

## **Encore Release Notes**

### Version 2.1.0.14

### **Overview:**

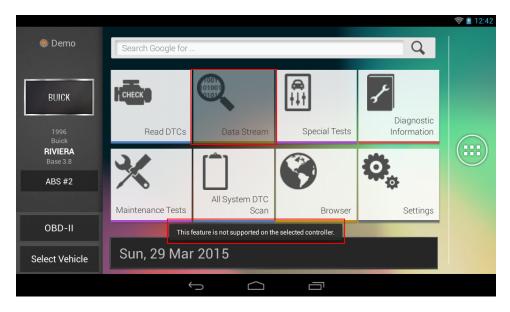
The new version 2.1.0.14 contains a major coverage release. Also provided are selected highlights of new features, fixed defects reported by technicians, and improvements. You may notice many more in the software that are just too numerous to identify individually. Many thanks for the useful feedback we are receiving. More coverage and enhancements on the way!

### Special Recognition:

A very special "Thank You" to all our hard working Beta Shops & Technicians for taking time to provide feedback. This release is one of the largest releases ever and certainly the best to date because of you!

### Stability and Performance Improvements:

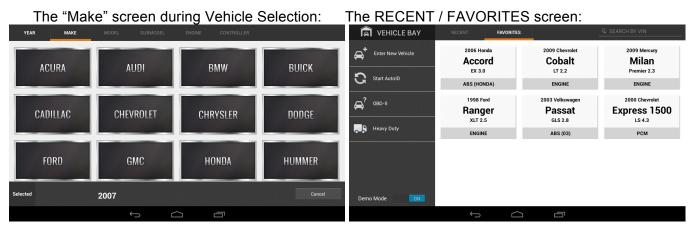
- Performance of the Diagnostics Software has been greatly enhanced to improve complete system stability and prevent system lockups.
- The boot up sequence has been improved.
- User will see more stability and responsiveness due to the improved user messaging.
- Implemented Diagnostic Function availability to display only the functions support on the specific vehicle ECU.



Example screen of a vehicle not supporting "DataStream":

Tapping on a Diagnostic Function that is not available for the current controller will display a message indicating that "This feature is not supported on the selected controller".

• OEM Make Logos have been replaced with new custom tiles. This will affect 7 areas:



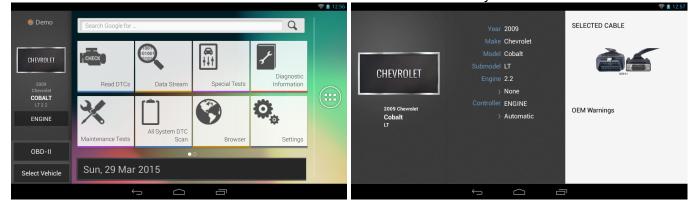
### The AutoID results screen:

# The Vehicle Selection Controller screen (icon removed from "Selected" bar at bottom):

E VEHICLE BAY		Q SEARCH BY VIN	YEAR MAKE	MODEL SUBMODEL	ENGINE CONTROLLER	
Enter New Vehicle	VIN Match Results(3)	1G6DM57N530102274	MAINTENANCE	ENGINE	GLOBAL OBDII	TRANSMISSION
Start AutoID		2003 Cadillac	TESTS			
OBD-II	CADILLAC	CTS Luxury Sport 3.2, GAS, Naturally Aspirated, DOHC	ABS	WIRELESS CTRL MODULE (TPMS)	OCCUPANT RESTRAINT CTRL	AUDIO
	CADILLAC	2003 Cadillac CTS	CABIN COMP NODE	DOOR FRONT LEFT	DOOR FRONT RIGHT	DOOR MODULE REAR LEFT
Demo Mode OFF		Base 3.2, GAS, -, Naturally Aspirated, DOHC	2008 Chrysler Selected Town & Country 1	ouring 3.8		Cancel
	Ĵ			$\leftarrow$		

#### The Vehicle Side Bar on Home screen:

### The Vehicle Summary screen:



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The Slim Vehicle Side Bar displayed during Diagnostic Functions:



### AST / All System DTC Scan:

- The All System DTC and Automated System Reports have had error handling added, greatly improved for readability and usability and now allow for continued system stability. Here are just a few of the numerous highlights:
  - Controllers are now prioritized by protocol for improved inter-system communications. Additionally, to further improve stability, controllers that are not supported by the current cable selection are now skipped during the scans. The user will see this by the output "Optimizing Controllers list":



Changing controllers is disabled during Automated System Tests and All System DTC Scan tests. If attempted, the user will see a message indicating "Functionality currently unavailable":

		(t) 👔 🗎	1:50		🤝 📓 11:59
Current	🔅 Automated System Test	0 < 1	Current	🔅 Automated System Test	0 < I
Chevrolet	Reading DTCs from BODY CONTROL		Toyota	Getting GLOBAL OBDII Mode 2 Freeze Frames	
Cruze	9%	- 0	Camry xLE 3.0		- 0
	TRANSMISSION	12 DTC(s) found	$\geq$	AIRBAG	6 DTC(s) found
	ENGINE	12 DTC(s) found	$\mathbf{\Sigma}$	Check supported OBDII modes	
NOISS	BODY CONTROL	Reading I	TCs SNVB	OBDII DS Snapshot (Mode 1)	12 item(s) found
TRANSMISSION	ELEC POWER STEERING CTRL		engine/Trans	Readiness Monitor Tests (Mode Functionality currently unavailable	11 item(s) found
Ľ.	FUEL PUMP CONTROL MODULE			Freeze Frame Data (Mode 2)	Silve Reading

The first controller in the list now matches the user's primary controller:



 The output will now display "Communication Failure or no Controller Available" for a true indication of controller availability during reports when attempting to read from an unavailable or unresponsive controller.

Automated Report	System Test	Q	<	:
SUMMARY	Diagnostic Trouble Codes			
DTCs	Error Communication failure or no Controller Available			-
DATA STREAM SNAPSHOT	Secondary Controller ELECTRONIC I	BRAKE	CONTR	OL
MODE 1	<b>Error</b> Communication failure or no Controller Available			-
FREEZE FRAME	Secondary Controller AIRBAG			
MODE 5	<b>Error</b> Communication failure or no Controller Available			-
MODE 6	Secondary Controller BODY CONTROL	DL		

• Additionally, for those Controllers that do not actually support DTC reading during the scans will present an error to the user that can be expanded to display:

💠 Aut	omated System Test	ø	<	1
	Getting GLOBAL OBDII Readiness Mode1 Data			
	MULTIFUN ALARM MODULE	-	C	
AIRBAG	Error - Communication failure or no Controller Available	No Diagnostic	Trouble Co	des
INSTRUMENT F	Close	No Diagnostic	Trouble Co	des
MULTIFUN ALA	RM MODULE		Ē	rror 📎

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• The All System DTC Scan and Automated System Test reports will now display the DTCs reported at each DTC group for better granularity and accuracy.

