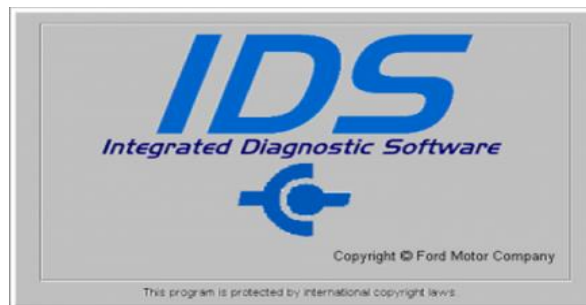


General Service Bulletin (GSB):	Module Programming
GSB Overview:	This General Service Bulletin will cover the proper tool usage along with programming procedures to use and tips on how to perform these procedures
NOTE: This information is not intended to replace or supersede any warranty, parts and service policy, Work Shop Manual (WSM) procedures or technical training or wiring diagram information.	

### **This General Service Bulletin covers the following topics:**

- 1. Where to go in the Integrated Diagnostic System (IDS) Tool to Access Module Programming**
- 2. The Different Module Programming Types**
  - Programmable Module Installation
  - Module Reprogramming
  - Programmable Parameters
  - As-Built
  - Central Car Configuration
- 3. Module Reprogramming/Programming Tips**
- 4. Module Programming Failures and Corrective Actions**
- 5. Detecting Unauthorized/Non-Factory PCM Calibrations**



# “Module Programming”

## Module Programming Menu

- Module Programming Menu (figure 1) is available in the Toolbox tab after starting a session with a vehicle.

**NOTE:** The module programming tab is disabled when a manual vehicle session is started

- When selecting the Module Programming Menu (figure 2) you will see 4 tabs

**NOTE:** Some tabs may not be present on all vehicles.

- Programmable Module Installation (PMI)
- Module Reprogramming
- Programmable Parameters
- As-Built

Figure 1

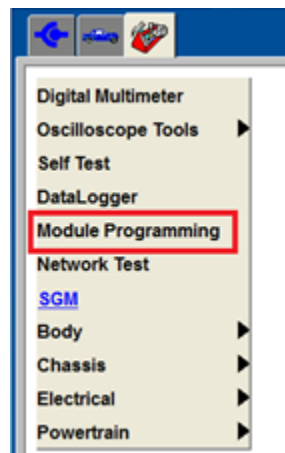
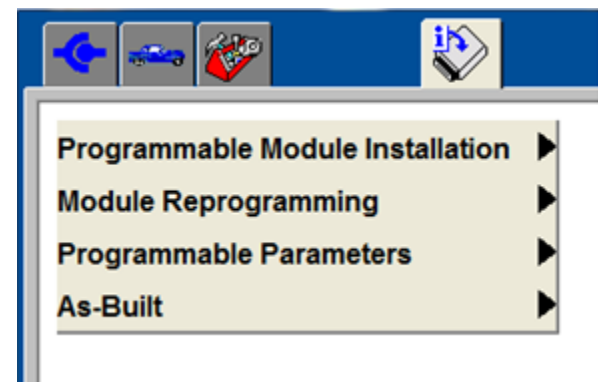


Figure 2



# “Module Programming”

## Programmable Module Installation (PMI)

- **When replacing a module, this function ensures the correct software/calibration and configuration data are loaded onto the new module. This is required regardless of whether or not the original module is available.**
  - **Software/calibration files are what determine how a module processes data and commands outputs. PMI downloads these files from a Ford server, then loads the files to a new module through software download or “flash”.**
  - **The configuration data is vehicle specific, and provides reference points for the software about a vehicle’s build level or option content – including customer preference settings. Configuration data is “inhaled” or copied from the original module and “exhaled” or written to the new module.**

**Note: PCMs support flash and configuration, but other modules may support only one or the other. PMI will automatically determine what is necessary.**

