



HYUNDAI

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Technical Service Bulletin

GROUP

CAMPAIGN

NUMBER

16-01-011

DATE

MARCH 2016

MODEL(S)

Elantra (MD/UD)

SUBJECT:

**YAW RATE/"G" SENSOR INSPECTION AND HECU UPDATE
(RECALL CAMPAIGN 137)**

★ IMPORTANT

*** Retail Vehicles ***

Dealers must perform this Recall Campaign 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:

On certain 2011 to 2012 model year Elantras (MD/UD), the Yaw Rate/"G" sensor may send a signal that may result in one or more of the following:

1. Inadvertent ESC system intervention,
2. Illumination of the "ESC" indicator lamp in the instrument cluster.
3. Diagnostic codes C1282 and/or C1283 (for the yaw sensor) stored in the ESC Control Module.

ESC system intervention may include inadvertent brake application to one or more wheels and/or reduced engine torque, both of which can increase the risk of a crash. This bulletin describes the procedure to check for diagnostic codes, replace the Yaw/"G" sensor if necessary, and update the hydraulic unit ECU (HECU) software.



Applicable Vehicles: Certain 2011 ~ 2012 Elantras (MD/UD)

Part Information:

Part Name	Part Number
Yaw Rate and Lateral G Sensor	
	95690-3V100QQH

Warranty Information:

Op Code	Operation	Op Time
51C017R0	Yaw Rate/"G" Sensor Replacement and HECU Update	0.7 M/H
51C017R1	HECU Update	0.3 M/H

NOTE 1: Submit Claim on Campaign Claim Entry Screen.

NOTE 2: If DTCs C1282 or C1283 are found during the initial DTC check, attach a GDS screen capture of the Fault Code Search screen to the Repair Order, clearly showing the VIN and DTCs.

NOTE 3: If DTC C1285 is found after the HECU Update, attach a GDS screen capture of the Fault Code Search screen to the Repair Order, clearly showing the VIN and DTCs.

NOTE 4: If a part is found in need of replacement (other than the Yaw Rate/"G" Sensor) while performing Recall 137 and the affected part is still under warranty, please 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.