For example:

- The 4WD controller has a History Code U0126, but was unable to read Current Codes. Prior to this fix, you would see only "Communication failure or no Controller Available" listed for the entire 4WD controller.
- Additionally, for the Electric Power Steering controller, you can now see at each DTC group level when there are "No Diagnostic Trouble Codes" present and when there are codes present:



All System DTC Scan Report	0	<	:
econdary Controller 4WD			
<b>U0126</b> Lost Communication With Steering Angle Sensor Module	ł	listory	Code
Error Communication failure or no Controller Available	(	urrent	Code
econdary Controller ELECTRIC POWER STEERING			
<b>U0105</b> Lost Communication With Fuel Injector Control Module	ł	listory	Code
No Diagnostic Trouble Codes	(	urrent	Code
econdary Controller OCCUPANT CLASSIFICATION			
No Diserventia Tasukla Os das		Deed	

• The HTML Reports will show the same DTC group level granularity:

#### **Before:**

4WD and Electric Power Steering displays only one output for each controller and the results are misleading:

#### After:

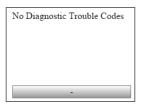
4WD and Electric Power Steering now displays the output for each DTC group and you can see exactly which groups have DTCs:

Error
Communication failure or no Controller Available
-

Secondary Controller 4WD

Secondary Controller ELECTRIC POWER STEERING

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Secondary Controller 4WD



Secondary Controller ELECTRIC POWER STEERING

No Diagnostic Trouble Codes	No Diagnostic Trouble Codes
History Codes	Current Codes





 The output will now check for supported OBD II modes and display "OBD II DataSream Snapshot (Mode 1)" in the Automated System Test outputs as the Global OBD II controller will no longer be listed in the groups of controllers.

Automated System Test	ø	< :	
Report ready for viewing.			
100%			
			-
PARK ASSIST MOD		9 DTC(s) found	≥
STEERING COL LOCK MODULE		9 DTC(s) found	≥
Check supported OBDII modes			
OBDII DS Snapshot (Mode 1)		12 item(s) found	⅀

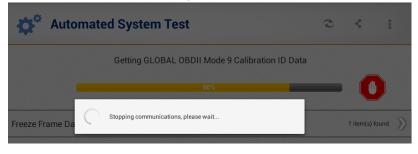
 Added additional spacing to allow for two lines of text and added ellipses where needed for Mode 6 items:

Automated Report	System	Test		ø	< 1
SUMMARY	Non-C	Contin	uously Mo	nitored Test	S
DTCs	(Mode	e 6)			
DATA STREAM SNAPSHOT	0.0 0.	0.02			
MODE 1	(0) MIN		(1.474) VALUE	<b>(32.767)</b> MAX	<b>(kPa)</b> UNITS
FREEZE FRAME	TID 3d CID d4	Purge Flow	Monitor f EVAP Prs For 10sec Purg	e Vsv Opened After Leak	Passed
MODE 5	(0)	Chk )	(2.222) VALUE	(32.767) MAX	(kPa) UNITS
MODE 6	TID 3d	Purge Flow	Monitor		Decord

• Added consistent results and status messages among test re-runs by ensuring the system is restored before re-running the test.

otctools.com/encore

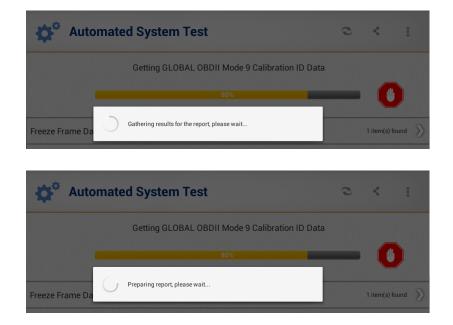
800-533-6127



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### Data Stream:

- Data Stream Improvements during Recordings and Playback:
  - The title bar will now say "Recorded Data Stream" to distinguish between viewing live Data Stream. Additionally, the Vehicle side bar is now cleared out during recording playback and vehicle info for the recording is displayed as a scrolling marquee in header:

10	3 Cadilla	ac CTS L	Luxury ELECTRON	IC BRAK	E CONTF	U—	<sup>2</sup> <b>1 3</b>	
	ont Wheel Sensor	:	Left Rear Wheel Speed Sensor	:	Pump Motor Commanded Voltage	:	Engine Drag Control Failed (2)	
		109 <sub>km/h</sub>		<b>89</b> km/h		16.1 v		
39 Low	64avg	109High	6 Low 52avg	89High	11.1 Low 13.6avg	16.1High	Yes	
Right F Wheel Sensor	Speed	:	Right Rear Wheel Speed Sensor	:	Battery Voltage Signal		Panic Brake Assist Failed (2)	
		134 <sup>km/h</sup>		119 km/h		8.50 v		
67 Low	102avg	134High	75 Low 112avg	153High	3.10 Low 5.60avg	8.50High	No	

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• The icon for pulling up the Data Item menu in small, medium and full screen mode has been changed to the Android Overflow menu button for consistency:

Left Front Wheel Speed Sensor	Left Front Wheel Speed Sensor		XX	Left Front Wheel S	peed Sensor		÷
109 km/h 39 Low 64.ivg 109.High Small	-	39 km/h					
	31 Low 67avg Medium	111High		31	67	39 km/h 111	
					Full Screen		

• The user will no longer see the "Clear Data" option while recording live Data Stream or while in Playback mode.

august -	Data Stream	2		<sup>▲</sup> Z↑ ▶■ <sup>4</sup>	
Vehicle Speed Sensor	Intake Air Temperature Sensor	Barometric Pressure	-	Position Indicated Angle	:
190 MAN <sup>A</sup> 137 km/h	Erase All Recordings	s	254 92 kPa		900 %
17	– Use English/Standa	rd Units	12	80 Low 649avg	1269High
Manifold Absolute Pressure Sensor	Take Screen Capture	e I Signal	1	Engine Run Time	1

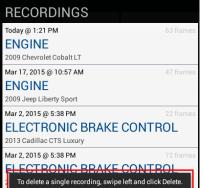
• The playback recordings will now appear in order from newest to oldest:

RECORDINGS						
1 min ago ENGINE	63 frames					
2009 Chevrolet Cobalt LT						
Mar 17, 2015 @ 10:57 AM	47 frames					
ENGINE						
2009 Jeep Liberty Sport						
Mar 2, 2015 @ 5:38 PM	22 frames					
ELECTRONIC BRAKE CONTROL						
2013 Cadillac CTS Luxury						
Mar 2, 2015 @ 5:38 PM	72 frames					
ELECTRONIC BRAKE CONTR	ROL					
2013 Cadillac CTS Luxury						





• When shown the list of Data Stream Recordings, the user now sees a message that tells them how to delete an individual recording:

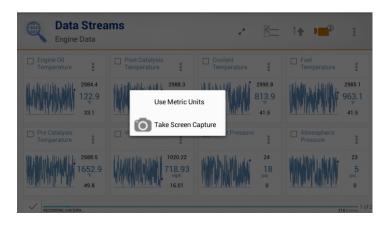


• When navigating to Data Stream Recordings, the user can find that they are now located on external storage:

											0 🔶	08:05
	OI File M	lanager						Ħ	Q,	ţţ	<b>*</b> +	E
A	storage	emulated	-	data	com.bosch.mr	rst files	recordings					
	recordin 2/19/2015	<b>g_2015-02-</b> 1 07:30	19-072	751.153	-0600.dat							248KB
					÷	$\Box$	ā					

 The user will no longer see the "Erase All Recordings" option while recording live Data Stream.