# “Module Programming”

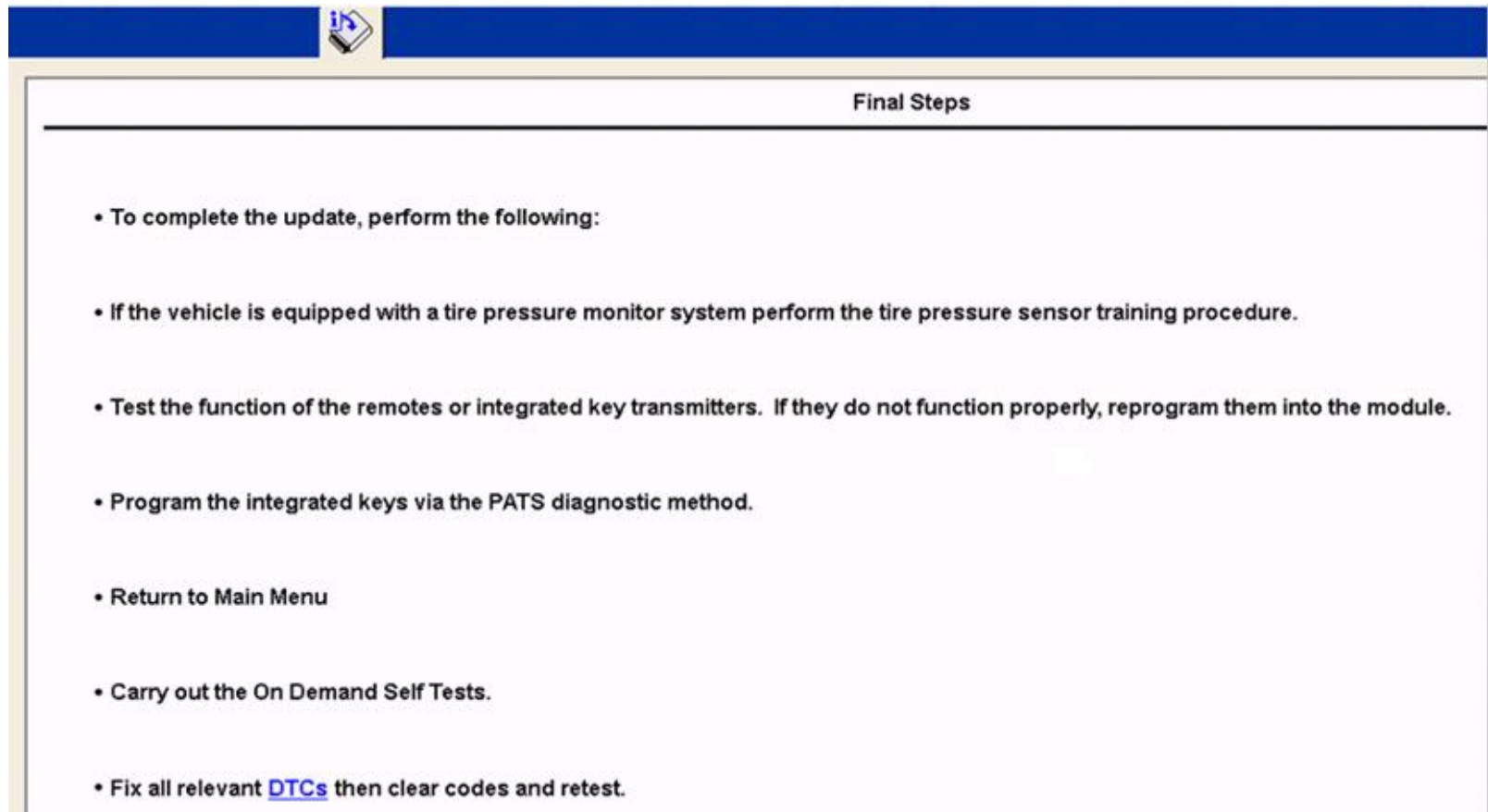
## Programmable Module Installation (PMI) (continued)

- **When running PMI, start the IDS session with the original module installed in the vehicle. Vehicle ID will inhale the original software/calibration part numbers, and configuration data.**
  - **PMI will compare the original part numbers to the newly installed module to determine if it is the correct part, and to determine if it requires a software flash (it may already have the appropriate software).**
  - **The configuration data will be stored and later exhaled to the new module. This ensures customer preference (daytime running lights, belt minder, etc) and dynamic data (oil minder, transmission characterization, etc) will carryover to the new module.**
- **Starting a session and running PMI when the original module does not communicate, (or is not available) creates the need for IDS to pull part numbers and configuration data from As-built. This will occur automatically during PMI and if not, you will be referred to the As-Built menu. See page 7 for more info on As-built.**

# “Module Programming”

## Programmable Module Installation (PMI) (continued)

After the calibration and configuration have been loaded and checked, the Final Steps screen will appear giving additional steps required to complete the installation process. Refer to the workshop manual for complete installation procedures required for the module being replaced.



# “Module Programming”

## Module Reprogramming

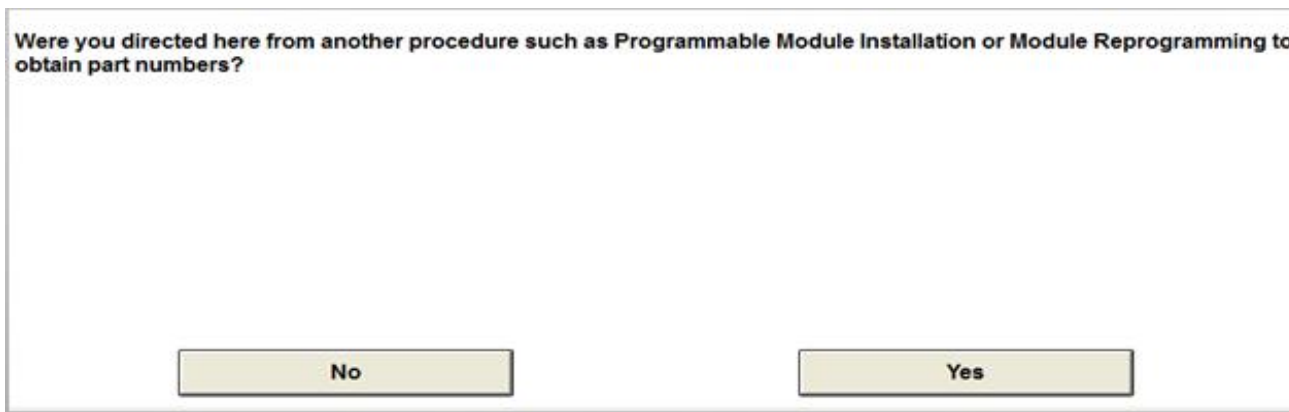
- **Module Reprogramming will update the software/calibration of a module when directed by a FSA, TSB, SSM or Workshop Manual procedure. In rare cases it may also update configuration data inside the module.**
- **Module Reprogramming will look at the current software levels within the module (captured during Vehicle ID) and compare this information with the IDS database. If there is an update, it will be displayed on the IDS screen.**

***NOTE: Module Reprogramming should not be attempted unless directed by a Technical Service Bulletin(TSB) , Special Service Message(SSM), Field Service Action(FSA) or the Workshop Manual.***

# “Module Programming”

## As-Built

- **As-Built data is a record of the module part numbers and configuration data created at the assembly plant for each vehicle. This is done as a backup resource in the event that PMI must be performed without data from the original module.**
  - **Note: As-Built data may not be available or required for all modules**
- **PTS will display only the raw As-built configuration data(the data found on PTS), but the part numbers are also included when IDS downloads the As-built file for the VIN.**
- **The As-built menu option lets you decide whether you want to utilize part numbers or configuration data from the As-built file. This will overwrite the data gathered (if any) for the selected module during Vehicle ID.**
  - **In the figure below, answer Yes to obtain part numbers, and answer No to restore factory configuration data.**