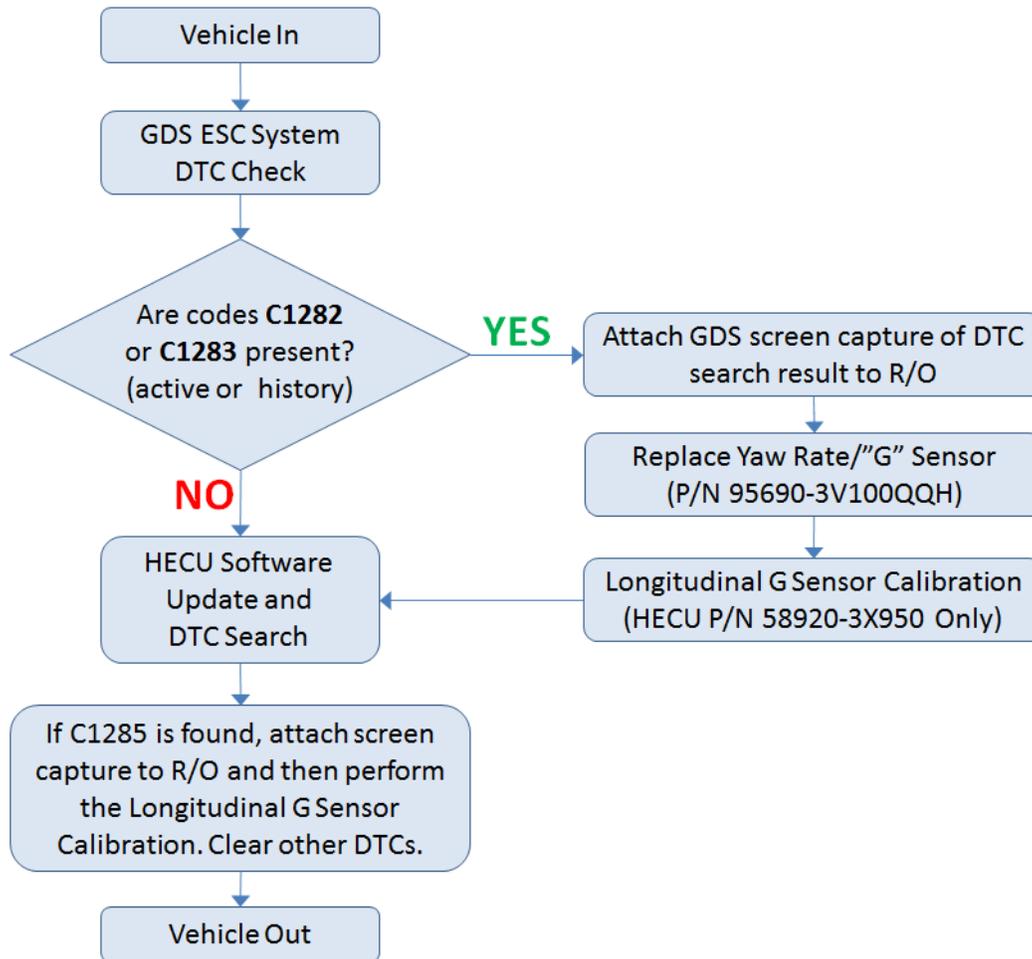
NOTICE

Update the GDS/GDS Mobile to the latest software version prior to performing this TSB.

- Refer to the TSB 15-GI-001 for general information regarding tablet-based Mobile GDS ECU update procedures.
- Refer to the TSB 15-GI-002 for general information regarding PC-based GDS ECU update procedures.

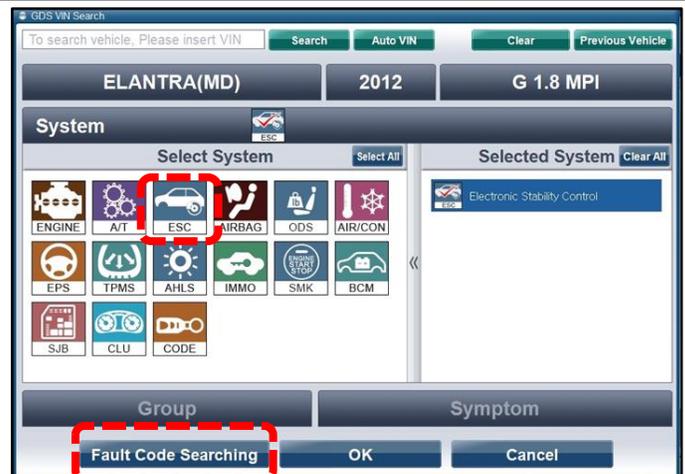
Service Procedure:

Follow the flow chart below.



DTC Check

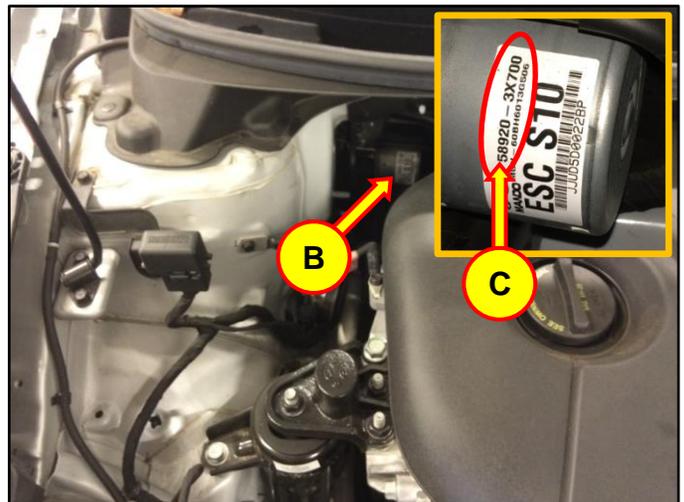
1. Connect the GDS or GDS Mobile and search for DTCs in the ESC System.



