HYUNDAI **Technical Service Bulletin**	GROUP **RECALL**	NUMBER **21-01-006H**
	DATE **FEBRUARY, 2021**	MODEL(S) **Kona Electric (OS EV)**
SUBJECT:	HIGH VOLTAGE BATTERY SOFTWARE UPDATE, INSPECTION AND REPLACEMENT DTC P1AA600 (RECALL CAMPAIGN 196)	

This TSB supersedes TSB# 20-01-042H to revise the Service Procedure, add HV battery replacement and update the Warranty section with additional OP codes.

*** IMPORTANT**

*******Dealer Stock and Retail Vehicles*******

Dealers must perform this Recall Campaign on all affected vehicles prior to customer retail delivery and 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 "Vehicle Information Screen (VIS)" screen via WEBDCS to identify open Campaigns.

Description: The battery system in certain 2019-2020MY Kona Electric vehicles may be faulty and/or contain software that may need to be updated. These conditions may increase the risk of an electrical short circuit. Follow the procedure to update the specified ECU modules. An inspection is required after the software updates are completed to determine if additional repairs are necessary.

Applicable Vehicles: Certain 2019-2020MY Kona Electric (OS EV)

Part Information:

If high voltage (HV) battery replacement is necessary according to the Service Procedure, refer to TSB 20-EE-001H-2 (or latest revision) for replacement procedures, ordering instructions, and approval guidelines.

Warranty Information:

Model	Op. Code	Operation	Op. Time	Causal Part	Nature	Cause
Kona Electric (OS EV)	01D076RA	BMS & VCULDC UPDATE	0.5 M/H	37501-K4000QQH	I11	ZZ3
	01D076RB	IGPM, MCU, BMS & VCULDC UPDATE	1.1 M/H	37501-K4000QQH	I11	ZZ3
	01D076RC	HV BATTERY REPLACEMENT	3.4 M/H	37501-K4000QQH	I11	ZZ3
	01D076RD	HV BATTERY REPLACEMENT & BMS UPDATE	3.7 M/H	37501-K4000QQH	I11	ZZ3

NOTE 1: Submit Claim on Campaign Claim Entry Screen.
NOTE 2: If a part is found in need of replacement while performing this Recall Campaign and the affected part is still under warranty, submit a separate warranty 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.

Service Procedure:

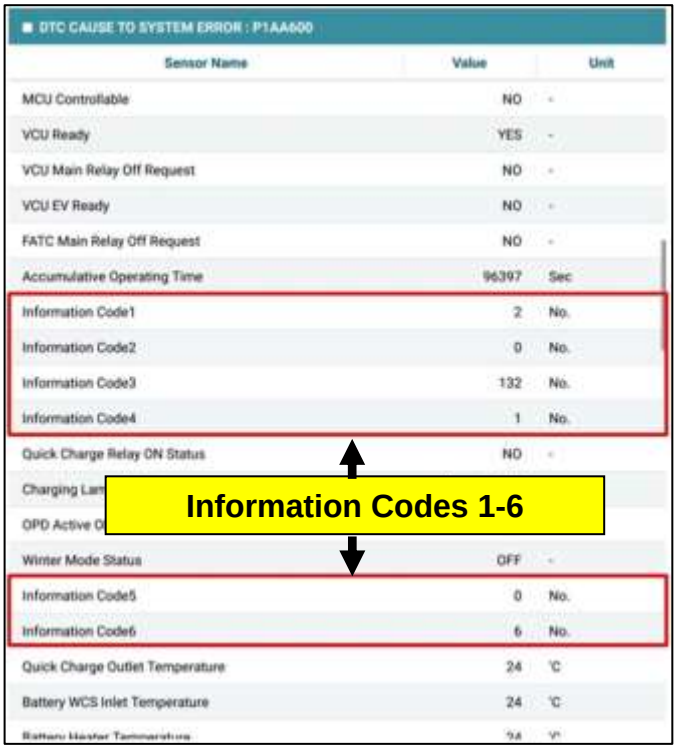
1. Scan for DTCs in the BMS System using the GDS.

   If DTCs are detected in the BMS System, collect all related Freeze Frame Data and all Information Codes for the DTC.
   - For DTC P1AA600:
     - Replace the high voltage battery according to procedures in TSB 20-EE-001H-2 (or latest revision).
     - When repairs are completed and there are no DTCs, continue to Step 2.
   - For other DTC, follow the related shop manual to repair the vehicle then continue to Step 2.

   If no DTCs are detected in the BMS System: Proceed to Step 2.

NOTICE

Ensure all Freeze Frame Data and Information Codes are collected if any DTCs are detected in the BMS System.



2. **If there are no DTCs in the BMS System**, update the ECU software using the GDS for the following systems. Reference the GDS Information section for Event #.