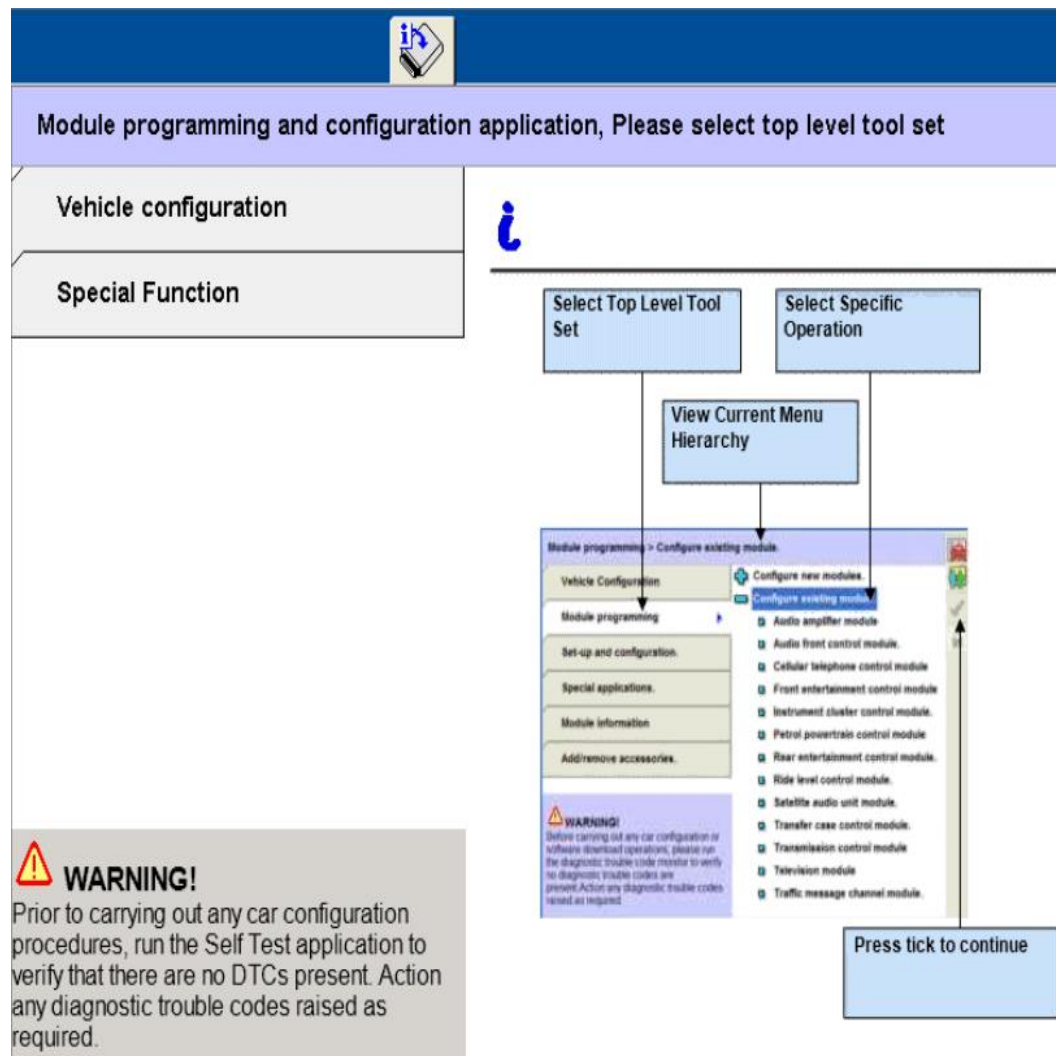


Were you directed here from another procedure such as Programmable Module Installation or Module Reprogramming to obtain part numbers?