- 2a. If codes **C1282** or **C1283** are found either as active or history;
1. Attach a GDS screen capture of the Fault Code Search screen, clearly showing the VIN and the C1282 and/or C1283 DTCs found.
 2. Replace the Yaw Rate/"G" Sensor (A) according to the applicable workshop manual.
 - a. Locate the HECU (B) on the passenger side of the engine compartment and note the part number (C).
 - b. If the part number is **58920-3X950**, perform the Longitudinal G Sensor Calibration in the GDS.
 - c. If the part number is **58920-3X650** or **58920-3X700**, it is **not** necessary to perform the Longitudinal G Sensor Calibration.
 3. Perform the HECU Update procedure below.
 4. Check for DTCs.
 - a. If **C1285** is found, attach screen capture to the R/O and then perform the Longitudinal G Sensor Calibration. Clear other DTCs. The procedure is complete.
 - b. If **C1285** is NOT found, clear other DTCs. The procedure is complete.



Yaw Rate/"G" Sensor tightening torque:
 3.9 ~ 5.9 N.m (0.4 ~ 0.6 kgf.m, 2.9 ~ 4.3 ft-lb,
 34.8 ~ 51.6 in-lb)



- 2b. If codes **C1282** or **C1283** are NOT found either as active or history;
1. Perform the HECU Update procedure below.
 2. Check for DTCs.
 - a. If **C1285** is found, attach screen capture to the R/O and then perform the Longitudinal G Sensor Calibration. Clear other DTCs. The procedure is complete.
 - b. If **C1285** is NOT found, clear other DTCs. The procedure is complete.

HECU Update Procedure

GDS Information:

System Selection: **ABS/ESC**

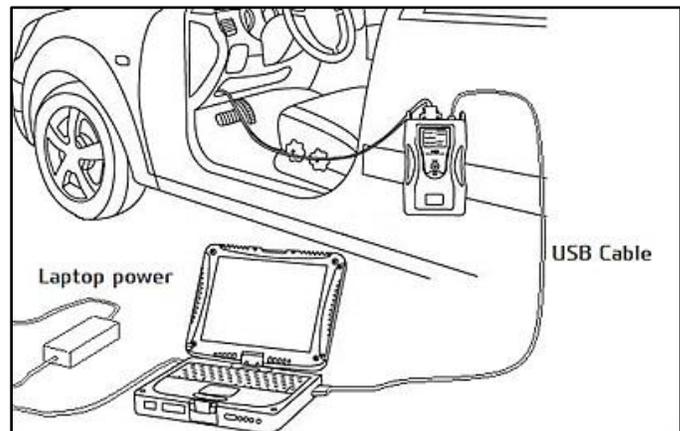
Event #	Description
400	MD/UD ESC CONTROL LOGIC IMPROVEMENT

ROM ID Information Table:

Model	System	P/N	ROM ID	
			OLD	NEW
MD/UD	ESC	58920-3X650	1.2 G52GAE1E12-2-0914	1.3 G52GAE1B11-2-6211
		58920-3X700	1.2 G52GAE1E12-2-0915	1.3 G52GAE1B11-2-6212
		58920-3X950	1.2 G52GAE1E12-2-0913	1.3 G52GAC1C10-2-5824

Refer to the **TSB 15-GI-001** and **15-GI-002** for general information regarding GDS ECU update procedures.

If using the PC-based GDS, the USB cable must be connected between the GDS and the VCI.



If using the GDS Mobile, connect the VCI-II into the vehicle's DLC connector under the driver side instrument panel.



Auto Mode Update Procedure Using PC-based GDS

NOTICE

You must initially perform GDS ECU Upgrade in Auto Mode.

- If the ECU Upgrade starts but then fails in Auto Mode, perform the upgrade in Manual Mode to recover.

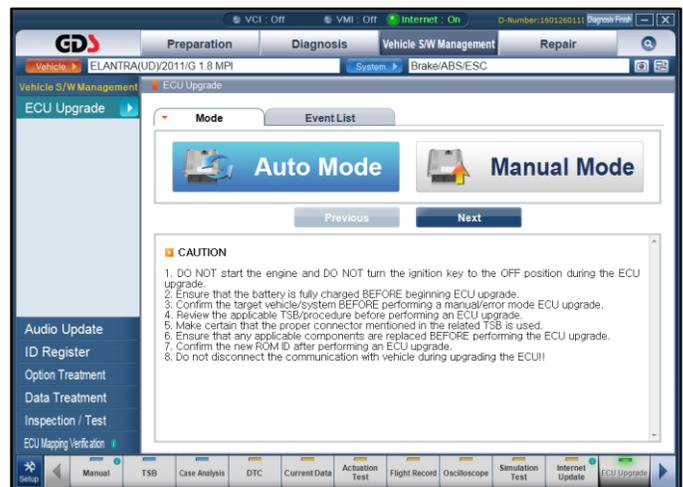
1. From the GDS home page, select **ECU Upgrade**. Enter the vehicle information manually or by clicking the **Auto VIN**.

