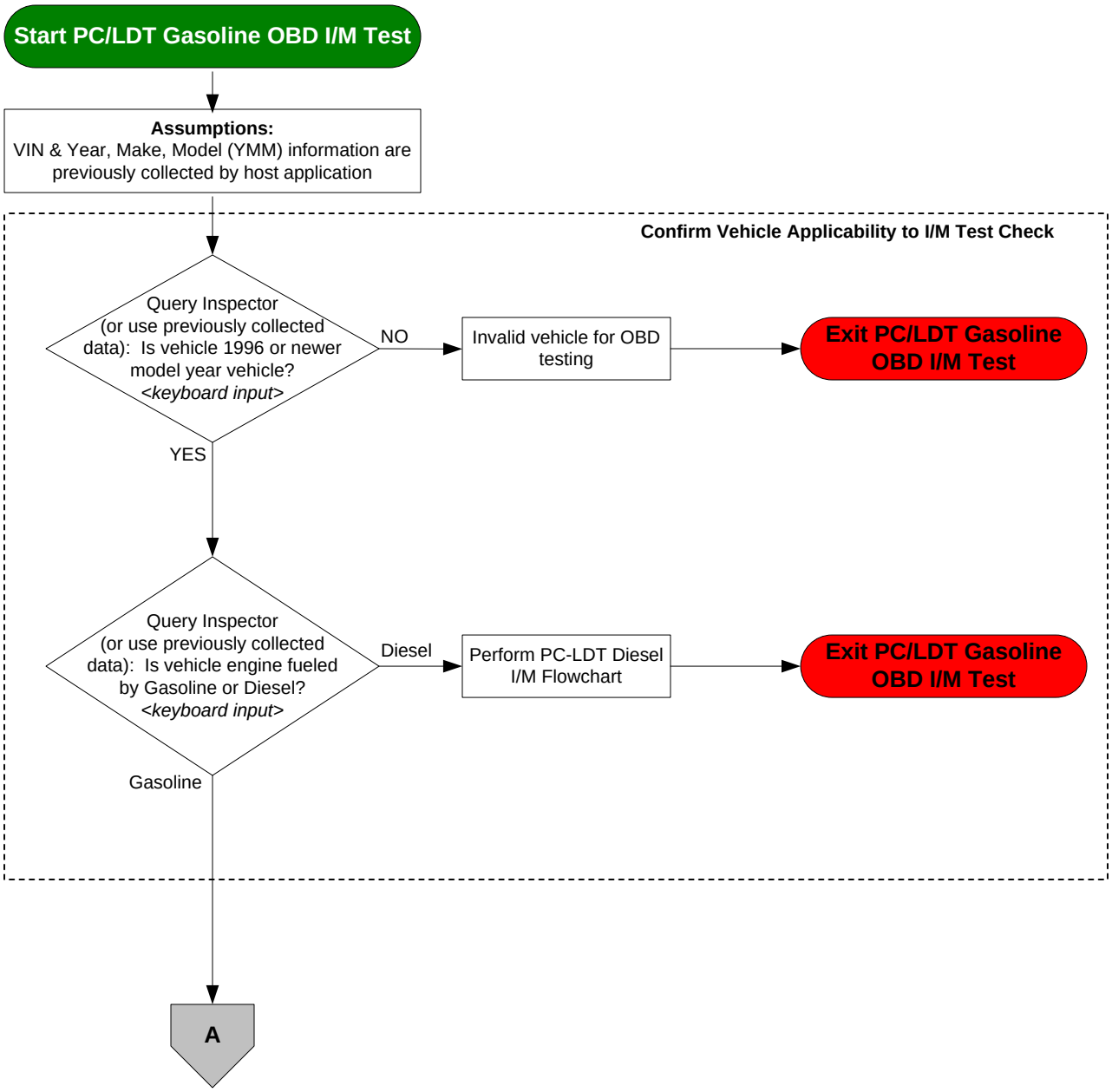
Document Class: ETI Technical Guidance	**Title: Passenger Car/Light Duty Truck OBD Inspection and Maintenance Flowchart**	
	File name: PC-LDT OBD IM Flowchart ver8.3	
Description: This document describes the