No Yes

# “Module Programming”

## Central Car Configuration

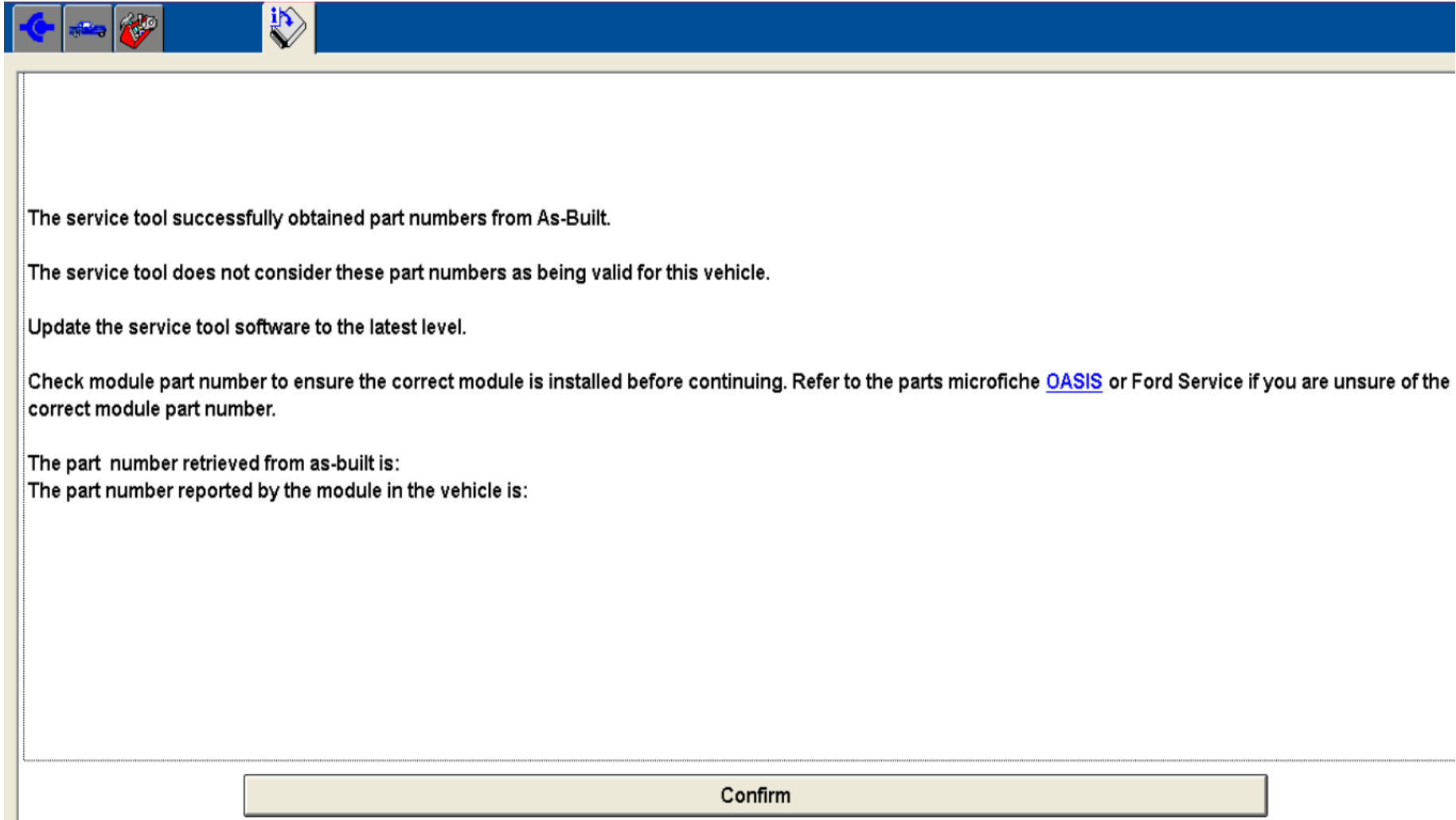


- This programming jointly programs the Instrument Panel Cluster (IPC) and the Body Control Module (BCM). This is required after either module is replaced. Refer to workshop manual removal and installation procedures.
- Provides another means for changing customer preference parameters. Ex: Remote Start, DRLs, Climate Control parameters( if applicable to vehicle). Refer to workshop manual section 418-01 a for list of changeable parameters on the vehicle.



# “Module Programming”

## Part Number Error Message During Programming



The screenshot shows a software window with a blue title bar and a toolbar containing icons for navigation and help. The main content area displays an error message in black text. At the bottom, there is a large, light-colored button labeled "Confirm".

The service tool successfully obtained part numbers from As-Built.

The service tool does not consider these part numbers as being valid for this vehicle.

Update the service tool software to the latest level.