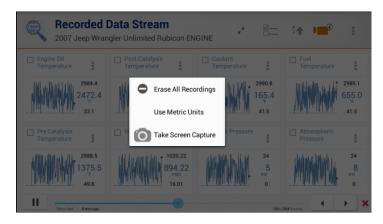
Recording Live Data Stream – Clear Data and Erase All Recordings options removed:











- Erase all Recordings will only erase all the recordings for the currently selected vehicle when in Live Mode. When in playback mode, it will only erase the recordings for the vehicle the recording is currently being played back for. This is in lieu of erasing all recordings that exist for all vehicles.
- Centered the title for the "Data Streams" as shown below:



• The Digital display tags for "Low", "avg" and "High" for Data Stream in large mode will now display under the values and will no longer wrap:

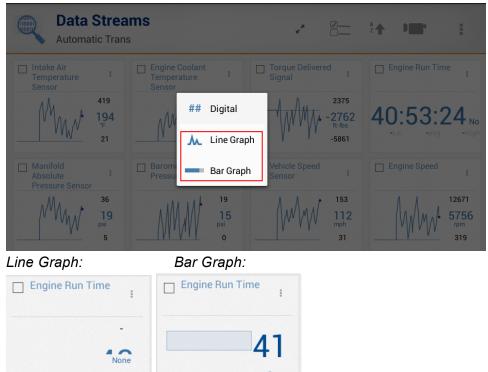
Before		After	
Data Streams     TCC Data	× 83 🖭 🕯 🎟 I	Data Streams TCC Data	× 23 🖳 ît 🛏 i
Transmission Fluid Temperature	Engine Coolant Temperature	Transmission Fluid Temperature	Engine Coolant Temperature
14	7	212	173
°F	°F	°C	°C
-22 Lo avg Hig w 226 412 h	-33 Lo avg Hig w 175 405 h	-36 123 214 Low avg High	<b>-36 87 210</b> Low avg High



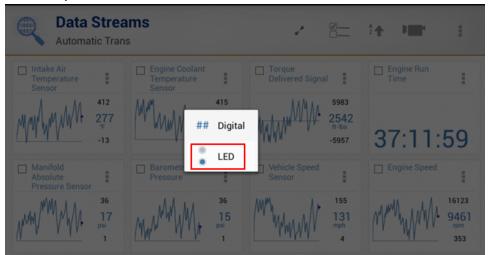


 Incompatible Data Stream items will no longer be able to be changed to Bar graphs or Line graphs making the tiles unreadable.

Before: "Engine Run Time" Data Item could be changed to Line Graph or Bar Graph:



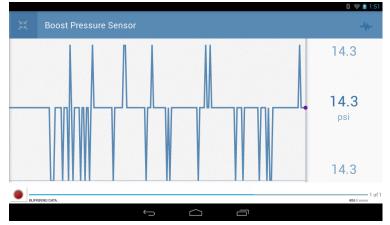
After: "Engine Run Time" Data Item can no longer be changed to Line Graph or Bar Graph, instead LED and Digital options are now available. NOTE: LED and Digital options will display same output:



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• User will no longer see the case of the graph jumping around when the Minimum, Maximum and Average values are equal.

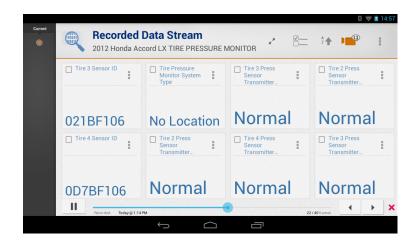
Before: Items for the same value would jump around for min, avg and max graphed items.



*After:* Items for the same value will no longer jump around on min, avg and max graphed items.

Fuel T/TMP Sensor	1
	48.2
	48.2 °F
	48.2
BUFFERING DATA.	200 / 200 frames 1 of

• Fix for the use case where some data items are not properly resizing or displaying correctly. Specifically, the TPMS IDs with 8 characters are now properly being displayed in "small view":







 Data Stream items with a value was incorrectly treated numeric value which would have "Low", "avg" and "High" label entries. In some instances, this was causing the items to get cut off. This has been fixed by removing those labels:

Before	After
MIL Lamp (2)	MIL Lamp (2)
Off .avg .	igh Off

• Add ellipsis to data item descriptions that are longer than 3 lines:

Number Of Ignition On After Entering The	Number Of Ignition On After Entering The	Number Of Ignition On After Entering The
255Lo 255avg 255High		Low avg High

• The user will now see the "Clear Data" option available when viewing a Data Item in Full Screen Mode while they are buffering live Data Stream. Additionally, the user will now see the "Take Screen Capture" option in Zoomed "Full Screen" Data Stream.

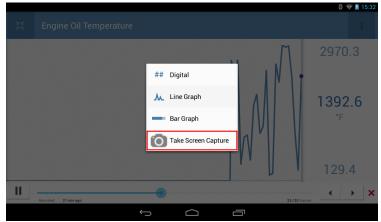
Full Screen Mode (Buffering Live Data) – Clear Data and Take Screen Capture options added



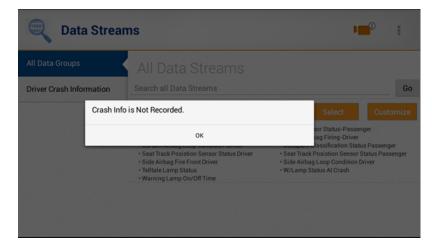




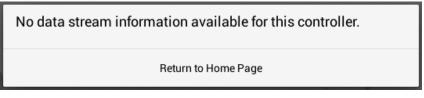
Full Screen Mode (Playback or Recording live Data Stream) – Clear Data not available but Take Screen Capture option added



- The user will see that they can now re-enter Data Stream in OBD II. They will no longer see that OBD II Data Stream hangs on "Reading Data Item Values" indefinitely.
- Data Stream will no longer freeze on page 2 when going to Full Screen mode. Additionally, this fix will prevent some other cases of live Data Stream freezing in the following scenarios:
  - Calculating min/max/average values with non-numeric values
  - Calculating y coordinate of graph with non-numeric values
  - Reading invalid messages from the service.
- The user is no longer able to save recordings with zero frames. This will prevent a crash when attempting to load or zoom on existing recordings with zero frames.
- Prevent user from being able to swipe (page) in Data Stream until first page is finished loading to prevent a crash.
- Display a message box when necessary instead of Data Stream. For example, the "Crash Info is Not Recorded" message will now be properly display when attempting to view Data Stream on an Airbag controller that does not have any Data Items:

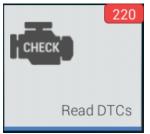


• User will no longer see "Return to Diagnostic Hub" in messaging on screens in which we are unable to get any Data Stream information for. The user will now see "Return to Home Page".



### Diagnostic Trouble Codes:

• The asset count for the number of Code-Assist<sup>™</sup> fixes will appear on the "Read DTCs" tile on the Home Screen.



• The title bar text is now centered for the "Diagnostic Trouble Codes" and "Failure Record" screens as shown below:



• Additionally, the "Diagnostic Trouble Codes" title will be properly vertically centered both when it has a subtitle beneath it and when it doesn't.



