		GROUP	NUMBER
	<b>_</b>	CAMPAIGN	22-01-076H-1
		DATE	MODEL(S)
	nnical Service Bulletin	OCTOBER, 2022	Elantra (CN7, CN7a) Elantra Hybrid (CN7 HEV)
SUBJECT:	ICU (INTEGRATED CENTRAL ( (SERVICE	CONTROL UNIT) S CAMPAIGN T8T)	OFTWARE UPDATE

This TSB supersedes TSB# 22-01-076H to include ROM ID 4.01 for Elantra (CN7a).

### **\*** IMPORTANT

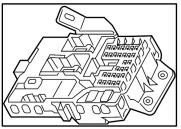
Dealers must perform this service campaign on all affected vehicles prior to customer retail delivery and whenever an affected vehicle is in the shop for any maintenance or repair.

Access the "Vehicle Information" screen (VIS) via WEBDCS to identify open campaigns.

**Description:** Some 2021 ~ 2022MY Elantra (CN7, CN7a, CN7 HEV) vehicles may exhibit a condition with multiple warning lights displayed on the instrument cluster and various symptoms; multiple DTCs (Diagnostic Trouble Code), reduction in power steering assist, and not able to shift out of Park. Possible DTCs set are:

- C181287 CAN Time-out Gateway
- C181208 CAN Time-out Gateway
- C180581 LKAS CAN Signal Error
- C181887 CAN Time-out BCA
- B109052 TCU Missing Error

This bulletin provides the service procedure to update the ICU (Integrated Central Control Unit) software to resolve the conditions stated above.



#### Applicable Vehicles:

Certain 2021MY Elantra (CN7) vehicles produced from 9/12/2020 – 6/01/2021\*. Certain 2021~22MY Elantra (CN7a) vehicles produced from 9/25/2020 – 9/27/2021\*\*. Certain 2021~22MY Elantra Hybrid (CN7 HEV) vehicles produced from 12/15/2020 – 8/11/2021\*.

\*VIN starting with KMH \*\*VIN starting with 5NP

Circulate To: General Manager, Service Manager, Parts Manager, Warranty Manager, Service Advisors, Technicians, Body Shop Manager, Fleet Repair

#### Warranty Information:

MODEL	OP. CODE	OPERATION	OP. TIME	CAUSAL PART	NATURE	CAUSE
Elantra/ Elantra Hybrid (CN7/CN7 HEV)	20D073R0	ICU Upgrade	0.3 M/H	91951-AA010 (CN7) 91950-BY110 (CN7 HEV)	114	ZZ3
Elantra (CN7a)	20D073R1	ICU Upgrade	0.3 M/H	91950-AB060	114	ZZ3

#### Note 1: Submit claim on Campaign Claim Entry Screen

**Note 2:** If a part that is not covered by this campaign is found in need of replacement while performing this campaign and the affected part is still under warranty, submit a separate claim using the same repair order. If the affected part is out of warranty, submit a Prior Approval request for goodwill consideration prior to performing the work.

### ICU SOFTWARE UPDATE PROCEDURE

## NOTICE

#### Check if the vehicle's software version is affected:

• Check the current version of the ICU ROM ID and compare it to the ROM ID information table listed below before attempting to perform the software update.

## NOTICE

#### You must initially perform the GDS ICU Update in Auto Mode.

- Refer to the TSB **15-GI-001** for the tablet-based Mobile GDS ECU update procedures.
- If the ICU update starts but then fails in Auto Mode, perform the update in Manual Mode to recover. Go to page 9 to complete the update in Manual Mode.

## NOTICE

• In the ECU Upgrade screen, select ICU as the system to update.

**GDS INFORMATION:** 

EVENT INFORMATION			
MODEL	EVENT DESCRIPTION		
Elantra (CN7)	"851.CN7 ICU LOGIC IMPROVEMENT"		
Elantra (CN7a)	"852.CN7a ICU LOGIC IMPROVEMENT"		
Elantra Hybrid (CN7 HEV)	"864.CN7 HEV ICU LOGIC IMPROVEMENT"		

#### **ROM ID INFORMATION TABLE:**

MODEL SYSTEM ICU		ICU P/N	ROM ID	
WODEL	STOTEM		OLD	NEW
			1.02	
Elantra		91950-AA010 ~ 91950-AA990	1.03	1.06
(CN7)		91951-AA010 ~ 91951-AA590	1.04	1.00
			1.05	
Elantra		91950-AB000 ~ 91950-AB060	4.01	
(CN7a)	ICU		4.02	4.04
(CN/a)			4.03	
Elantra			3.03	
		91950-BY010 ~91950-BY240	3.04	3.07
Hybrid (CN7 HEV)		91930-D1010 291930-D1240	3.05	3.07
			3.06	