Check module part number to ensure the correct module is installed before continuing. Refer to the parts microfiche [OASIS](#) or Ford Service if you are unsure of the correct module part number.

The part number retrieved from as-built is:  
The part number reported by the module in the vehicle is:

Confirm

# “Module Programming”

## **Part Number Errors During Programming (Continued)**

During Programmable Module Installation(PMI) and during Module Reprogramming, the IDS will read the part number of the module installed and verify it's correct for this model/year. If IDS does not recognize the part as being correct for the model/year, programming will end with an error message.

### **Corrective Actions;**

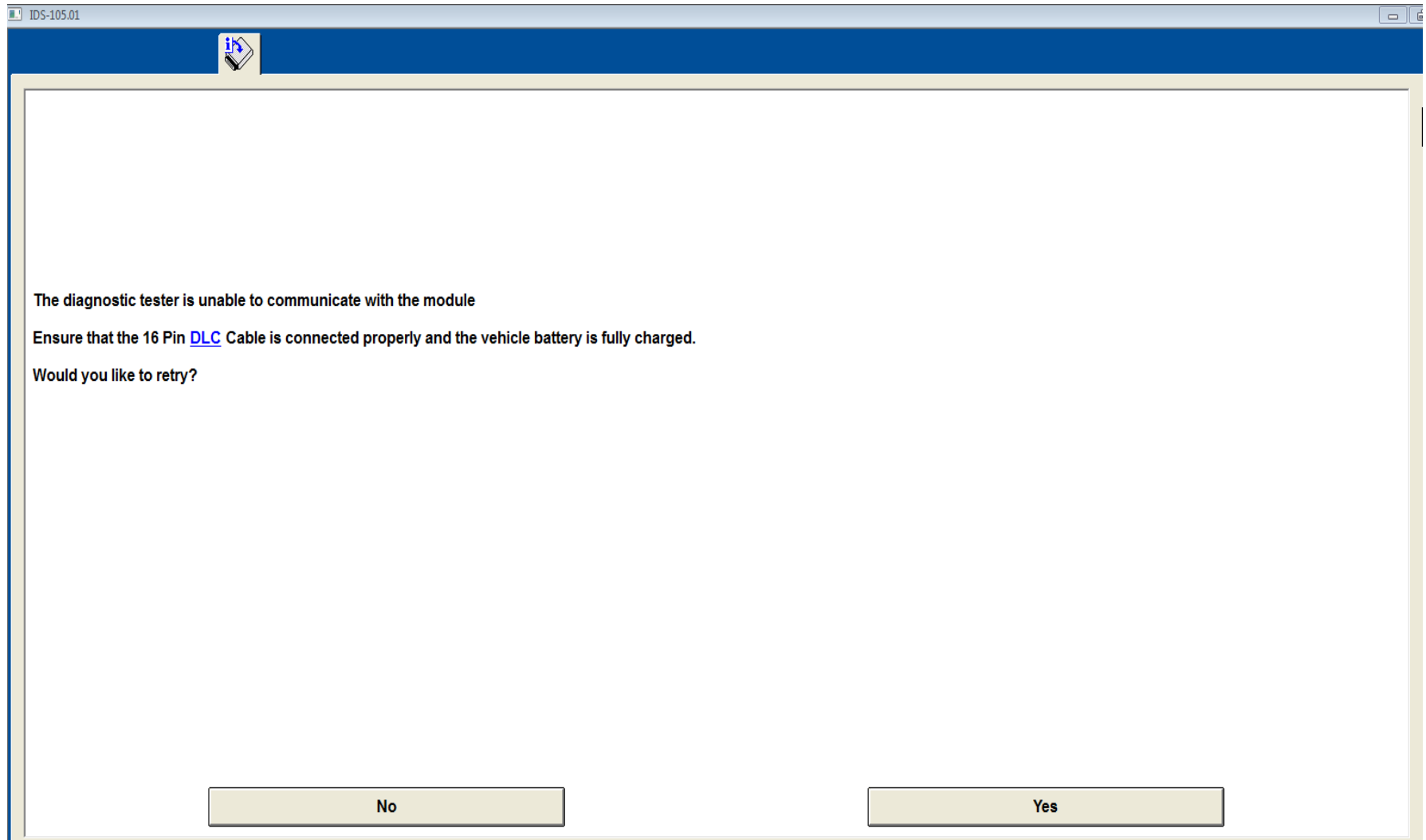
- . Verify a new IDS session started for the VIN you are working on
- . Verify your IDS is at the latest available level
- . Verify the part number of the module installed is correct
- . Verify the Powertrain Control Module(PCM) has not been tuned or modified.
  - The IDS session is largely based on the PCM software and calibration strategies.
- . Perform as-built programming on the module that failed and when asked the question in the below image, answer it 'yes'. When done, return to the programming procedure that failed.

