SUBJECT: ECM & CLUSTER UPDATE – ENGINE MONITORING LOGIC PRODUCT IMPROVEMENT (SERVICE CAMPAIGN 953)

This TSB supersedes TSB# 18-01-027 and modifies the list of applicable vehicles.

★ **IMPORTANT**

*** Retail Vehicles ***

Dealers must perform this Campaign on all affected vehicles whenever an affected vehicle is in the shop for any maintenance or repair.

When a vehicle arrives at the Service Department, access Hyundai Motor America's "Warranty Vehicle Information" screen via WEBDCS to identify open Campaigns.

Description: Hyundai is conducting a product improvement campaign to enhance the knock sensor software to detect abnormal engine bearing noise before potentially severe engine damage occurs. If abnormal engine bearing noise is detected, the Malfunction Indicator Lamp (MIL) will blink continuously, a chime will sound, and the vehicle will be placed in Limp Home Mode allowing the customer to drive to the nearest Hyundai dealer for diagnosis and repair. In addition, DTC P132600 will be recorded in the ECM. The vehicle can continue to be operated for a limited time in Limp Home Mode, but it will accelerate slower and have a reduced maximum speed. Engine RPMs will be limited to approximately 1800-2000 RPM.

Applicable Vehicles:
Certain 2015 MY Sonata (LF) vehicles with 2.4L and 2.0L Turbo engines
Certain 2015 MY Santa Fe Sport (AN) vehicles with 2.4L and 2.0L Turbo engines

GDS Information:
ROM ID Information Table - Engine ECM

Model / Engine	Event #	Part Number	OLD ROM ID	NEW ROM ID
Sonata (LF) 2.4L (ULEV)	480	39111-2GGK5	LFAFNC4ER86A LFAFNC4ER86B LFAFNC4ER86C LFAFNC4ER87A LFAFNC4ER87B LFAFNC4ER88A LFAFNC4ERA51 LFAFNC4ERA53 LFAFNC4ERC0A	LFAFNC4ERC0K

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

Sonata (LF) 2.4L (ULEV)	480	39111-2GGK0	LFAFNC4EM86A LFAFNC4EM86B LFAFNC4EM86C LFAFNC4EM87A LFAFNC4EM87B LFAFNC4EM88A LFAFNC4EMA51 LFAFNC4EMA53 LFAFNC4EMC0A	LFAFNC4EMC0K
Sonata (LF) 2.4L (SULEV)	480	39111-2GGL5	LFAFNS4ER86A LFAFNS4ER86B LFAFNS4ER86C LFAFNS4ER87A LFAFNS4ER87B LFAFNS4ER88A LFAFNS4ERA51 LFAFNS4ERA53 LFAFNS4ERC0A	LFAFNS4ERC0K
	480	39111-2GGL0	LFAFNS4EM86A LFAFNS4EM86B LFAFNS4EM86C LFAFNS4EM87A LFAFNS4EM87B LFAFNS4EM88A LFAFNS4EMA51 LFAFNS4EMA53 LFAFNS4EMC0A	LFAFNS4EMC0K
Sonata (LF) 2.0T (ULEV)	480	39111-2GTE5	LFAFNC0ER87A LFAFNC0ER87B LFAFNC0ER88A	LFAFNC0ER88K
Santa Fe Sport (AN) 2.4L (ULEV)	493	39100-2GAE2 39100-2GAE7 39110-2GAE2	BFC4RH5A BFC4RH5B	BFC4RH6A
	493	39100-2GAG2 39100-2GAG7 39110-2GAG2	BFC4MH5A BFC4MH5B	BFC4MH6A
Santa Fe Sport (AN) 2.0T (ULEV)	493	39100-2GBB2 39100-2GBC2	BFC0RH5A	BFC0RH6A
	493	39100-2GBD2 39100-2GBE2	BFC0MH5A	BFC0MH6A