   Note: Check Campaign 960 completion status on VIS. If Campaign 960 was completed, a software update for (c) and (d) is not required since these systems were previously updated during Campaign 960.

   a) BMS (Battery Management System)
   b) VCULDC (Vehicle Control Unit & Low DC-DC Converter)
   c) IGPM (Integrated Gateway Power Module)
   d) MCU (Motor Control Unit)

   Refer to TSB 15-GI-001 for the general GDS Mobile ECU update procedures.

NOTICE

Do not proceed with ECM updates before diagnosing and repairing all DTCs in the BMS System.

NOTICE

Perform all ECM updates in AUTO mode first. If AUTO mode is not successful then MANUAL mode can be used.

⚠WARNING

THE 12V BATTERY VOLTAGE CHECK IS CRITICAL FOR THIS MULTI- ECU UPDATE AS IT COULD DRAW DOWN THE 12V BATTERY WHILE THE IGNITION IS ON.

STOCK VEHICLES ARE PRONE TO LOW BATTTERY CONDITION. OPERATE A STOCK VEHICLE AT READY ON FOR 20 MINUTES PRIOR TO STARTING THE MULTI-ECU UPDATE.

THIS WILL ENSURE 12V BATTERY WILL BE CHARGED TO AN ADEQUATE LEVEL, PREVENTING POTENTIAL UPDATE FAILURE OR CONTROLLER DAMAGE.

⚠WARNING

If a low battery warning message appears on the GDS, operate the vehicle in Ready mode for at least 20 minutes to ensure the 12V battery is adequately charged before performing any software updates.

3. After successful completion of the applicable system updates, search all systems for DTCs.

   If no DTC are found, the procedure is complete.

   If DTCs are detected in the BMS System, collect all related Freeze Frame Data and all Information Codes for the DTC.
   - For DTC P1AA600:
     - Replace the high voltage battery according to procedures in TSB 20-EE-001H-2 (or latest revision).
     - When repairs are completed and there are no DTCs, follow Step 2 to update the BMS software, if applicable.
   - For other DTC, follow the related shop manual to repair the vehicle.

NOTICE

Refer to TSB 20-EE-001H-2 for high voltage (HV) battery approval guidelines.

DTC, Freeze Frame Data (FFD), current BMS data screens, and other information must be submitted according to the procedures in TSB 20-EE-001H-2 (or latest revision).

GDS Information:

NOTICE

All ECM updates should be performed in Auto Mode first. If the ECM update starts but then fails in Auto Mode, perform these updates in Manual Mode.

Event #	Description
655* 656*	OS EV - IMPROVED MONITORING LOGIC APPLICATION(**BMS**) OS EV - IMPROVED MONITORING LOGIC APPLICATION(**BMS**,ROM duplication) ***Note: 1) Select Event #655 first. 2) If an error message is displayed or the update is not successful, try Event #656. 3) Try an event after #655/656 if one is available.***
657*	OS EV - HIGH VOLTAGE BATTERY MONITORING LOGIC APPLICATION(**VCULDC**)
590*	OS EV - HIGH VOLTAGE BATTERY MONITORING LOGIC APPLICATION(**MCU**) ***Note: Not required if Campaign 960 is completed.***
592*	OS EV - HIGH VOLTAGE BATTERY MONITORING LOGIC APPLICATION(**IGPM**) ***Note: Not required if Campaign 960 is completed.***

(*or later event if one is shown for each system)

ROM ID INFORMATION TABLE:

1) BMS (#655)

The BMS ROM ID can be found on the LH side of the high voltage battery underneath the vehicle. Cross-reference the ROM ID in the column labeled “OLD” in the table to find the applicable BMS P/No. and NEW ROM ID.

VEHICLE	SYSTEM	BMS P/NO	ROM ID	
			OLD	NEW
OSEV	BMS	375A0-K4050	5300	6100
			5400	
			5500	
			5700	
			5800	
			5900	
			6000	
			6020	
			6040	
			6050	
			6060	
			6070	
			6080	
			6090	
OSEV	BMS	375A0-K4000	5302	6102
			5402	
			5502	
			5702	
			5802	
			5902	
			6002	
			6022	
			6042	
			6052	
			6062	
			6072	
			6082	
			6092	
OSEV	BMS	375A0-K4450	5304	6104
			5404	
			5504	

			5704	
			5804	
			5904	
			6004	
			6024	
			6044	
			6054	
			6064	
			6074	
			6084	
			6094	
OSEV	BMS	375A0-K4400	5306	6106
			5406	
			5506	
			5706	
			5806	
			5906	
			6006	
			6026	
			6046	
			6056	
			6066	
			6076	
			6086	
			6096	
OSEV	BMS	375A0-K4051	6200	6600
			6220	
			6240	
			6540	
			6550	
			6560	
			6570	
			6580	
			6590	
OSEV	BMS	375A0-K4001	6202	6602
			6222	
			6242	
			6542	
			6552	
			6562	