Were you directed here from another procedure such as Programmable Module Installation or Module Reprogramming to obtain part numbers?

No Yes

# “Module Programming”

## VCM Communication and Module Communication Error Messages



# “Module Programming”

## VCM Communication and Module Communication Error Messages

The IDS will verify the module you are trying to program is communicating numerous times during programming. If you can't talk to the module you are programming over the network, you can't give it data during programming.

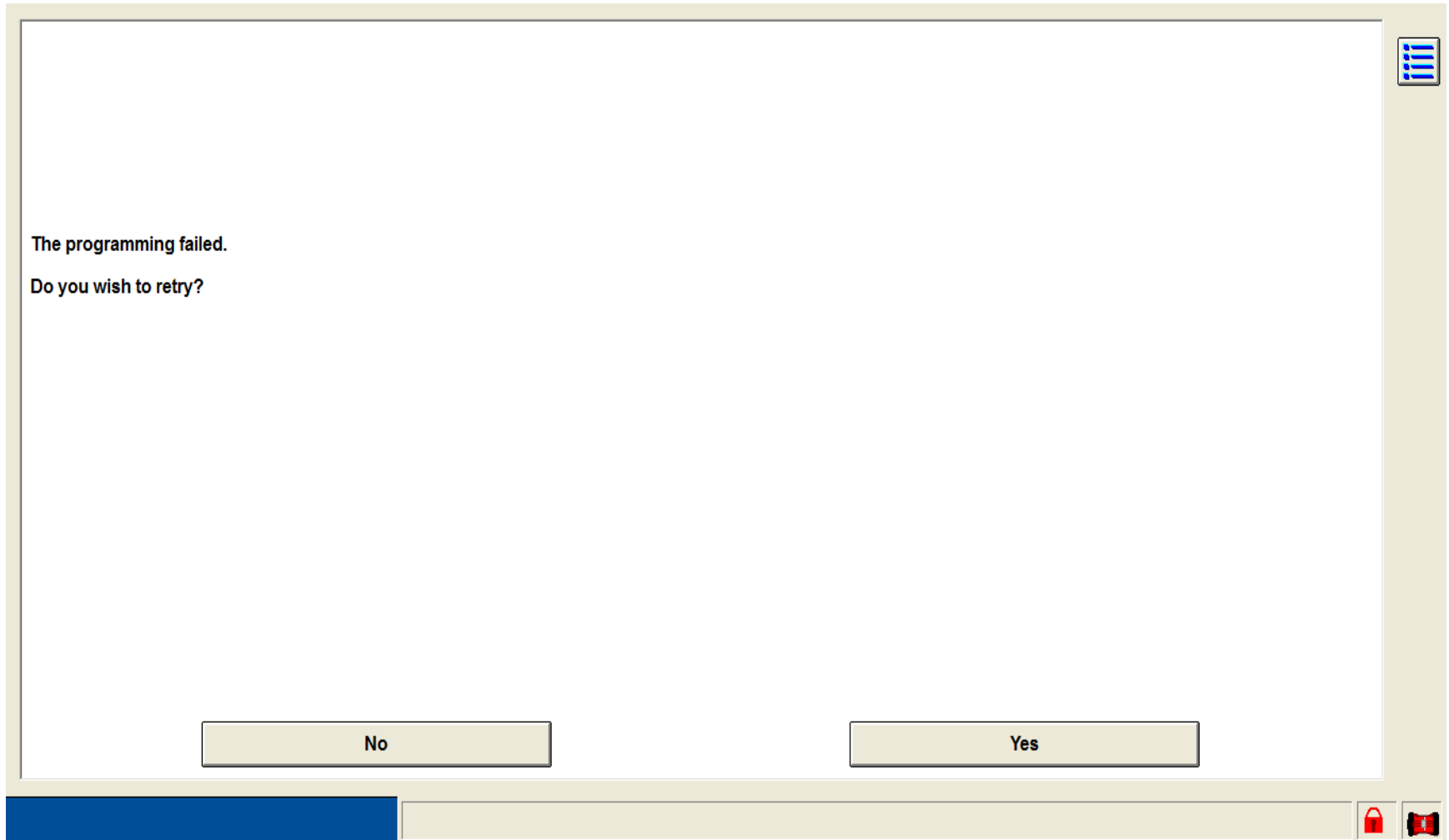
### **Corrective Actions;**

- . Verify the 12 volt vehicle battery is fully charged
- . Verify the correct Vehicle Communication Module(VCM) is being used for the vehicle
- . Attempt disconnecting and reconnecting the VCM to the vehicle and computer
- . Try using a different VCM
- . Verify that the Data Link Connector(DLC) has power to pin 16 and ground at pins 4 and 5.
- . Verify that the module is passing a network test
  - Refer to workshop manual section 418-00 > Diagnosis and Testing and any published TSBS, SSMs, or GSBs for communication concerns.

**Note: Replacement modules should be capable of passing a network test before programming.**

# “Module Programming”

## Module Configuration Has Failed Error Message



# “Module Programming”

## Module Configuration Has Failed Error Message

**This Error Message may be encountered during PMI, As-Built programming or during Module Reprogramming. This error message is encountered when the is trying to load the Configuration Data(As-Built found on PTS) to the module.**

### **Correct Actions:**

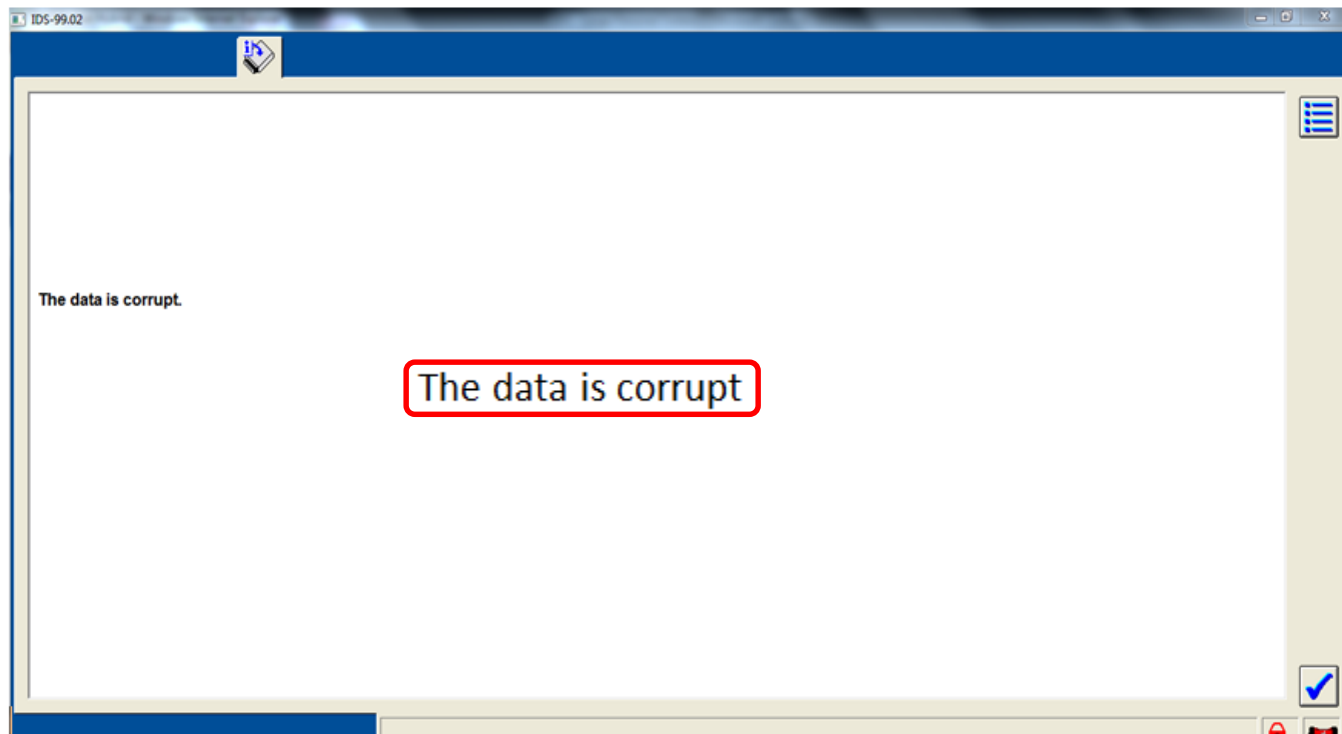
- **Verify the ignition is on. The ignition must be on for the module to complete this step in programming**
- **If the ignition has timed out and shut off on a push button start vehicle, cycle the ignition off, then on, and then click ‘yes’ to retry. This error message will generally provide the option to retry**
- **Verify the module is capable of passing a network test. If the module isn’t communicating, it won’t accept the data the IDS is sending to it**
- **Verify that the battery voltage is within typical operating range and that the battery charger is properly installed on the vehicle(should be installed with negative cable of charger to chassis ground, not on the battery negative post)**

# “Module Programming”

## As-Built “Data Corrupt”

- This message is displayed when the IDS has either not found the data or, the data does not match the vehicle session.
- Verify that a brand new IDS session was started on the vehicle. Verify the VIN displayed is correct on the vehicle confirmation screen and was correct in the beginning steps of the module programming process being performed.