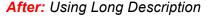




 The Diagnostic Trouble Code tiles and DTC Info Screen are now displaying long descriptions instead of short descriptions:

Before: Using Short Description







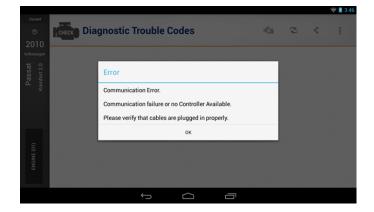
Additionally, the DTC tiles will now display up to 4 lines of text instead of 2:

#### **Before:**

After:



• When a controller is selected, but it is not actually found on the vehicle, better feedback will be provided via a dialog window to be consistent with other messages in the system:

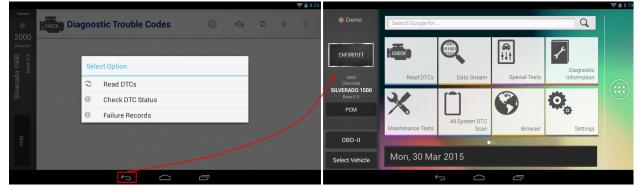


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### **DTC Status and Failure Records Navigational improvements**

• The "Back" button will now be enabled on the Diagnostic Trouble Codes option screen that pops up for vehicles with special functions, including DTC Status and Failure Records:



• After viewing a Failure Record, selecting the back button will reload the list of Failure Records.

Fuel Tank Rate Cap	Fuel Level Remaining	Engine Coolant Temp	Chewrolet				
512 tr	510						
	512 tr	88 degC	Silverado 15 <sup>Base</sup>	128 kPa Sele	ect a Failure Record to Vi	ew Freeze Frame Data	88 degC
Trans Fluid Temp	Start-Up ECT	Dist Since Last Fail	sil	Intake Air Temp	Failure Record 0 : P0101		Dist Since Last Fail
87.5 degC	88 degC	163838 km	PCM	88 degC	87.5 degC	88 degC	163838 km
Miles Since OTC Clear	Fuel Tank Pressure	Vehicle Speed					
	87.5 degC	87.5 degC 88 degC Miles Since OTC Clear Fuel Tank Pressure	87.5 degC 88 degC 163838 km Miles Sinse TC Clear Fuel Tank Pressure Vehicle Speed	Trans Fluid Temp     Start-Up ECT     Dist Since Last Fail       87.5 degC     88 degC     163838 km       Milles Since IC Clear     Fuel Tank Pressure     Vehicle Speed	Trans Fluid Temp     Start-Up ECT     Dist Since Last Fail     Intake AU Temp       87.5 degC     88 degC     1638388 km     88 degC       Miles Since TC Clear     Fuel Tank Pressure     Vehicle Speed     Dist Since First Fail	Start-Up ECT     Dist Since Last Fail     Intake Air Temp     Pailule record 0. Poil       87.5 degC     88 degC     163838 km     88 degC     87.5 degC       Miles Since TC Clear     Fuel Tank Pressure     Vehicle Speed     Diet Since First Fail     Miles Since DTC Clear	Start-Up ECT     Diat Since Last Fail     Intake Air Temp       87.5 degC     88 degC     163838 km       Miles Since ITC Clear     Fuel Tank Pressure       Vehicle Speed     Diat Since First Fail

#### Selecting the back button again will return to the options dialog:

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					⇒ <u>\$</u> 9:14									Ì	
Current		Record 0 : P0101				© 2000	CHECK) Dia	gno	stic Trouble Co	des		10	0	<	1
Chevrolet	Manifld Absolute Pres					Chevrolet		_							
o 1500 Base 5.3	128 kPa			88 degC		0 1500 Base 5.3		Sele	ect Option			_			
Silverado <sup>B</sup>	I ZO kPa Se	lect a Failure Record to Vi	ew Freeze Frame Data	OO degC		Silverado <sup>Be</sup>		Q	Read DTCs						
Sil	Intake Air Temp	Failure Record 0 : P0101		Dist Since Last Fail		Sil		0	Check DTC Status	3					
								0	Failure Records						
PCM	88 degC	87.5 degC	88 degC	163838 km		PCM									
	Dist Since First Fail	Miles Since DTC Clear													
		Ĵ							Ĵ	$\Box$	Ū				

Just as before, selecting back on the Diagnostic Trouble Codes screen with the options dialog open will close the dialog and return to the Home screen.



 If there are no Failure Records available, user will now see a message indicating that when selecting Failure Records:



• Clearing codes on a vehicle while it is running will notify the user that it could not clear the codes. Additionally, in other cases where it cannot clear codes, it will also notify the user. After a failed clear codes attempt, the user will have an option to re-read the codes.

Codes Did Not Clear					
Key On Engine Off MAY be required to clear codes. Do you wish to perform a read codes?					
Cancel	ОК				

- You can now proceed to DTC Information if we have Code-Assist<sup>™</sup> information on DTCs that still return as Hex codes, but do have a P code conversion for. Previously, the user would see the asset on the DTC tile, but could not select the tile to view the Code-Assist<sup>™</sup> information.
- The Clear Codes operation will no longer fail when no DTCs are present on Volkswagen / Audi UDS protocol. A second clear code transaction was added in case the first operation fails.
- With Heavy Duty selected, tapping on a DTC tile will no longer attempt to open up the DTC Info screen with which we do not have information on the DTC.

### Home / Launcher:

• Asset count indicators will now be displayed for "Read DTCs" and "Diagnostic Information" after returning to the Home Screen. Initiating a new vehicle selection will also clear the asset counts.

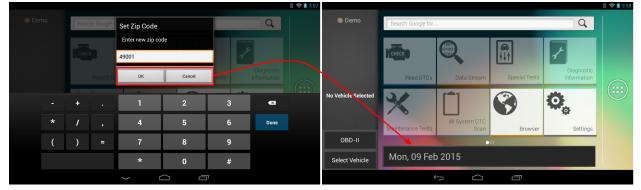


- User will now see "No vehicle currently selected, go to Select Vehicle to set one up." when long pressing on the vehicle information sidebar without a vehicle selected. Also, the long press menu will have the menu item "Create new vehicle" changed to "Select New Vehicle"
- The "Search Google for..." object will no longer take you to any screen when the Next and Return buttons are pressed. Instead, selecting "Next" will make the keyboard disappear.





• The numeric keyboard will now auto-close when the user selects "OK" or "Cancel" on the "Set Zip Code" popup:



### OBD II:

 Global OBD II Mode 9 output will now display the correct controller information for all items instead of assuming it is the same across the board.