Select **ABS/ESC** as the System Type and then click **OK**.



2. Select **Auto Mode**.

Read and follow the CAUTION statements on the GDS screen and then click **Next**.



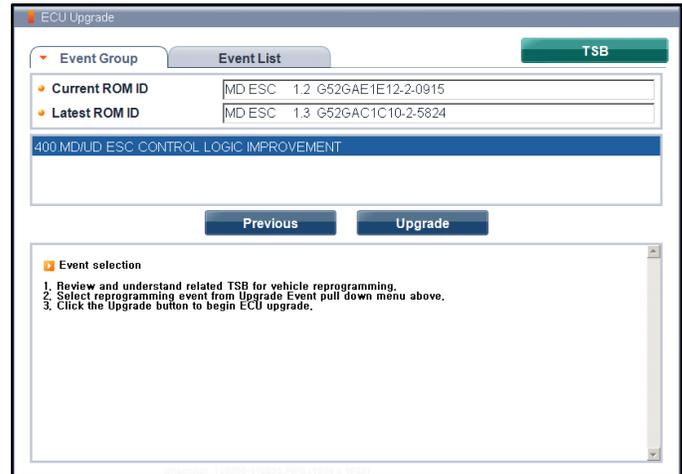
3. From the System tab, select **ABS/ESC** then click **OK**.

The GDS will read the vehicle's ROM ID.



4. After the current ROM ID is displayed, select “**400.MD/UD ESC CONTROL LOGIC IMPROVEMENT**” in the Event Group and then click **Upgrade**.

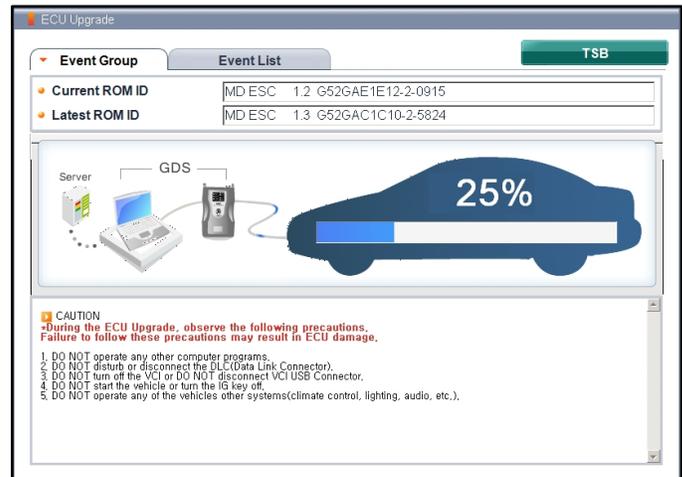
Click **OK** after the voltage check if the results indicate that it is ok. If not, select **CANCEL** and charge the vehicle battery.



5. The update will begin and the progress bar will appear. It will take a few minutes to complete the update procedure.

6. After the progress bar reaches 100%, the GDS will instruct to turn the ignition **OFF** for 10 seconds and then turn it back to the **ON** position.

Then click **OK**.



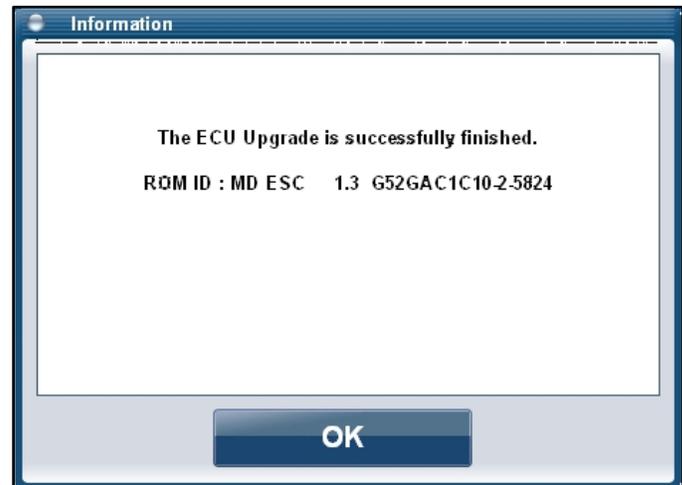
7. Click **OK** after the **ECU Upgrade is successfully finished** screen appears.