#### MANUAL MODE PASSWORD INFORMATION TABLE:

Event #	MENU	PASSWORD
#851 – CN7	CN7 ICU 91950/91951-AAXXX	5051
#852 – CN7a	CN7a ICU 91950 - ABXXX	5060
#864 – CN7 HEV	CN7 HEV ICU 91950-BY010~BY240	5019

#### SERVICE PROCEDURE:

# 

#### **Cautions During Control Unit Upgrade**

- Confirm the vehicle's battery is above 12 volts. If the vehicle has been in storage for days, run the engine to assure an adequate battery charge state for reliable upgrade results.
- Turn off all lamps (Do not leave head lamp switch in auto mode) and all accessories (heater, A/C, blower, radio, seat warmer, defroster, etc.); do not allow the battery to be discharged during upgrade.
- Perform upgrade with the ignition switch in the ON position.
- Be careful not to disconnect any cables connected to the vehicle or scan tool during upgrade.
- Do not start the engine during upgrade.
- Do not turn off the ignition switch during upgrade.
- Do not touch the systems buttons (like 'BACK', 'HOME', 'etc.') while performing upgrade.

#### CONTROL UNIT UPGRADE PROCEDURE USING THE GDS-Mobile

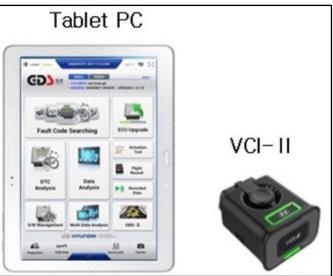
#### 1. GDS (Global Diagnostic System)-Mobile INSTALLATION PROCEDURE

 Connect the VCI-II into the vehicle's DLC connector under the driver side instrument panel and check to turn the VCI-II on.

> Before starting the update, make certain that the battery of the Table PC is sufficiently charged.

# NOTICE

ECU upgrade function on GDS-Mobile is basically operating in wireless communication and Wi-Fi direct. Also, it is possible to be performing via USB cable between Tablet PC and VCI-II.



# NOTICE

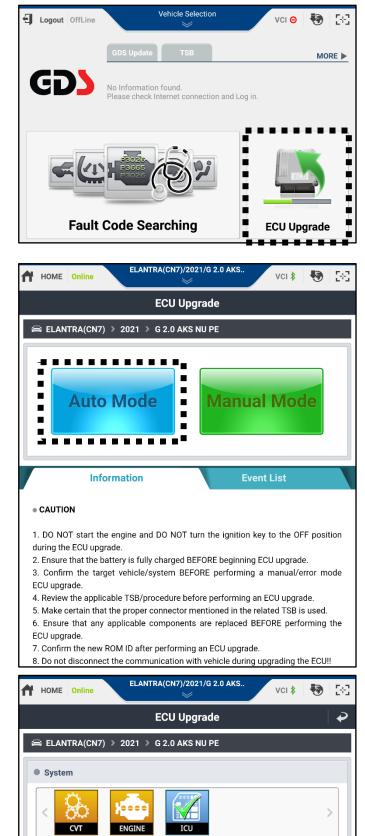
You must initially perform GDS-M ICU Update in Auto Mode. If the ICU Update starts but then fails in Auto Mode, perform the update in Manual Mode to recover.

#### SUBJECT:

#### ICU (INTEGRATED CENTRAL CONTROL UNIT) SOFTWARE UPDATE (SERVICE CAMPAIGN T8T)

#### 2. AUTOMATIC UPGRADE PROCEDURE USING THE GDS-MOBILE

2. Select ECU Upgrade on the initial screen after entering the vehicle information and select Auto Mode.



3. Select ICU system.

Event Group

0

851.CN7 ICU LOGIC IMPROVEMENT

Previous

4. Select **ID Check** and GDS will read the current ROM ID in vehicle and check the newest upgrade event.

## NOTICE

Check the current version of the ICU ROM ID and compare it to the ROM ID Information Table before attempting to perform the software update. HOME Online vci ి 58 ECU Upgrade  $\mathbf{D}$ 📾 ELANTRA(CN7) 🕨 2021 🔍 G 2.0 AKS NU PE System CVT ENGINE ROM ID Currently in Vehicle 102 ID Check Latest Update 106 • Event Group 851.CN7 ICU LOGIC IMPROVEMENT 0 Previous Upgrade • ROM ID Currently in Vehicle 102 **ID Check** Latest Update 106

ELANTRA(CN7)/2021/G 2.0 AKS.