OBD II Mode 9 Example Screens Generic OBDII **Generic OBDII** ÷ 1 ۲ DATASTREAM MODE 1 Vehicle Information (Mode 9) DATASTREAM MODE 1 Vehicle Information (Mode 9) FREEZE FRAME MODE 2 FREEZE FRAME MODE 2 Calibration Identification Number Vehicle Identification Number DTCs MODES 3, 4, 7, A DTCs MODES 3, 4, 7, A No Vehicle Selected No Vehicle Selected Controller Calibration Identification Number Controller Vehicle Identification Number 02 SENSORS MODE 5 02 SENSORS MODE 5 TRANSMISSION THD2C20SB6 ENGINE KMHDU46D27U104964 ENGINE H7SCSB2A--NON-CONTINUOUS TESTS NON-CONTINUOUS TESTS MODE 6 Calibration Identification Number Calibration Verification Number Calibration Identification Number Controller SPECIAL TESTS MODE 8 SPECIAL TESTS MODE 8 Calibration Verification Number Controller TRANSMISSION THD2C20SB6

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In OBD II Mode 6, the users will no longer see "()" when a value is not available. Instead they will • see "N/A":

Global OBD	П			:
READINESS MODE 1	Non-Cont	tinuously Mo	nitored Tes	sts
DATASTREAM MODE 1	(Mode 6)			
FREEZE FRAME MODE 2	TID 1 TID 1			Passed
DTCs MODES 3, 4, 7, A	CID 1 TID 1			rasseu
	N/A MIN	<b>20963</b>	30814 MAX	N/A UNITS
02 SENSORS MODE 5		TALUL	INDA	Ginto
NON-CONTINUOUS TESTS	TID 2TID 2CID 2TID 2			Passed
SPECIAL TESTS MODE 8	N/A MIN	<b>6246</b> VALUE	<b>20902</b> MAX	N/A UNITS

In OBD II Mode 5, the user will now see a progress indicator during the retrieval of O2 Sensor • data:

Global OBDII	I
READINESS MODE 1 Oxygen Sensor Tests (Mode 5)	
DATASTREAM MODE 1	
Description     Min     Value     Max       FREEZE FRAME     34 seconds     Loading Content     Please wait       DTCs MODES 3, 4, +, +     34 seconds     Loading Content     Please wait	Units
02 SENSORS MODE 5	
NON-CONTINUOUS TESTS MODE 6 SPECIAL TESTS MODE 8	

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The user will no longer see the check boxes on the Freeze Frame or Failure Records display • output:

Before		After	After				
E Fuel Tank Rate Cap	*TFT Sensor (If Eq)	Fuel Tank Rate Cap	*TFT Sensor (If Eq)				
511.1 gal	88 degF	511.1 ltr	88 degC				

### **OBD II Functional Improvements**

• The All System DTC Scan button on the home screen will now be disabled for the "GLOBAL OBD II" controller:

					💎 💈 3:01			
🔘 Demo	Search Google for .			Q				
CADILLAC	Read DTCs	Data Stream	Special Tests	Diagnostic Information				
Cadillac CTS Base 3.2 GLOBAL OBDII	*	( ר ו		Ö,				
	Maintenance Tests	All System DTC Scan	Browser	Settings				
OBD-II		•	0					
Select Vehicle	Mon, 23 Mar 2015							
	÷							

- Stability improvements to ease the transition from mode to mode.
- Selecting the GLOBAL OBD II controller will always display the Global OBD II screen to be consistent with Generic OBD II.

### **Registration:**

OIC

• Spanish translations are now available in the registration screens.

Registrar mi dispositivo ahora	Activar garantía
Registrar mi dispositivo más adelante	Primer nombre del propietario Apellido del propietario
Modo Demo	Nombre del taller (opcional) Nombre del distribuidor
	Ajustar el reloj A continuación: Información de

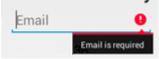
Ξ



- The user is now able to utilize the Android Back button throughout registration screens and not lose their inputted entries. Also, the registration data is now preserved so that the user can input their data, and come back later and select "Activate Now".
- The Wi-Fi toggle will now properly indicate the status of Wi-Fi upon entry to registration. In addition, the text next to the toggle button to enable and disable Wi-Fi will be changed from "Setup Wi-Fi" to "Wi-Fi":



 The user will now see that the Email is a required field if they leave it blank and try to hit "Next": Activate Warranty



• The Country field will pull up a soft keyboard:

			Unite	ed States	3						
Q	W	E	R	T	Y	U		1	0	Р	×
A	S	D	F	G		н	J	к		L	Done
•	z	х	С	v	В	N		м	,	•	?
?123	벆	/ @								-	- :-)
			/	/			ū				

### Settings:

• User will see the Settings screen update immediately after selecting their desired language on the "Language" screen in Settings.

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Current	Settings				<b>▼ 1</b> 7:17 1
	Application Settings				
	Software Information		English	Español	
icle d	Software Update				
No Vehicle Selected	Subscriptions				
Se	User Details				
	Language	K			
	Direct-Hit®				
		(			

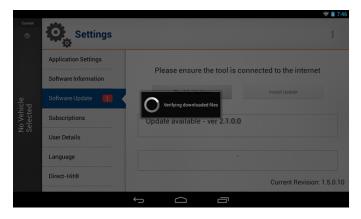
• The Software Update screen will now display the "Current Revision" in both English and Spanish:

Eng	lish:		🤝 🕽 2:56	Spar	nish:		🗢 🛚 2:58
Current	Settings			Current	Configuración		
	Application Settings	Please ensure the tool is co	nnected to the internet		Configuración de la aplicación	Por favor asegúrese de la heri	
	Software Information	Check for Updates	Install Update		Información del software	inter	net
cle J	Software Update			No Vehículo Seleccionado	Actualización de Software	Buscar actualizaciones	Instale la actualización
No Vehicle Selected	Subscriptions	No Updates av	No Updates available		Suscripciones	No Updates	available
ΖŎ	User Details			ΖŎ	Detalles del usuario		
	Language		Current Revision: 2.1.0.14		Idioma		
	Direct-Hit®				Direct-Hit®		Revisión actual: 2.1.0.14
	÷				Ś		

 Additional margin space has been added to the left navigation items in the Settings screen to accommodate for Spanish text without wrapping:



- A "Release Notes" button has been added to the "Software Information" tab on the Settings screen.
- The progress spinner "Verifying downloaded files" that is launched when the "Install Update" button is pressed will disappear after 25 or so seconds if the install does not start as it is supposed to:



 The Direct-Hit login screen updated to provide better feedback to the user while entering the user credentials.

#### 🖻 💼 12·4 Q. Settings Settings Application Settings Application Settings Software Information Software Information Direct-Hit® Direct-Hit® Software Update Software Update No Vehicle Selected User Jser Nam ser Name Subscriptions Subscriptions ••••• Password Password 9 User Details User Details Save Reset Reset Save Language Language Not Saved Information Mi Direct-Hit® Direct-Hit®

• User will see an alert warning popup on the "User Details" screen in Settings if when attempting to save changes if the Wi-Fi Connection status is not connected:



### Special Tests:

**Direct-Hit® Credentials not saved:** 

- Improved Ford / Mazda Self Diagnostic Tests (KOER, KOEO, Injector Buzz, Output Test, Glow Plug Test, Cylinder Contribution Test, Switch Test and Wiper Test)
- Prevent "Test not supported" and/or "Conditions Not Met" failures, by giving the user a Communications Error message when there is no response from the corresponding ECU.



E

### Direct-Hit® Credentials saved:





Centered the titles for the "Special Tests" as shown below.
 Before After



- Improved Data Item display during Special Test execution. This is done by improving the "Data Item Search" capability to improve database matches.
  - $\circ$  This search capability has been improved to take 15 seconds or less in most cases.
- Improved Special Test to display relevant PIDs.