Check and clear any diagnostic trouble codes (DTC) that were created during the update.

If **C1285** is found, attach the Fault Code Search results screen capture to the R/O and then perform the Longitudinal G Sensor Calibration.

Start the engine to confirm proper operation of the vehicle.

If the update was not successful, go to the **Manual Mode Update Procedure Using PC-based GDS** below.



Manual Mode Update Procedure Using PC-based GDS

NOTICE

Manual Mode upgrade should only be performed if Auto Mode failed.

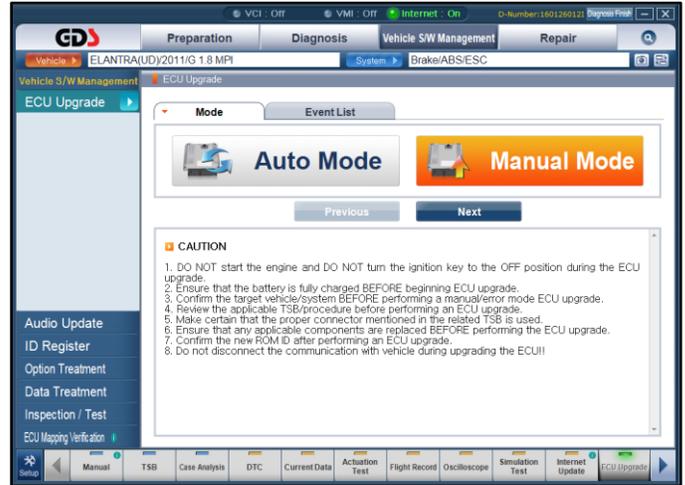
- Refer to the General Instructions found in TSB: 15-GI-002 (PC GDS).

1. If the Auto Mode fails,
Turn the ignition key OFF for about 10 seconds, then turn it back to the ON position.

From the GDS home page, select **ECU Upgrade**. Enter the vehicle information manually or by clicking the **Auto VIN**.

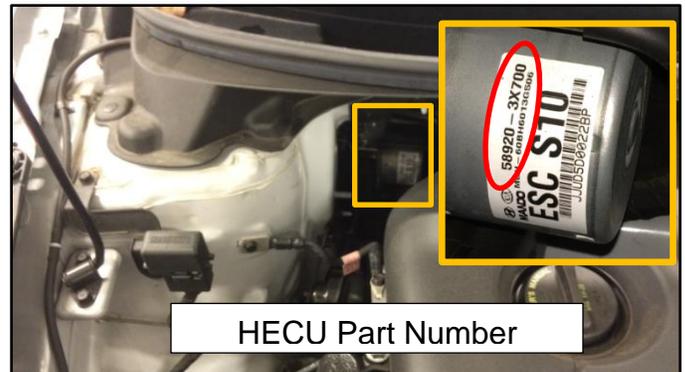
Select **ABS/ESC** as the System Type and then click **OK**.

Select **Manual Mode** within the ECU Update screen and then click **Next**.



2. Select **“400.MD/UD ESC CONTROL LOGIC IMPROVEMENT”** update event and then click **Next**.

Select the appropriate update based on the HECU part number and then click **Upgrade**.



HECU Part Number

3. Enter the appropriate password provided in the table below and then click **OK**.

Menu	Password
MD/UD ESC -HAC 58920-3X650	3650
MD/UD ESC -HAC 58920-3X700	3700
MD/UD ESC +HAC 58920-3X950	3950

4. Click **OK** after the voltage check if the results indicate that it is ok. If not, select **CANCEL** and charge the vehicle battery.

The update will begin and the progress bar will appear. It will take a few minutes to complete the update procedure.