GDS Information:
ROM ID Information Table – Cluster

Model	Event # / Cluster Type	Part Number	OLD ROM ID	NEW ROM ID
Sonata (LF)	EVENT #481 STANDARD CLUSTER	94001-C2000	94001-C2000_A03	94001-C2000_103
			94001-C2000_110	94001-C2000_104
		94021-C2000	94021-C2000_A02	94021-C2000_103
			94021-C2000_100	94021-C2000_104
	EVENT #482 SUPER VISION CLUSTER	94011-C2000	94011-C2000_101 94011-C2000_102	94011-C2000_103
		94031-C2000	94031-C2000_100 94031-C2000_101	94031-C2000_103
Santa Fe Sport (AN)	EVENT #494 STANDARD CLUSTER	94001-4Z300 94001-4Z310 94001-4Z320 94002-4Z300 94002-4Z310 94002-4Z320	94001-4Z300_200 94001-4Z310_200 94001-4Z320_200 94002-4Z300_200 94002-4Z310_200 94002-4Z320_200 94001-4Z300_201 94001-4Z310_201 94001-4Z320_201 94002-4Z300_201 94002-4Z310_201 94002-4Z320_201	9400*-4Z3*0_204
	EVENT #495 SUPER VISION CLUSTER	94011-4Z300 94011-4Z310 94011-4Z320 94012-4Z300 94012-4Z310 94012-4Z320	94011-4Z300_201 94011-4Z310_201 94011-4Z320_201 94012-4Z300_201 94012-4Z310_201 94012-4Z320_201 94011-4Z300_202 94011-4Z310_202 94011-4Z320_202 94012-4Z300_202 94012-4Z310_202 94012-4Z320_202 94011-4Z300_203 94011-4Z310_203 94011-4Z320_203 94012-4Z300_203 94012-4Z310_203 94012-4Z320_203	9401*-4Z3*0_204

Warranty Information:

Model	Op. Code	Operation	Op. Time	Causal Part No.	Nature Code	Cause Code
SONATA (LF)	80CA08R0	ECM & CLUSTER UPDATE	0.5 M/H	39111-2GGK5	E13	ZZ3
SANTA FE SPORT (AN)	80CA08R4	ECM & CLUSTER UPDATE	0.5 M/H	39100-2GAE2	E13	ZZ3

NOTE 1: Submit Claim on Campaign Claim Entry Screen
NOTE 2: If a part 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(s) are out of warranty, request a Prior Authorization # for goodwill consideration prior to completing the Campaign.
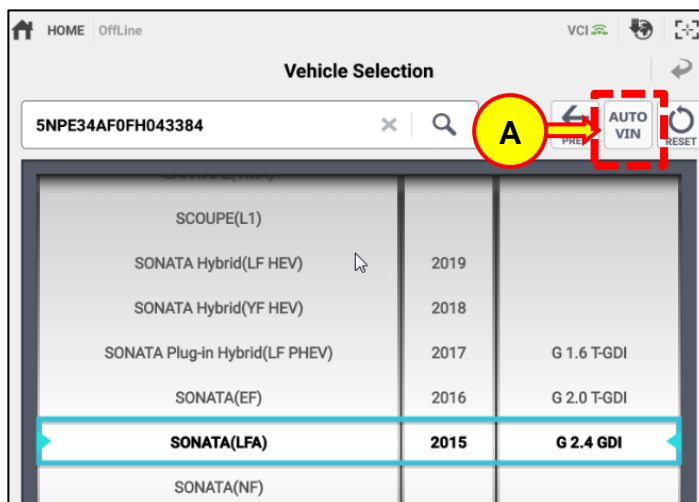
Service Procedure:

NOTICE

- **Ensure BOTH the Engine ECM and Cluster are updated to complete this TSB.**
- **Check the ROM ID of the vehicle's ECM and cluster and reference the ROM ID Information Table before attempting any updates.**
- **Ensure the GDS Mobile and the vehicle's battery are fully charged. Run the engine to charge the battery if necessary before attempting any updates.**
- **Turn off all lamps and do not leave the head lamp switch in auto mode. Turn off all accessories (including heater, A/C, blower, radio, seat warmer, defroster, etc.). Do not allow the battery to be discharged during update.**
- **Perform update with the ignition switch in the ON position.**
- **Be careful not to disconnect any cables connected to the vehicle or scan tool during update.**
- **Do not start the engine during update.**
- **Do not turn off the ignition switch during update unless specifically directed by the GDS Mobile.**

1. Connect the VCI-II into the vehicle's DLC connector under the driver side instrument panel.
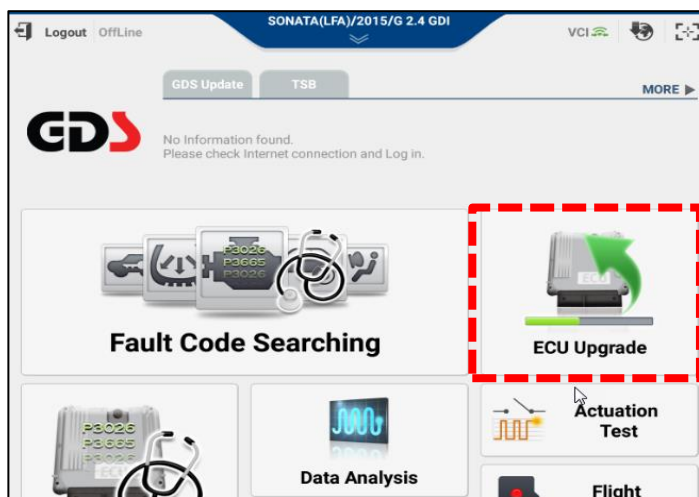

OBD-II

DO NOT set up the Trigger Module

2. **With the ignition in the ON position**, open the GDS app on the GDS Mobile. Confirm GDS communication with the vehicle and use the **AUTO VIN** button (A) to detect the vehicle's VIN.

3. Select **ECU Upgrade** from the GDS main screen and then select **Auto Mode**.

NOTICE

Do not update using Manual Mode unless the Auto Mode fails.

4. Under **System**, select **Engine** to update the engine ECM. Then select **ID Check** to search for available updates.
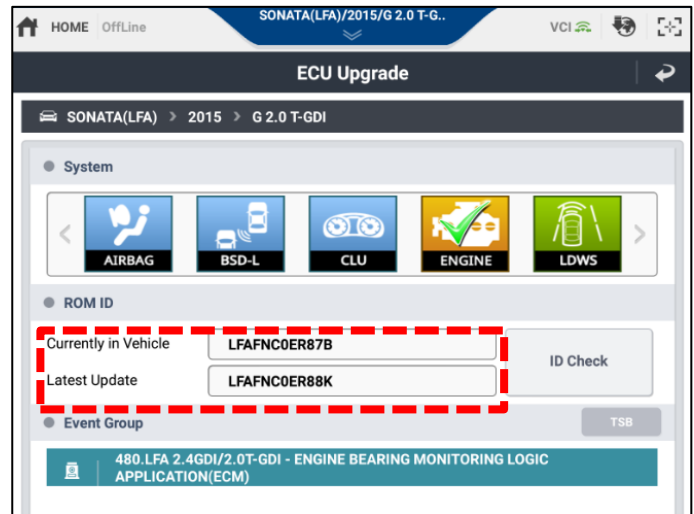
5. Confirm the ROM IDs match those in the ROM Information table for the vehicle specification. Select the event under **Event Group** and then select **Upgrade** to start the update.