**Before** the improvement, we were getting Data Items that did not apply to the actual test being run. For example, 2009 Jeep Liberty Sport 3.7 ENGINE – EGR Duty Cycle:



*After* the improvement, we are now getting Data Items that actually apply to the test being run. For example, 2009 Jeep Liberty Sport 3.7 ENGINE – EGR Duty Cycle now shows applicable data items (Engine Speed, EGR Duty Cycle, EGR Flow):



- Improved Stability and performance in Special Tests by disallowing certain user exit cases to ensure Special Tests are exited properly and vehicle communications is properly shut down. The following exit cases are no longer allowed during a Special Test:
  - o Emergency Stop
  - Android title bar (swiping down from top)
  - o Switching Controllers
  - Selecting Android back button



o Access to Android OS by navigating to "Help" via Android Overflow menu

### Before:

*After:* Emergency Stop button is removed. Access to the Android title bar is removed.



• Pressing the Controller button or Back button now put up a message that says "Please exit Special Tests by using the Exit button only":

Current	SPECIAL 1	TESTS			2 <b>4</b> I
CTS CTS Euxury Sport 3.2	MIL Lamp Command State:				
Luxury	Accelerator Pedal Position Angle	Battery Voltage	Calculated BARO	18 12	Desired Idle Speed
ENGINE	2 Low 53 ivg 95 High	Please exit Special Tests by using	the Exit button only	12 <sup>psi</sup> 1	Page 1 of 10
	On	Off Exit			Emergency Stop
		Ĵ			

• Selecting the Android Overflow menu no longer displays the "Help" option:



2



• When attempting to exit Special Tests with one of the blocked exit paths, the "Please exit Special Tests by using the Exit button only" message will be displayed:

Current © 2003		. TESTS				2 <b>*</b>	÷
Cadillac	MIL Lamp						
CTS Luxury Sport 3.2	Command State:						
Luxui	Accelerator Pedal Position Angle	Battery Voltage	:	Calculated BARO	:	Desired Idle Speed	:
h	3 Low 49avg 100Hi	MMAAAAVY	18.60 14.80 v 1.60	MMM	127 111 <sub>kPa</sub> 4	MMMM	2527 1640 <sub>RPM</sub> 33
ENGINE		Please exit Special Tes	sts by using th	e Exit button only		Pa	ge 1 of 10
	On	Off	Exit				
		ţ	$\Box$				

- Improved the performance of the Exit and Abort functions in the Special Tests:
- Removed the "X" character placeholder displayed during some Special Tests

Before:	After:				
SPECIAL TESTS	SPECIAL TESTS				
KOEO	KOEO				
Command State: Running					
Test in progress 60.0					
	Test in progress				
	KOEO Command State: Running Test in progress 51.0 Test in progress				

• Improved the ability to run the long duration Special Tests such as "Idle Learn", "DPF Regen".

### Vehicle Selection and Navigational:

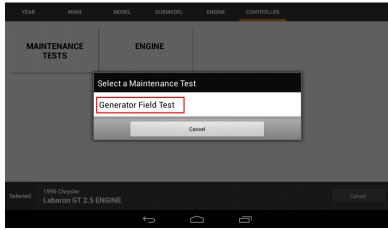
- The transition through vehicle selection has been improved.
- Vehicle Selection will now auto-navigate over single selection items. It will automatically select SUBMODEL and ENGINE entries and disable their tabs if only a single entry is available on that tab.
- The system will no longer display the cable selection box (see below) if the only selection is the default OBD II cable. Instead the cable will be auto-selected.







Maintenance Tests have been improved to handle vehicles that require protocol search criteria
and variants. This will prevent instances of "Test not supported" or "Preconditions not met" by
only navigating the user to the specific Maintenance Test when the system is sure. In this
manner, the system cannot auto-navigate the user to the tests under the selected Maintenance
Test Category and instead we will only be able to tell them which controller the tests can be found
under.



A vehicle that navigates to the selected Maintenance Test: 1990 Chrysler Lebaron GT 2.5:

A vehicle that has Variants and cannot proceed to the selected Maintenance Test Category: 1997 Nissan Altima GXE 2.4:

YEAR	MAKE	MODEL	SUBMODEL	ENGINE	CONTROLLER	
MA	INTENANCE TESTS	E	NGINE	GLO	BAL OBDII	TRANSMISSION
	ABS	ABS Please select	r for the selected that controller to proceed to SPECI Test.			
	l		_	ок	-	
Selected	1997 Nissan Altima GXE 2.4					
			¢	$\bigcirc$		

• The user will now be informed about the 20 pin connector being preferred during vehicle selection where the 3825-28 image is designated:



Example Use case vehicle: 1996 BMW ENGINE controller

• User will see a new OEM Warning screen when connecting to Volvo vehicles:

YEAR	MAKE	MODEL	SUBMODEL	ENGINE	CONTROLLER			
MAINTENANCE ENGINE CONTROL TESTS MODULE			GLOB	AL OBDII	TRANS	TRANSMISSION		
ANTILOC		DEM Warning			udit as an its at is	SUSP	SUSPENSION	
		nsure vehicle i tached to vehi		MODULE				
			(	Ж				
ACCESSORY ELECTRONIC		AUDIO	MODULE		CENTRAL CLIMATE CONT LECTRONIC UNIT			
Selected Summary Cancel								

2

• Wi-Fi update downloading stability has been enhanced.





### New Vehicle Coverage:

The focus of version 1.2.0.14 Domestic, Asian and European release was:

- Mercedes Expanded coverage for 2000-2013 MODEL YEAR for Doors, Seats, Audio, Cruise Control, Lights and Park Assist type of controllers
- BMW Expanded coverage for 1995-2014 MODEL YEAR for Doors, Seats, Immobilizer and Lights type of controllers
- Volvo Expanded coverage for 1999-2012 MODEL YEAR for Doors, Audio, Lights, Media and Park Assist type of controllers
- VW/Audi New coverage for Battery Replacement tests in CAN GATEWAY module for 2007-2013 vehicles
- Mercedes New coverage for Electric Parking Brake Move To Assembly Position test for 2012-2014 vehicles
- Added coverage for 2,478 new systems
- Added coverage for 9,534 new vehicle-ECU combinations
- Added 161 new Adjustment type tests
- Added 1,515 new Actuation type tests
- Improved AutoID VIN feature success rate, for 2008-2014 supported vehicles, has improved from 87% to 99%
- Vehicle Selection additions specific missing vehicles and controllers have been added
  - Asian Additional selections for Honda, Kia and Toyota
  - o Domestic Additional selections for Ford, GM, Jeep and Saturn
  - **European** Additional selections for Audi, BMW, Mini, Mercedes and Volkswagen
- Special test fixes/improvements:
  - Nissan Throttle Learn and Idle Air Volume Learn fixed an issue where the test would time out
  - o GM DPF Regen fixed an issue where the test would time out
  - Mercedes Added Electric Parking Brake Move to Assembly Position test for 2012-2013 vehicles
  - Mercedes Added Move To Calibrated Vehicle Level (Automatically) test for Suspension systems for 2003-2013 vehicles
  - VW/Audi Output Test Mode fixed issue where actuator descriptions were not being shown
  - VW/Audi Electric Parking Brake tests fixed a communication issue with the Parking Brake controller
  - VW/Audi Added Battery Replacement test in CAN GATEWAY module for 2007-2013 vehicles