5. After the progress bar reaches 100%, the GDS will instruct to turn the ignition **OFF** for 10 seconds and then turn it back to the **ON** position.

Then click **OK**.

6. Click **OK** after the **ECU Upgrade is successfully finished** screen appears.

Check and clear any diagnostic trouble codes (DTC) that were created during the update.

If **C1285** is found, attach the Fault Code Search results screen capture to the R/O and then perform the Longitudinal G Sensor Calibration.

Start the engine to confirm proper operation of the vehicle.

Auto Mode Update Procedure Using the GDS Mobile

NOTICE

You must initially perform GDS ECU Upgrade in Auto Mode.

- If the ECU Upgrade starts but then fails in Auto Mode, perform the upgrade in Manual Mode to recover.

1. Select **ECU Upgrade** on the initial screen after entering the vehicle information.

Select **Auto Mode**.



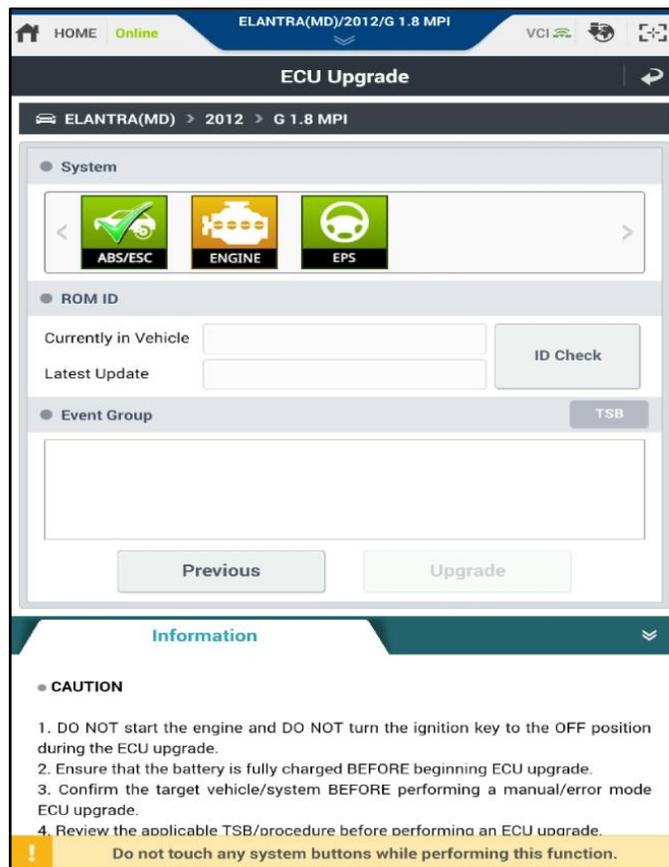
2. Select **ABS/ESC** in System.

Click **ID Check** to retrieve the ROM ID information.

Read the Information section before upgrading.

Select the update event, “**400.MD/UD ESC CONTROL LOGIC IMPROVEMENT**” and touch **Update**.

The vehicle battery voltage is checked to make sure it is at least 12 volts to assure reliable update results. Click **OK** if the results indicate voltage is OK. If not, select **CANCEL** and charge the vehicle battery.



3. Update (1/2) will begin and the progress of the update will appear on the bar graph.

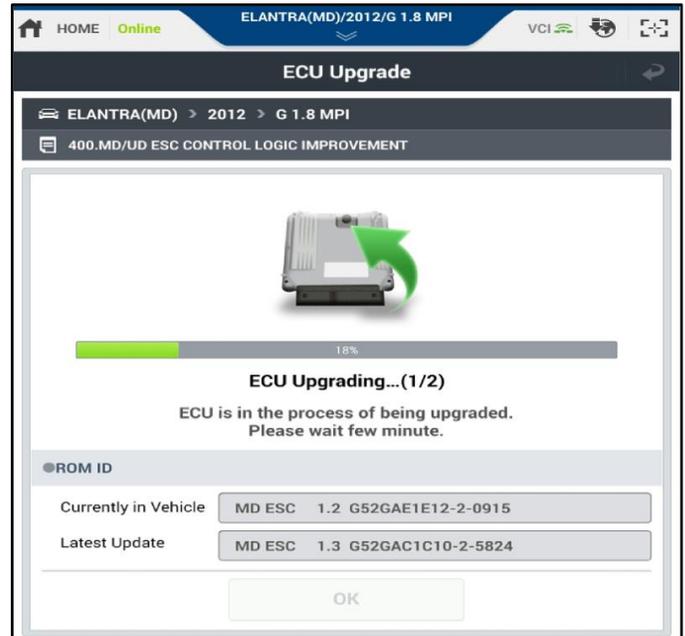
Update (1/2) will occur until 100% is reached on the bar graph.