5. Select **Upgrade** after confirming correct Event is selected.

CN7: 851.CN7 ICU LOGIC IMPROVEMENT

**CN7a:** 852.CN7a ICU LOGIC IMPROVEMENT

CN7 HEV: 864.CN7 HEV ICU LOGIC IMPROVEMENT

6. The vehicle battery voltage is checked to make sure it is at least 12 voltages to assure reliable upgrade results. Click OK if the results indicate voltage is ok.

# NOTICE

If battery voltage is below 12 voltages as below, click BACK and then run the engine to assure an adequate battery charge state for reliable upgrade results.



TSB

7. Upgrade (1/2) will begin, and the progress of the upgrade will appear on the bar graph.

Upgrade (1/2) will occur until 100% is reached on the bar graph.

HOME Online	ELANTRA(CN7)/2021/G 2.0 AKS	vci 💲 😽	5-3	
	ECU Upgrade			
📾 ELANTRA(CN7) 🔉 :	2021 > G 2.0 AKS NU PE			
851.CN7 ICU LOGIC IN	<b>//PROVEMENT</b>			
	rrently running on Bluetooth. o disconnect the B/T while ECU upgra	ıde.		
	6%			
	ECU Upgrading(1/2)			
ECU	is in the process of being upgrade Please wait a few minute.	d.		
ROM ID				
Currently in Vehicle	102			
Latest Update	106			
	ОК			

8. Upgrade (2/2) will begin, and the progress of the upgrade will appear in the bar graph.

Upgrade (2/2) will occur until 100% is reached on the bar graph.

When upgrade reaches 100%, follow GDS instructions to "Turn IG off for 10 seconds and then back on. Click the OK button to continue."

HOME Online	ELANTRA(CN7)/2021/G 2.0 AKS	vci \$	<b>1</b>			
	ECU Upgrade		-   ₽			
📾 ELANTRA(CN7) 🔉	2021 > G 2.0 AKS NU PE					
851.CN7 ICU LOGIC II	MPROVEMENT					
		3 <sup>00</sup>	):04			
,	100% ECU Upgrading(2/2)					
then ba	Turn IG off for 10 seconds and tock on. Click the OK button to c					
OROM ID						
Currently in Vehicle	102					
Latest Update	106					
	ОК					

#### SUBJECT:

#### ICU (INTEGRATED CENTRAL CONTROL UNIT) SOFTWARE UPDATE (SERVICE CAMPAIGN T8T)

9. Click **OK** on the final screen, which indicates upgrade is complete.



# 10. After upgrade, remove power connector of indoor fuse box, and reconnect it after 5 seconds

Check if any incidental Diagnostic Trouble Codes (DTC) have been created by the upgrade and clear the DTC(s) present.

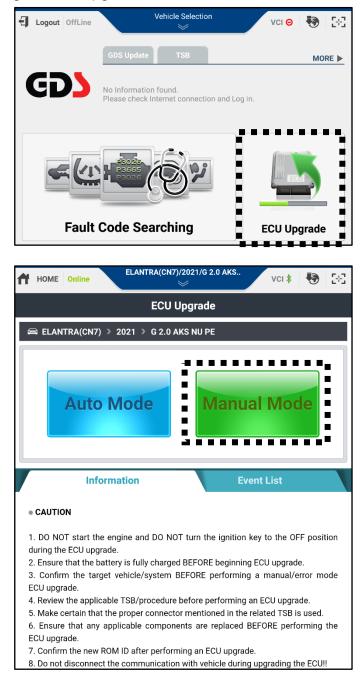
Start the engine to confirm proper operation of the vehicle.



#### 3. MANUAL UPGRADE PROCEDURE USING THE GDS-MOBILE

#### NOTE:

- The manual upgrade should be performed only when the automatic upgrade fails.
- If automatic upgrade fails, turn the ignition key off for about 10 seconds, place it back in the on position to reset the control unit before performing manual upgrade.
- 11. Select ECU Upgrade on the initial screen after entering the vehicle information and select Manual Mode.