### New Coverage – USA Domestic

### Chrysler/Jeep Coverage

- 1 new vehicle-ECU configurations for 2009 Grand Cherokee ELECTRONIC SHIFTER
- 23 new Adjustment type special tests including:
  - Engine/PCM CAM Crank Relearn Routine, Emissions Rolls Test Mode, Exhaust Phaser 1 Cleaning, Learn ETC, Reset Fuel Pressure Limit Valve Accumulators, Set Pinion Factor and Write Pinion Factor
  - o Transmission Reset Adaptive Values
  - **ABS** Bleed Brakes
  - o Occupant Classification/Restraint OCM System Verification Test
  - Climate (HVAC) Actuator Calibration
- 152 new Actuation type special tests, including: Transmission clutch tests, Engine Running Injector Kill tests, ESIM Forced Monitor Test, Purge Vapors Test, ETC Throttle Follower Test and many more
- Special test fixes/improvements:
  - Added many tests to GPEC Engine systems for 2007-2010 vehicles
  - o 2005 Magnum fixed "Throttle Control Relearn would not successfully complete"
  - 2006 Town & Country fixed EGR Duty Cycle test
  - 1999 Caravan 3.3L fixed EGR Solenoid Test
  - o 2002 Town & Country fixed Fuel Pump test
  - o 2014 Dart 2.4L fixed Shift Solenoid tests getting aborted
  - o 2007 Ram 6.7L fixed "Stationary Desoot Procedure will not get passed pre-conditions"
  - Improved error messaging when communication errors are encountered
- Other fixes/improvements:
  - o 2007 300C 5.7L fixed "Cylinders 7 and 8 misfire data not being shown"
  - o 1997 Wrangler 4.0L fixed "will not clear codes properly with engine running"
  - o 1998-2007 fixed Transmission DTC reading issue
  - o 2004 Jeep Liberty 3.7L added Coil Burn Time data items
  - 2009 Avenger 2.7L Added SRV Output State and SRV Valve State data items to aid in monitoring intake runner signals

### Ford Coverage

- Fixes and improvements made to Self-Diagnostics type tests
- Expanded coverage for FICM controller
- 120 new systems covered
- 150 new vehicle-ECU configurations





- 2 new Adjustment type special test including Extended Fuel Priming and Fuel Rail Pressure Control Test
- 25 new Actuation type special tests including ABS Booster Solenoid Current, DPC Solenoid Duty Cycle tests, HVAC tests and Lamp tests
- Special test fixes/improvements:
  - 2002 Explorer SportTrac ABS fixed "Automated Bleed test gives execution error message"
  - o 2006 Zephyr 3.0L fixed "Desired Idle RPM test would not increase RPM"
  - o 2013 Mustang 3.7L fixed "Injector Disable tests will not work with KOEO"
- Other fixes/improvements:
  - o 2010 F250 5.4L Added O2 Sensor Heater current draw parameters

### General Motors / Saturn Coverage

- 309 new systems covered
- 452 new vehicle-ECU configurations
- 44 new Adjustment type special tests, including:
  - **Engine/PCM** Clutch Pedal Position Learn, Crankshaft Learn, Fuel Trim Reset, HO2S Heater Learn, Idle Learn Reset, Oil Life Reset and Pilot Injector Balance Procedure
  - ABS Automated Brake Bleed, Steering Angle Sensor Centering and Yaw Rate Sensor Recalibration
  - **Parking Brake** Park Brake Calibration
  - Airbag Setup New SDM, Synchronize IPC and SIR
  - Body Controls Brake Pedal Position Sensor Calibration, Program Key Fobs and Tire Type/Pressure Selection
  - **Climate (HVAC)** Actuator Recalibration and Afterblow Option
  - Others Auto Door Unlock, Assist Step Learn Procedure, Yaw Rate Sensor Learn, Passenger Presence Sensor Learn, Radio Tuner Calibration, Setup New ROS, Steering Wheel Angle Sensor Learn and Steering Tuning Selection
- 74 new Actuation type special tests, including:
  - Engine/PCM Compression Test, Cylinder Power Balance, Depressurize Fuel System, EVAP Purge/Seal, Fuel Injector Balance and Fuel Pressure Control
- Special test fixes/improvements:
  - o DPF Regen fixed an issue where the test would time out
  - o 2011 Silverado HD 6.0L fixed "Idle Learn Reset test missing"
  - 2007 Enclave 3.6L fixed "Crankshaft Learn fails due to incorrect instructions"
  - o 2000 Yukon 5.3L fixed "Fuel Gauge Test will not work properly"
  - 2003-2004 Tahoe fixed "Automated Bleed does not work"
  - 2002 Silverado fixed "will not perform ABS Automated Bleed"



- o 2003 Monte Carlo fixed Automated Bleed test gives 'error function aborted' message"
- 2005 Saturn Vue fixed "Engine and Transmission tests give 'Error Function Aborted' message"
- o 2008 Aveo 1.6L fixed "many Engine tests are not working properly"
- 2008 Aveo 1.6L fixed "Reset Tire Pressure Sensor Learned Value does not perform properly"
- o 2006-2008 Impala Brake Pedal Position Sensor Calibration tests added
- o 2010 Impala Secondary Air Pump tests added
- o 2006 GTO 5.7L Manual trans Added all Engine tests
- 2006 GTO Added all ABS tests
- o 2007 Rendezvous 3.5L Added all Engine tests
- o 2000 Saturn LS2 fixed EGR Duty Cycle "test failed"
- o 2002 Tahoe 4.8L fixed "Trans TC Pressure Command not working"
- 2006 Silverado 4.3L fixed "unable to command the EVAP vent valve"
- o 2012 Enclave 3.6L fixed "incorrect instructions for Crankshaft Variation Learn test"
- o 2006 G6 fixed "missing BPP calibration function"
- o 2013 Malibu Eco fixed "Hybrid/EV Powertrain Control Module test fails"
- 2013 Express 6.0L fixed "EVAP Service Bay Test gives error message 'enable conditions lost' "
- o 1995 Camaro ABS fixed "Gear Tension Relief test gives error message and fails"
- 2013 Lacrosse Power Steering fixed "Power Steering Softstops Reset gives 'error function aborted' message"
- o 2006 Uplander fixed "EVAP Vent Solenoid test inoperable"
- o 2006 Uplander BODY fixed "No STs working in Body selections"
- o 2005 Yukon fixed "EVAP Service Bay Test will not complete"
- o Improved error messaging when communication errors are encountered
- Other fixes/improvements:
  - 2014 Sierra HVAC Controls fixed "will not communicate"
  - Added coverage for Transfer Case module for some 2007-2008 6.6L trucks
  - 1998 K1500 ABS fixed "loses communication with ABS datastream".