Update (2/2) will begin and the progress of the update will appear on the bar graph.

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

Turn the ignition key **OFF** for 10 seconds, place it back in the **ON** position, and then click **OK** to continue according to information displayed on the screen.

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



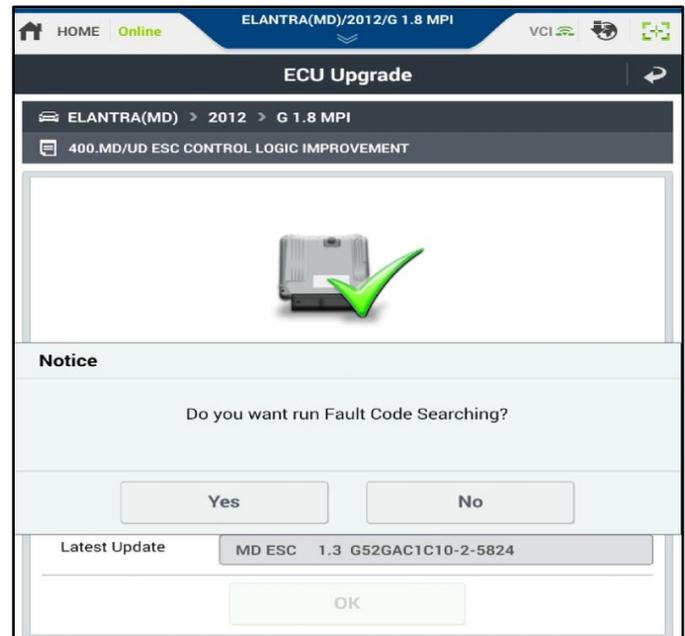
4. Click **Yes** to run Fault Code Searching.

Clear any diagnostic trouble codes (DTC) that were created during the update.

If **C1285** is found, attach the Fault Code Search results screen capture to the R/O and then perform the Longitudinal G Sensor Calibration.

Start the engine to confirm proper operation of the vehicle.

If the update was not successful, go to the **Manual Mode Update Procedure Using the GDS Mobile** below.



Manual Mode Update Procedure Using the GDS Mobile

NOTICE

Manual Mode upgrade should only be performed if Auto Mode failed.

- Refer to the General Instructions found in TSB: 15-GI-001 (GDS Mobile).

1. If the Auto Mode fails,
Turn the ignition key **OFF** for about 10 seconds, then turn it back to the **ON** position.

Select **ECU Update** on the initial screen after entering the vehicle information.

Select **Manual Mode**.

