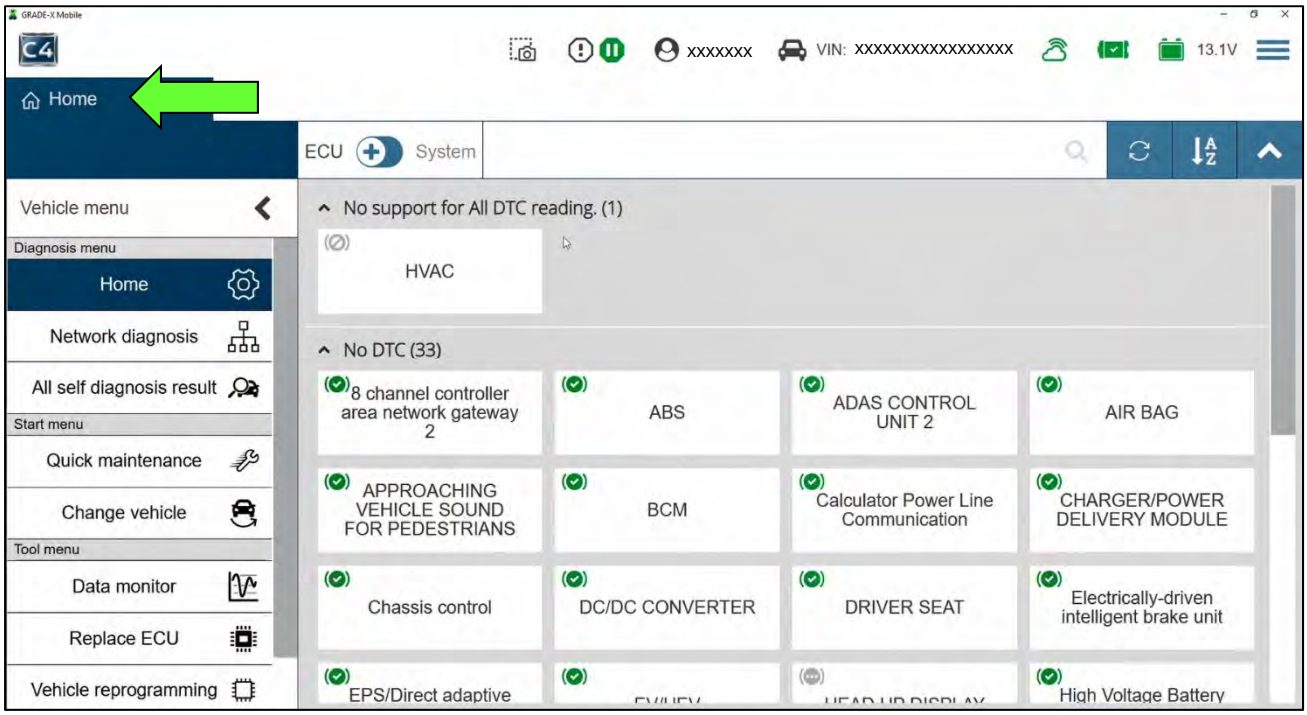


Figure 47

74. Disconnect the VI3 from the vehicle.

75. Confirm that the vehicle is operating correctly.

- For all other concerns not listed in this bulletin, refer to the ESM for further diagnostic information.

## CLAIMS INFORMATION

**Submit a Primary Part (PP) type line claim using the following claims coding:**

| DESCRIPTION | PFP | OP CODE | SYM | DIA | FRT |
|---|---|---|---|---|---|
| Reprogram Battery Management System (BMS) | (1) | JX1RAA | ZE | 32 | 1.1 |

(1) Reference the electronic parts catalog and use the Battery Controller Assy (293A0-*****) as the Primary Failed Part (**PFP**).

## AMENDMENT HISTORY

| PUBLISHED DATE | REFERENCE | DESCRIPTION |
|---|---|---|
| November 15, 2023 | NTB23-075 | Original bulletin published |
| April 23, 2024 | NTB23-075A | **IF YOU CONFIRM** revised |