### New Coverage – USA Asian

### Honda Coverage

- 16 new systems covered
- 18 new vehicle-ECU configurations



 15 new Actuation type special tests, including: Cylinder Cranking Speed Variation Test, EVAP Solenoids Test, and more

### Hyundai Coverage

- 2 new Actuation type special tests for Assist Seat Belt Indicator(EC) and Power Window Relay
- Special test fixes/improvements:
  - o 2013 Elantra TPMS fixed "TPMS Registration gives 'input out of range' error message"

### Kia Coverage

- 5 new systems covered
- 4 new vehicle-ECU configurations
- 2 new Actuation type special tests for Assist Seat Belt Indicator(EC) and Power Window Relay
- Special test fixes/improvements:
  - o 2009 Sorento TPMS fixed "TPMS Registration gives 'input out of range' error message"

### Mazda Coverage

• 5 new Actuation type special tests including ABS Booster Solenoid Current, All Segments, Gear Indicator, Left Rear Brake Pressure and Right Rear Brake Pressure

### Nissan Coverage

- 2 new Adjustment type special tests for Calibrate Yaw Rate Sensor and Idle Air Volume Learn
- 3 new Actuation type special tests for VSC/TRC Solenoids
- Special test fixes/improvements:
  - Throttle Learn fixed an issue where the test would time out and not complete successfully
  - Idle Air Volume Learn fixed an issue where the test would time out and not complete successfully

### Toyota Coverage

- 5 new systems covered
- 5 new vehicle-ECU configurations
- 6 new Adjustment type special tests for Air Bleed tests, Calibrate Yaw Rate Sensor and Write VIN
- 28 new Actuation type special tests for ABS Solenoids, Alternator Voltage Control, Fuel Pump Duty Control and Indicator lamp tests
- Special test fixes/improvements:
  - Many Toyota/Lexus vehicles fixed "VVT control test not working properly"
- Other fixes/improvements:
  - o 1998-1999 Toyota vehicles fixed "Cylinders 5 and 6 misfire data not being shown"



- o 2005 Sienna 3.3L Fixed "no misfire counters listed"
- o 1998-1999 Camry ABS fixed "incorrect cable adapter being displayed"
- 1999 ES300 3.0L fixed "O2 sensor 1 and sensor 2 are reversed"

### New Coverage – USA European

### Audi Coverage

- New coverage for Battery Replacement test in CAN GATEWAY module for 2007-2013 vehicles
- 164 new systems covered
- 188 new vehicle-ECU configurations
- 13 new Adjustment type special tests for Battery Replacement, Auto Trans Kick-Down (TCM), Brake Pressure Sensor Calibration, Calibrate Lateral Acceleration Sensor, EPB Function Test and Readiness Test
- 4 new Actuation type special tests for Fuel Pump and Intake Manifold Runner
- Special test fixes/improvements:
  - o Parking Brake tests fixed a communication issue with the Parking Brake controller
  - o Output Test Mode fixed issue where actuator descriptions were not being shown
  - o Controller Coding fixed "displays Special Test Error"
  - $\circ$   $\;$  Improved error messaging when communication errors are encountered
- Communications fixes/improvements:
  - o 2010 A5 ENGINE fixed "all special tests not working"
  - o 2013 A4 Quattro ENGINE fixed "will not clear codes"
  - o 2004 A4 AIRBAG fixed "was able to read DTC but showed no description"

### BMW/Mini Coverage

- Expanded coverage for 1995-2014 MODEL YEAR for Doors, Seats, Immobilizer, Lights type of controllers
- 495 new systems covered
- 2,537 new vehicle-ECU configurations
- 10 new Adjustment type special tests, including:
  - o Distribution Gearbox Coding Data Reset Control, ECU Reset
  - o ABS Clear Internal Memory of Sensor Cluster
  - Parking Brake EMF Go Into Installation Position
  - o Instrument Cluster Oil Service Reset
  - o Air Conditioning Diagnostic test mode reset, Heater Locking Reset, LIN-bus Reset
  - o Others Tailgate Control Unit Reset
- 385 new Actuation type special tests, including:





- **Engine** Crankcase Vent Heater, Exhaust Flap, Fuel Injector, Fuel Tank Vent Valve, Throttle Valve, Water Pump Control
- o Transmission Selector Lever Lock, Pressure Control Valve tests
- **ABS/DSC** Clutch Control, Pump Control
- Airbag Lamp tests
- **Air Conditioning** Panel and Display Button tests, Climate Select, Control ELSV Normalization, Control SHZH, Defrost, PTC Control, PTC Set Value
- Central Electronics Lamp and Light tests, Window tests, Lock tests, Rear Lid, Washer Pump
- o Door Modules Mirror tests, Window tests and Lock tests
- Seat Modules Backrest Adjust tests, Heater tests, Angle Adjust tests and Height Adjust tests
- Light Module Lamp and Light tests, Window tests, Lock tests, Rear Lid and Washer Pump
- Others Active Roll Stabilization tests, Central Control Unit button and knob tests, Light Module - Lamp and Light tests, Lower Control Module - Seat Heating tests and Tailgate Lift Module tests

### Fiat Coverage

2 new Actuation type special tests for Tire Pressure Warning lamp

### Mercedes Coverage

- Expanded coverage for 2000-2013 MODEL YEAR for Doors, Seats, Audio, Cruise Control, Lights, Park Assist type of controllers
- 859 new systems covered
- 5,061 new vehicle-ECU configurations
- 32 new Adjustment type special tests, including:
  - o Electric Parking Brake Move To Assembly Position
  - Air Suspension Move To Calibrated Vehicle Level (Automatically)
  - Door Control Adjust Mirror tests and Clear Stop Settings
  - **Seat** Seat Height Adjustment tests, Seat Angle Adjustment tests and Steering Column Adjustment tests.
- 602 new Actuation type special tests, including:
  - o Instrument Cluster Lamp and Light tests and Display tests
  - o Door Modules Mirror tests, Window tests and Lock tests
  - Seat Modules Backrest Adjust tests, Heater tests, Angle Adjust tests and Height Adjust tests

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Headlamp Modules - Headlamp Aim tests and Swivel Cornering tests



- Others Signal Acquisition Modules Lamp, Window and Wiper tests, Parktronic tests, Rear Control Panel tests and Upper Control Panel tests
- Special test fixes/improvements:
  - o Added Electric Parking Brake Move to Assembly Position test
  - Added Move To Calibrated Vehicle Level (Automatically) test for Suspension systems
  - o Improved error messaging when communication errors are encountered

### Volkswagen Coverage

- New coverage for Battery Replacement test in CAN GATEWAY module for 2007-2013 vehicles
- 187 new systems covered
- 187 new vehicle-ECU configurations
- 24 new Adjustment type special tests for Battery Replacement, Auto Trans Kick-Down (TCM), Brake Pressure Sensor Calibration, Calibrate Lateral Acceleration Sensor, EPB Function Test, Yaw Rate Sensor and Readiness Test
- 4 new Actuation type special tests for Fuel Pump and Intake Manifold Runner
- Special test fixes/improvements:
  - Parking Brake tests fixed a communication issue with the Parking Brake controller
  - **Output Test Mode** fixed issue where actuator descriptions were not being shown
  - o Improved error messaging when communication errors are encountered
- Communications fixes/improvements:
  - 2011 Tiguan PARKING BRAKE fixed "Communication error is presented when attempting to enter this module".

### Volvo Coverage

- Expanded coverage for 1999-2012 MODEL YEAR for Doors, Audio, Lights, Media, Park Assist type of controllers
- 317 new systems covered
- 932 new vehicle-ECU configurations
- 143 new Actuation type special tests including:
  - **Xenon Light Module** Move Head Light Aim To Maximum Pos. and Move Head Light Aim To Minimum Pos.
  - **Door Control** Lock tests
  - Others Audio and Media module tests, Climate Control Unit button tests, Infotainment Control Module - button and display tests

Thank you for your patronage!