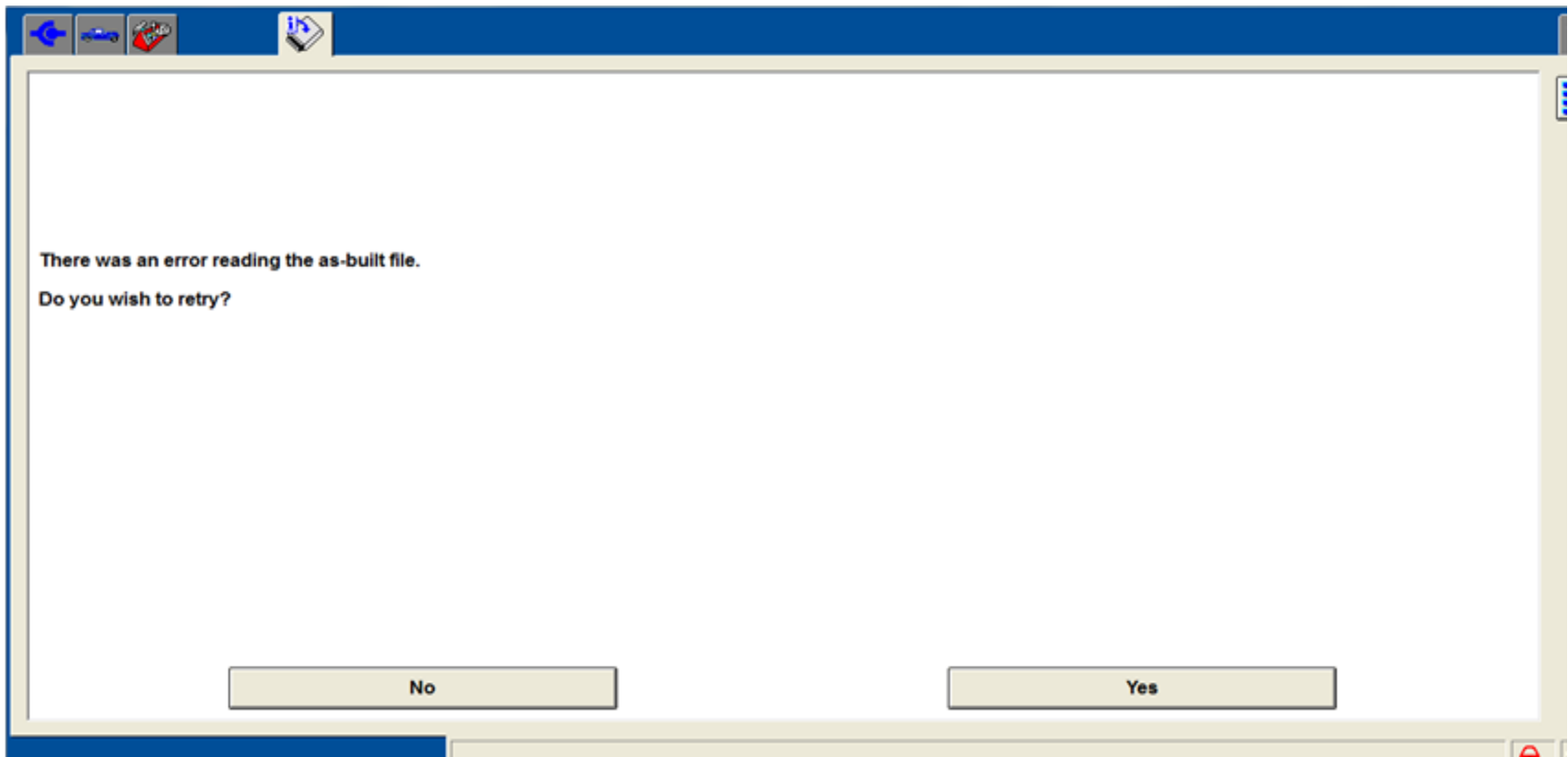
**NOTE: If the data is missing from PTS > OASIS > As-Built, refer to page 16**



# “Module Programming”

## How to obtain Missing As-Built Data from PTS

- Begin the Programmable Module Installation(PMI) on the module missing data
- When the error below is encountered, answer this question ‘no’
- This will force IDS to request the data





# “Module Programming”

## How to obtain Missing As-Built data from PTS(Continued)

- Navigate to PTS > Technical Assistance > As-Built Request Status and search for the VIN.  
\*\* this screen is shown below
- The requester will be listed as ‘IDS’ and the “Status” will change to ‘Answered’ when the data is available. Once answered, you can use the IDS that programming failed on and attempt the PMI one more time as normal.

2013 Fusion Hybrid  
3FA6P0PU2DR171911

PTS Professional Technician Society

Home Vehicle ID OASIS TSB/GSB/SSM Workshop Wiring PC/ED Service Tips Owner Info PDI SLTS ToolBox

Tech Central Rotunda Technical Training Technical Assistance Quick Links SLTS SSSC

Welcome dwood10

### VIEW ASBUILT REQUESTS

Number of days to view: 5, 10, 30, 60, All

Open Narrow by PACODE Submit

Date Range: BETWEEN 2/26/2016 AND 3/3/2016

VIN	Vehicle	PACode	Module	Requestor	Submitted	Answered	Status	Action
3FA6P0PU2DR171911	0	65099	BCE_MODULE/737-01-01	IDS	3/2/2016 3:20:58 PM		Open	n/a
8XDZU73E438A11803	2003 Explorer	01009	28	c-cruz59	3/2/2016 3:13:59 PM		Open	n/a
1FAHP3M26CL327958	0	23i548	NODEID/730/F113	IDS	3/2/2016 3:12:38 PM		Open	n/a
2LMTJ8LR1GBL41354	0	a6050	BCE_MODULE/760-01-01	IDS	3/2/2016 2:57:37 PM		Open	n/a
1FT8W38TXBEA03780	0	hitechcarcpr	NODEID/726/F16E	FMP	3/2/2016 2:57:34 PM		Open	n/a
1FMSK8HT1GGA56040	0	04687	BCE_MODULE/744-01-01	IDS	3/2/2016 2:50:54 PM		Open	n/a
3LN6L2J95FR625220	0	09358	BCE_MODULE/754-01-01	IDS	3/2/2016 2:29:31 PM		Open	n/a