The update is performed in two parts. Follow the prompts on the GDS to complete the update.
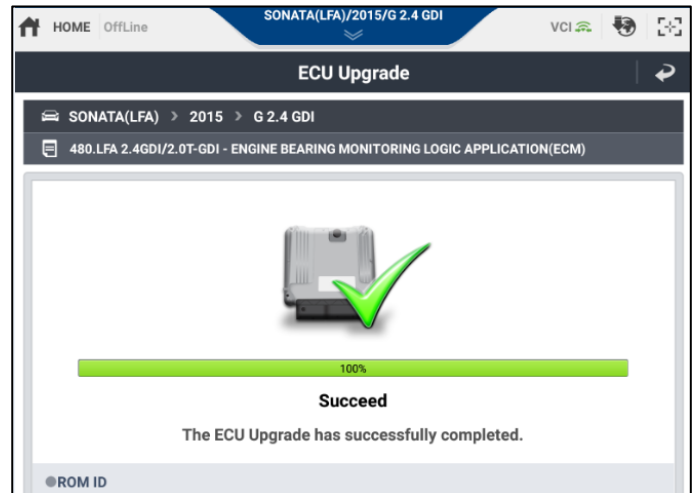
NOTICE

Do not touch the GDS buttons ('Back', 'Home', etc) while performing the update. Do not start the engine.

6. Once the update is performed successfully, select **OK** to continue. When prompted to run a fault code search, select **Yes** to check for DTCs. Clear all DTCs if any are stored.

NOTICE

Various warning messages may appear in the instrument cluster during the update. Clear any DTCs after the update.
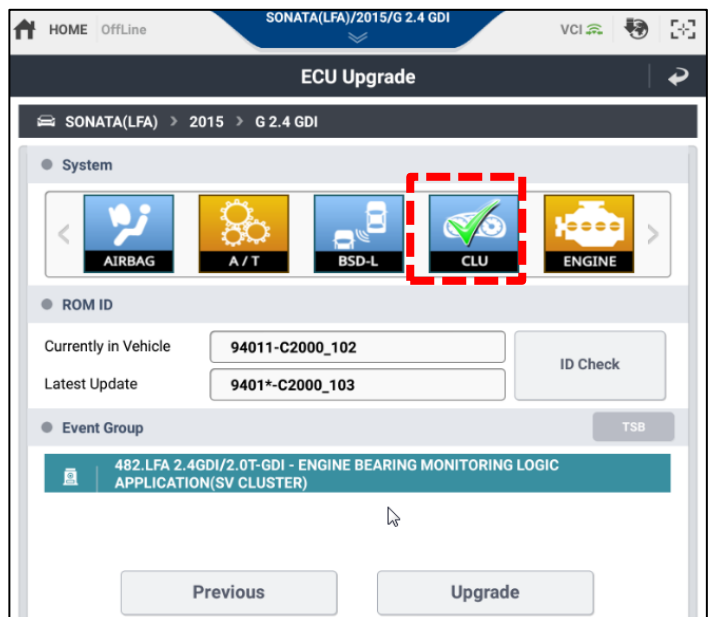
7. Next update the cluster software starting with the process outlined in Step 3. Under **System** in the **ECU Upgrade** menu, select **CLU** to update the cluster.

NOTICE

Ensure BOTH the Engine ECM and Cluster are updated to complete this TSB.

Do not update using Manual Mode unless the Auto Mode fails.

8. When both the engine ECM and cluster updates are completed, start the engine to confirm proper operation.

9. Check for any DTCs and perform the appropriate diagnostic service. Ensure no warning lights are present to complete the procedure.

Manual Update Procedure:

NOTICE

The manual update should be performed only when the automatic update fails.

If automatic update fails, turn the ignition off for about 10 seconds and then place it back in the on position to reset the control unit before performing a manual update.