			6572	
			6582	
			6592	
OSEV	BMS	375A0-K4451	6204	6604
			6224	
			6244	
			6524	
			6544	
			6554	
			6564	
			6574	
			6584	
			6594	
OSEV	BMS	375A0-K4401	6206	6606
			6226	
			6246	
			6526	
			6546	
			6556	
			6566	
			6576	
			6586	
			6596	
OSEV	BMS	375A0-K4052	6400	6800
			6500	
			6700	
			6730	
			6740	
			6770	
			6780	
			6790	
OSEV	BMS	375A0-K4002	6402	6802
			6502	
			6702	
			6732	
			6742	
			6772	
			6782	
			6792	
OSEV	BMS	375A0-K4452	6504	6804

			6734	
			6744	
			6774	
			6784	
			6794	
OSEV	BMS	375A0-K4402	6506	6806
			6736	
			6746	
			6776	
			6786	
			6796	

2) BMS (#656)

The BMS ROM ID can be found on the LH side of the high voltage battery underneath the vehicle. Cross-reference the ROM ID in the column labeled “OLD” in the table to find the applicable BMS P/No. and NEW ROM ID.

VEHICLE	SYSTEM	BMS P/NO	ROM ID	
			OLD	NEW
OSEV	BMS	375A0-K4052	6400	6900
			6500	
			6700	
			6730	
			6740	
			6770	
			6780	
			6790	
OSEV	BMS	375A0-K4002	6402	6902
			6502	
			6702	
			6732	
			6742	
			6772	
			6782	
			6792	
OSEV	BMS	375A0-K4452	6504	6904
			6734	
			6744	
			6774	

			6784	
			6794	
OSEV	BMS	375A0-K4402	6506	6906
			6736	
			6746	
			6776	
			6786	
			6796	

2) VCULDC(#657)

VEHICLE	SYSTEM	VCULDC P/NO.	ROM ID	
			OLD	NEW
OS EV	VCULDC	36601-0E170	EOSEJNM-NS0-D000 EOSEJNM-NS1-D000 EOSEJNM-NS2-D000 EOSEKNM-NS3-D000 EOSEKNM-NS4-D000 EOSEKNM-NS5-D000 EOSEKNM-NS6-D000 EOSEKNM-NS7-D000	EOSEKNM-NS8-D000

3) MCU (#590)

VEHICLE	SYSTEM	MCU P/NO.	ROM ID	
			OLD	NEW
OS EV	MCU	36601-0E170	EOSEJDL-MS0-D000 EOSEJDL-MS1-D000 EOSEKNLMS1-D000	EOSEKNLMS2-D000

4) IGPM (#592)

VEHICLE	SYSTEM	IGPM P/NO.	ROM ID	
			OLD	NEW
OS EV	IGPM	91950-K4010 91950-K4020 91950-K4030 91950-K4040 91950-K4050 91950-K4060 91950-K4070 91950-K4080 91950-K4090 91950-K4100 91950-K4110 91950-K4120 91950-K4130 91950-K4140 91950-K4011 91950-K4021 91950-K4031 91950-K4041 91950-K4051 91950-K4061 91950-K4071 91950-K4081 91950-K4091 91950-K4101 91950-K4111 91950-K4121 91950-K4131 91950-K4141	K401 K402 K403 K404 K405	K406
			K601 K602	K603

MANUAL MODE PASSWORD INFORMATION TABLE:

#655 (BMS)

MENU	P/W
OS EV BMS 375A0-K4050	**4051**
OS EV BMS 375A0-K4000	**4001**
OS EV BMS 375A0-K4450	**4451**
OS EV BMS 375A0-K4400	**4401**
OS EV BMS 375A0-K4051	**4052**
OS EV BMS 375A0-K4001	**4002**
OS EV BMS 375A0-K4451	**4452**
OS EV BMS 375A0-K4401	**4402**
OS EV BMS 375A0-K4052	**4053**
OS EV BMS 375A0-K4002	**4003**
OS EV BMS 375A0-K4452	**4453**
OS EV BMS 375A0-K4402	**4403**

#656 (BMS)

MENU	P/W
OS EV BMS 375A0-K4052	**0405**
OS EV BMS 375A0-K4002	**0400**
OS EV BMS 375A0-K4452	**0445**
OS EV BMS 375A0-K4402	**0440**

#657 (VCULDC)

MENU	P/W
OS EV VCULDC36601-0E170	**0170**

#590 (MCU)

MENU	P/W
OS EV MCU 36601-0E170	**0170**

#592 (IGPM)

MENU	P/W
OS EV IGPM 91950-K4010~K140, K4011~K141(ROM ID : K401/2/3/4/5)	**3000**
OS EV IGPM 91950-K4010~K140, K4011~K141(ROM ID : K601/2)	**3001**