© Copyright 2000, 2001-2016, Ford Motor Company. All rights reserved. Privacy Contact Us US+USA+DEALERS+EN-US Web Server: WEB2

Done Local intranet | Protected Mode: Off

# “Module Programming”

## Module Programming and Reprogramming Service Tips

**Use the following tips to help ensure programming completes without errors:**

- **Ensure that the session is created (Key ON Engine OFF (KOEO))**
- **Connect vehicle to a battery charger set on the optimal charge setting**
- **Connect the IDS tool (computer) to a power source**
- **Inspect the VCM and cables for any damage and ensure cables remain connected throughout programming**
- **A hardwired internet connection is strongly recommended**
- **Turn off all accessories (radio, heated/cooled seats, headlamps, HVAC, close all doors, etc.)**
- **For Plug-In EVs, disconnect any external EVSEs/HV Charge Cords from the charge port.**
- **Follow all on-screen instructions carefully, especially any key cycle movements the IDS directs you to perform. Allow the startup/power down routines to complete**
- **Disable Microsoft Windows sleep mode, screensaver, hibernation modes**
- **On many vehicles, a validation will be performed of the configuration of other modules on the network by the module being reprogrammed. An overall loss of communication with a module may prevent a module reprogramming action from completing. The cause of the communication concern must be corrected before reprogramming will complete.**

**NOTE: Disconnect any aftermarket items (remote start, alarm, power inverter, insurance devices, etc.)**

# “Module Programming”

## **Recovering a PCM/SJB When Programming has Resulted in a Blank Module**

### **IMPORTANT: Never Delete the Original Session**

1. Obtain the original IDS used when the programming error occurred during Module Reprogramming or Programmable Module Installation (PMI).
2. Disconnect the VCM from the IDS and then the DLC.
3. Reconnect VCM to the IDS and then the DLC. The VCM icon should appear in the corner of the IDS screen. If the VCM icon does not appear, troubleshoot the IDS-to-VCM connection.
4. Attempt to start a new IDS session for the vehicle, if the IDS can read the VIN it will default into the failed programming session. If it cannot read the VIN, locate the original vehicle session used when programming failed. In most cases this would be the last session used. If you cannot locate the original vehicle session, use the session created on the date the programming failed. Using an IDS with the latest release available, sessions with failed programming will be highlighted in **RED**.  
**NOTE:** If the original session is not in the previous list, click the Recycling Bin icon in the lower right of the Previous Sessions screen. This will load any deleted session, double click on the session to restore.
5. Once the session is loaded, the failed process should resume automatically.
6. If programming does not resume automatically, proceed to the Module Programming menu and select the previously attempted process (PMI or Module Reprogramming).
7. Follow all on-screen instructions to complete the programming process. Near the end of programming, IDS will prompt you to select certain parameters. It is important to make a selection for ALL parameters listed, even if the correct selection is highlighted you need to click that selection before clicking the Tick mark to complete the configuration.
8. The last screen on IDS may list additional steps required to complete the programming process. Ensure all applicable steps are performed in the order listed on the screen.

# “Module Programming”

## Detecting Unauthorized/Non-Factory PCM Calibrations

Unauthorized/non-factory PCM calibrations may not be detectable using standard tools or diagnostic equipment. Customer acknowledgement is the only conclusive method to verify an unauthorized PCM calibration has been utilized. Two methods often misused to verify the presence of an unauthorized PCM calibration are:

### The PCM Filename of the software file in the PCM.

Due to the design of unauthorized calibration equipment (Aftermarket Tuners) and the inherent possibility that this equipment will utilize a factory PCM Filename, the PCM Filename cannot be used to verify the presence of an unauthorized calibration. For example, the aftermarket calibration may have the same filename as a valid Ford Motor Company Calibration.

### The Ignition Counter (IGN\_CTR) located in Mode 9

This data displays the number of ignition key cycles since the most recent PCM calibration update. The PCM calibration may be updated at a dealership or a 3<sup>rd</sup> party facility with an IDS or other scan tool causing the Ignition Counter to reset. The accuracy of this value cannot be determined as this value resets with any calibration update.

To ensure an accurate repair and prevent repeat failures, follow any applicable publications in OASIS. If no applicable service publications are available refer to the following:

- Determine extent of damage and complete the repair per the Warranty and Policy Manual and published Workshop Manual procedures.
- After the repair is completed, install the factory calibration in the PCM (use the procedure shown on pg. 10).
- After the PCM calibration is restored, refer the customer to the Warranty and Policy Manual regarding the vehicle warranty and risks of unauthorized calibrations.

# “Module Programming”

## Detecting Unauthorized/Non-Factory PCM Calibrations (continued)

### Returning PCM calibration to the factory setting

- Start a normal IDS session. If a previous session is present, select None of the Above.
- Select “No” when verifying the information on the “Vehicle Specification” screen.
- Enter the Tear Tag into the IDS to identify the vehicle.
  - NOTE: The Tear Tag is located under the As-Built screen from the OASIS tab on PTS.
- There will be a second “Vehicle Specification” screen. Verify information and select “Yes”
- When the session is started, “Module Programming” should automatically begin. If it does not, select Programmable Module Installation (PMI) from the IDS menu and select PCM.

This procedure will only install the latest factory calibration and *will not* verify if an unauthorized calibration was installed. Following the repair, attach the PCM Filename, Ignition Counter and any DTCs to the repair order for documentation.