12. Select ICU system.

13. Check that the newest event with reference to the above ROM ID Information Table is selected and tab Upgrade.

CN7: 851.CN7 ICU LOGIC IMPROVEMENT

**CN7a:** 852.CN7a ICU LOGIC IMPROVEMENT

CN7 HEV: 864.CN7 HEV ICU LOGIC IMPROVEMENT

ECU Upgrade 🕹 🌳
📾 ELANTRA(CN7) > 2021 > G 2.0 AKS NU PE
• System
< CVT ENGINE ICU
HOME Online ELANTRA(CN7)/2021/G 2.0 AKS VCI 💲 😽 🔀
ECU Upgrade 🏼
📾 ELANTRA(CN7) > 2021 > G 2.0 AKS NU PE
System
CVT ENGINE ICU
Event Group TSB
B 1.CN7 ICU LOGIC IMPROVEMENT
CN7 ICU 91950/51 - AAXXX
211.CN7 ICU (INTEGRATED CENTRAL CONTROL UNIT) UPGRADE
Latest Update 106
Previous Upgrade

14. Enter the password from the below table then touch OK.

#### #851 - CN7

MENU	PASSWORD
CN7 ICU 91950/51 -AAXXX	5051

#### #852 - CN7a

MENU	PASSWORD
CN7a ICU 91950 - ABXXX	5060

#### #864 - CN7 HEV

MENU	PASSWORD
CN7 HEV ICU 91950-BY010~BY240	5019

15. The vehicle battery voltage is checked to make sure it is at least 12 volts to ensure reliable upgrade results. Click OK if the results indicate voltage is OK.

## NOTICE

If battery voltage is below 12 voltages as below, click BACK and then run the engine to assure an adequate battery charge state for reliable upgrade results.

16. Upgrade (1/2) will begin, and the progress of the upgrade will appear on the bar graph.

Upgrade (1/2) will occur until 100% is reached on the bar graph.

Notice		2
	Warning! lower Battery Voltage. BATTERY VOLTAGE: 11.5	
	ОК	

HOME Online	ELANTRA(CN7)/2021/G 2.0 AKS	vci \$	🖲 🐼					
	ECU Upgrade		-   ₽					
ELANTRA(CN7) > 2	2021							
The ECU upgrade is cu	rrently running on Bluetooth. o disconnect the B/T while ECU up	ograde.						
	17%		- 1					
ECU Upgrading(1/2)								
ECU	is in the process of being upgr Please wait a few minute.	aded.						
ROM ID								
Currently in Vehicle								
Latest Update	106							
	ОК							

17. Upgrade (2/2) will begin, and the progress of the upgrade will appear in the bar graph.

Upgrade (2/2) will occur until 100% is reached on the bar graph.

When upgrade reaches 100%, follow GDS instructions to "Turn IG off for 10 seconds and then back on. Click the OK button to continue."

18. Click **OK** on the final screen, which indicates upgrade is complete.



Check the ICU ROM ID and compare it to the ROM ID Information Table to confirm latest ROM ID was updated.

			$\gg$		vci 🖇		23
			ECU Upgrade				•
😂 ELA	NTRA(CN7) >	2021 > 0	G 2.0 AKS NU PE				
851	.CN7 ICU LOGIC	IMPROVEM	ENT				
					3 <sup>00</sup>	0:02	2
			100%				
•ROM		Turn IG	Upgrading( off for 10 seco lick the OK but	nds and			
Curr	ently in Vehicle						
	st Update	106					
			ОК				
	ļ						
ном	E Online		A(CN7)/2021/G 2		vci \$	•	5
<b>ү</b> номі	E Online		ECU Upgrade		VCI \$	<b>1</b> 3	5
æ ELA	NTRA(CN7) →	2021 > (	ECU Upgrade 3 2.0 AKS NU PE		VCI \$	<b>1</b> 3	•
ڪ ELA		2021 > (	ECU Upgrade 3 2.0 AKS NU PE		vci \$	<b>1</b>	•
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i⊂ ELA	NTRA(CN7) →	2021 > (	ECU Upgrade		voi \$	10	4
i⊂ ELA	NTRA(CN7) > .CN7 ICU LOGIC	2021 > ( IMPROVEM	ECU Upgrade 5 2.0 AKS NU PE ENT -UXS Succeed			1	2 
i⊂ ELA	NTRA(CN7) → .CN7 ICU LOGIC The EC	2021 > ( IMPROVEM	ECU Upgrade			<b>1</b>	•
ROM	NTRA(CN7) → .CN7 ICU LOGIC The EC	2021 > ( IMPROVEM	ECU Upgrade 5 2.0 AKS NU PE ENT -UXS Succeed				•
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ROM Curre Late	NTRA(CN7) → CN7 ICU LOGIC The EC ID ently in Vehicle	2021 > ( IMPROVEM U Upgrad	ECU Upgrade				

#### SUBJECT:

# ICU (INTEGRATED CENTRAL CONTROL UNIT) SOFTWARE UPDATE (SERVICE CAMPAIGN T8T)

# 19. After upgrade, remove power connector of indoor fuse box, and reconnect it after 5 seconds

Check if any incidental Diagnostic Trouble Codes (DTC) have been created by the upgrade and clear the DTC(s) present.

Start the engine to confirm proper operation of the vehicle.