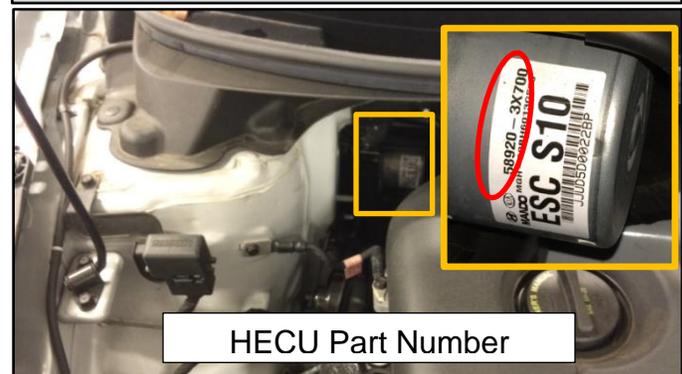
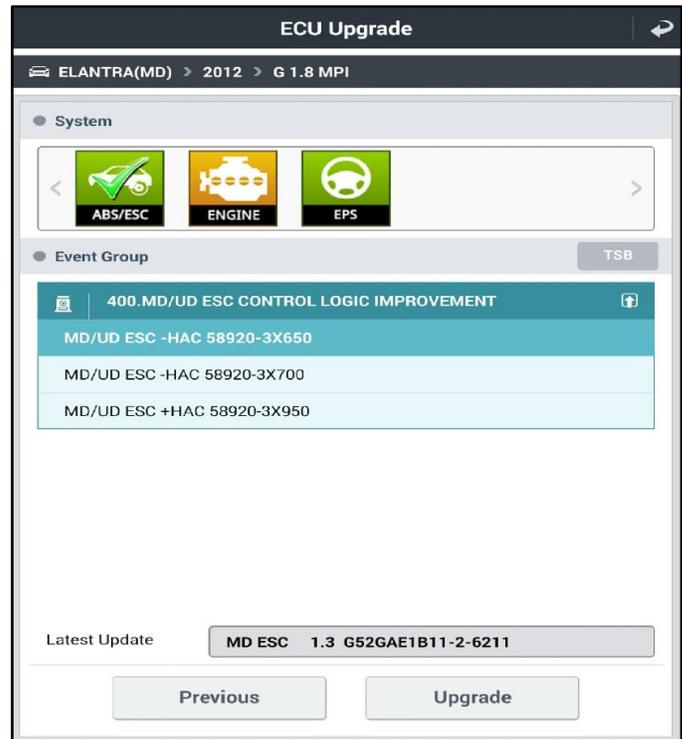


2. Select **ABS/ESC** in System.

Select the update event, “**400.MD/UD ESC CONTROL LOGIC IMPROVEMENT**” and the appropriate update based on the HECU part number and then click **Upgrade**.

Read the Information section before clicking **Upgrade**.

The vehicle battery voltage is checked to make sure it is at least 12 volts to assure reliable update results. Click **OK** if the results indicate voltage is OK. If not, select **CANCEL** and charge the vehicle battery.



- Enter the appropriate password provided in the table below and then click **OK**.

Menu	Password
MD/UD ESC -HAC 58920-3X650	3650
MD/UD ESC -HAC 58920-3X700	3700
MD/UD ESC +HAC 58920-3X950	3950

- Update (1/2) will begin and the progress of the update will appear on the bar graph.

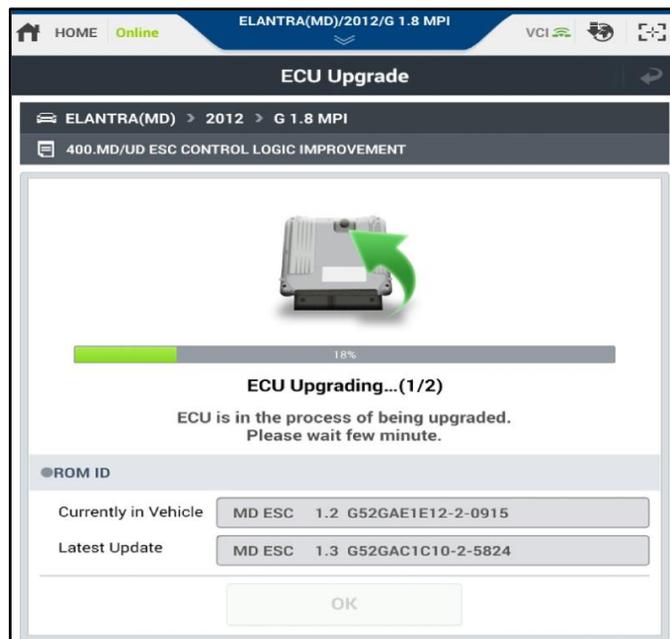
Update (1/2) will occur until 100% is reached on the bar graph.

Update (2/2) will begin and the progress of the update will appear on the bar graph.

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

Turn the ignition key **OFF** for 10 seconds, place it back in the **ON** position, and then click **OK** to continue according to information displayed on the screen.

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



- Click **Yes** to run Fault Code Searching.

If **C1285** is found, attach the Fault Code Search results screen capture to the R/O and then perform the Longitudinal G Sensor Calibration.

Clear any diagnostic trouble codes (DTC) that were created during the update.

Start the engine to confirm proper operation of the vehicle.