1. Select **ECU Upgrade** from the GDS main screen and then select **Manual Mode**.
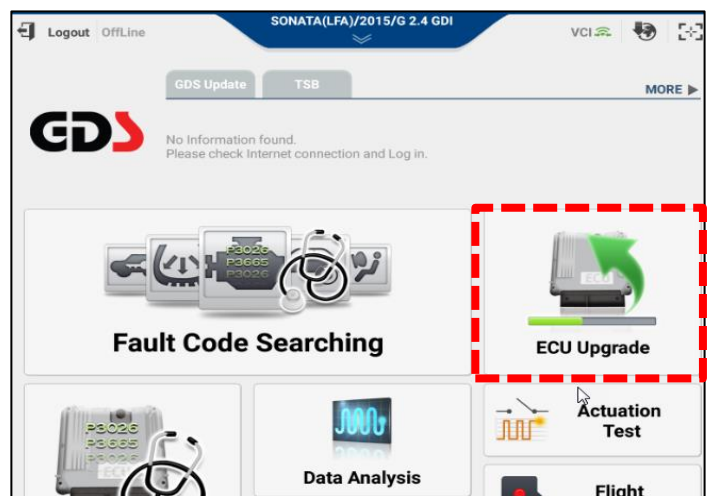
NOTICE

Do not update using Manual Mode unless the Auto Mode fails.

Do not touch the GDS buttons ('Back', 'Home', etc) while performing the update.

Do not start the engine.

Various warning messages may appear in the instrument cluster during the update. Clear any DTCs after the update.

2. Under **System**, select **Engine** to update the engine ECM and **CLU** to update the cluster. Select the appropriate update by referencing the ROM ID Information and password tables. Select **Upgrade** and follow the prompts on the GDS to complete the update.

NOTICE

Ensure the correct update is performed by using the ROM ID Info tables. Any attempt to update using an incorrect ROM ID may cause the ECU to be inoperative.

3. When both the engine ECM and cluster updates are completed, start the engine to confirm proper operation.

4. Check for any DTCs and perform the appropriate diagnostic service. Ensure no warning lights are present to complete the procedure.

Manual Mode Update Passwords:

Engine ECM Update

Model	Update Name	Password
Sonata (LF)	LFA 2.4GDI 6AT -IMMO 39111-2GGK0	1120
	LFA 2.4GDI 6AT -IMMO 39111-2GGL0	1121
	LFA 2.4GDI 6AT +IMMO 39111-2GGK5	1122
	LFA 2.4GDI 6AT +IMMO 39111-2GGL5	1123
	LFA 2.0T-GDI 6AT +IMMO 39111-2GTE5	1125
Santa Fe Sport (AN)	AN 2.4GDI -IMMO 39100-2GAG2/7, 39110-2GAG2	1022
	AN 2.4GDI +IMMO 39100-2GAE2/7, 39110-2GAE2	1023
	AN 2.0T-GDI -IMMO 39100-2GBD2/E2	0222
	AN 2.0T-GDI +IMMO 39100-2GBB2/C2	0223

Cluster Update

Model	Update Name	Password
Sonata (LF)	LFA STD CLUSTER(BASE) 94001-C2000 (ROM ID : 94001-C2000_A03)	2000
	LFA STD CLUSTER(BASE) 94001-C2000 (ROM ID : 94001-C2000_110)	2001
	LFA STD CLUSTER(SPORTS PACK) 94021-C2000 (ROM ID : 94021-C2000_A02)	2002

	LFA STD CLUSTER(SPORTS PACK) 94021-C2000 (ROM ID : 94021-C2000_100)	2003
	LFA SV CLUSTER(BASE) 94011-C2000	2004
	LFA SV CLUSTER(SPORTS PACK) 94031-C2000	2005
Santa Fe Sport (AN)	AN STD CLUSTER 94001/2-4Z300/10/20	4320
	AN SV CLUSTER 94011/2-4Z300/10/20(ROM ID : 201)	4321
	AN SV CLUSTER 94011/2-4Z300/10/20(ROM ID : 202)	4322
	AN SV CLUSTER 94011/2-4Z300/10/20(ROM ID : 203)	4323