Inspection and Maintenance process for a passenger car or light duty truck with the OBD II emission system. **Note: please refer to SAE J1962, SAE J1979, SAE J1978, SAE J1850, ISO 9141-2, ISO 14230-4, ISO 15765-4, and CARB rule 1968.1 to interpret this flowchart.**	**Year**	**Date**
	1996+	October 01, 2009

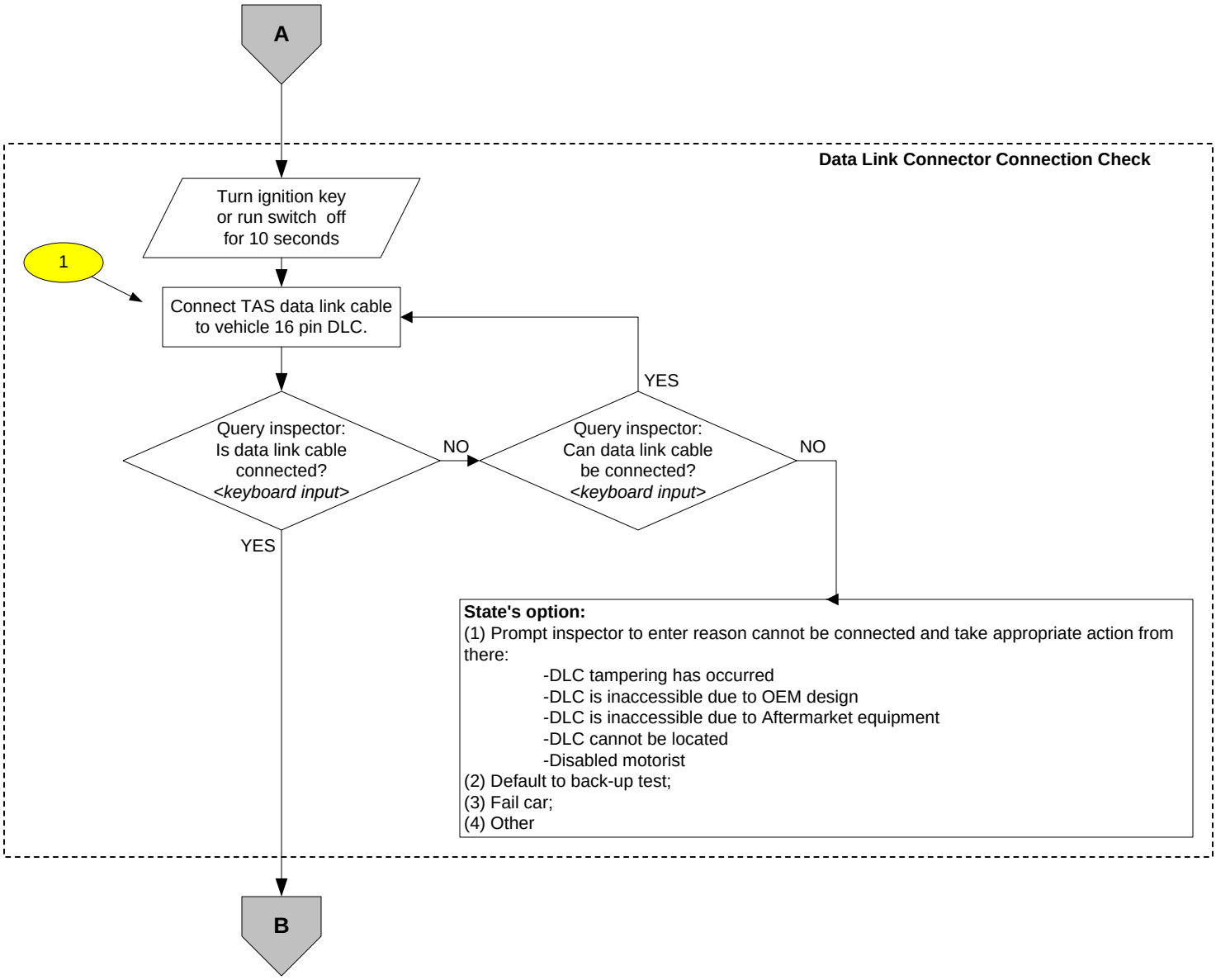
A Vehicle Evaluation Guidance:

Passenger Car and Light Duty Truck OBD I/M (Gasoline) Flowchart

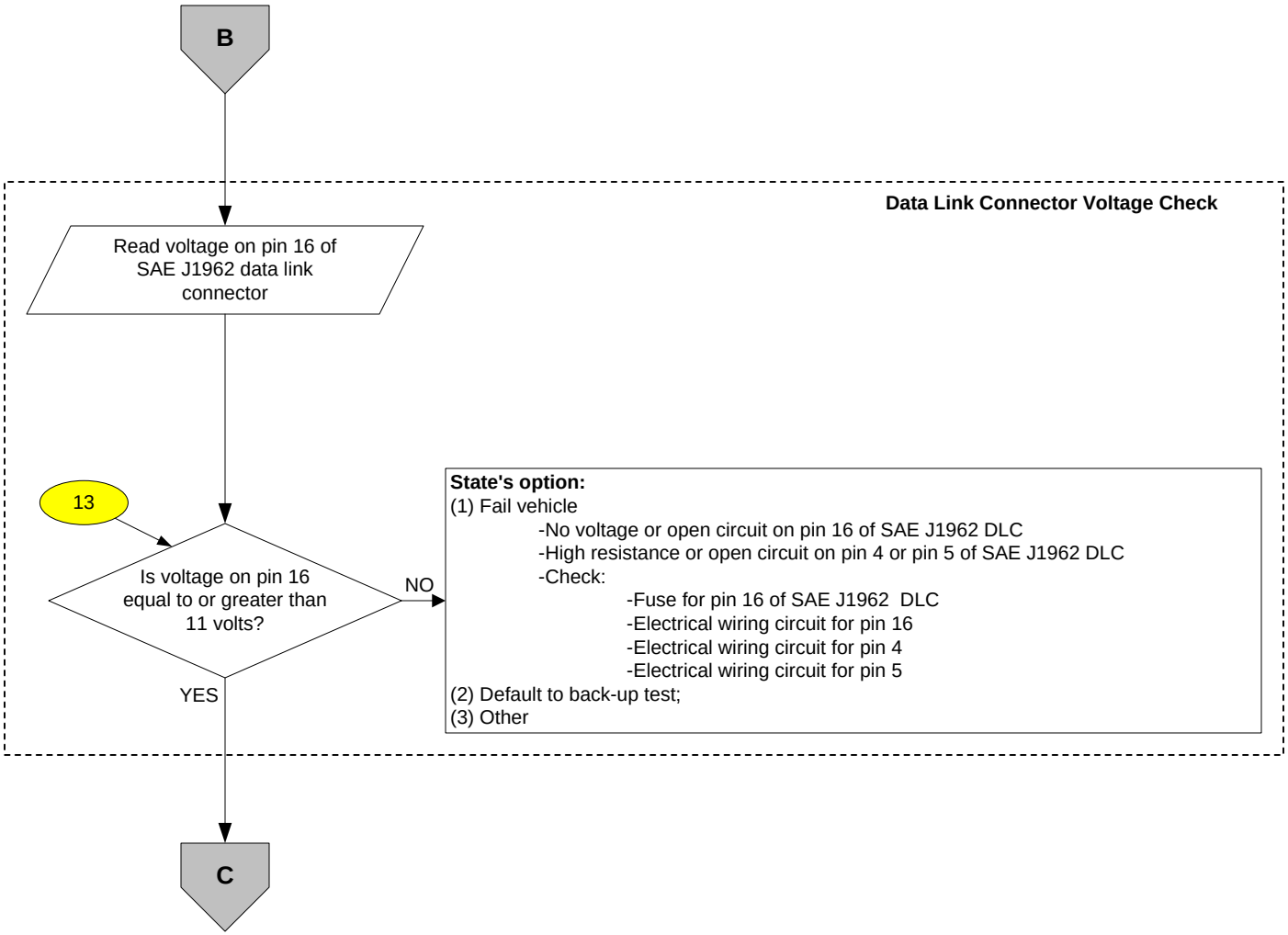
START: CONFIRM VEHICLE



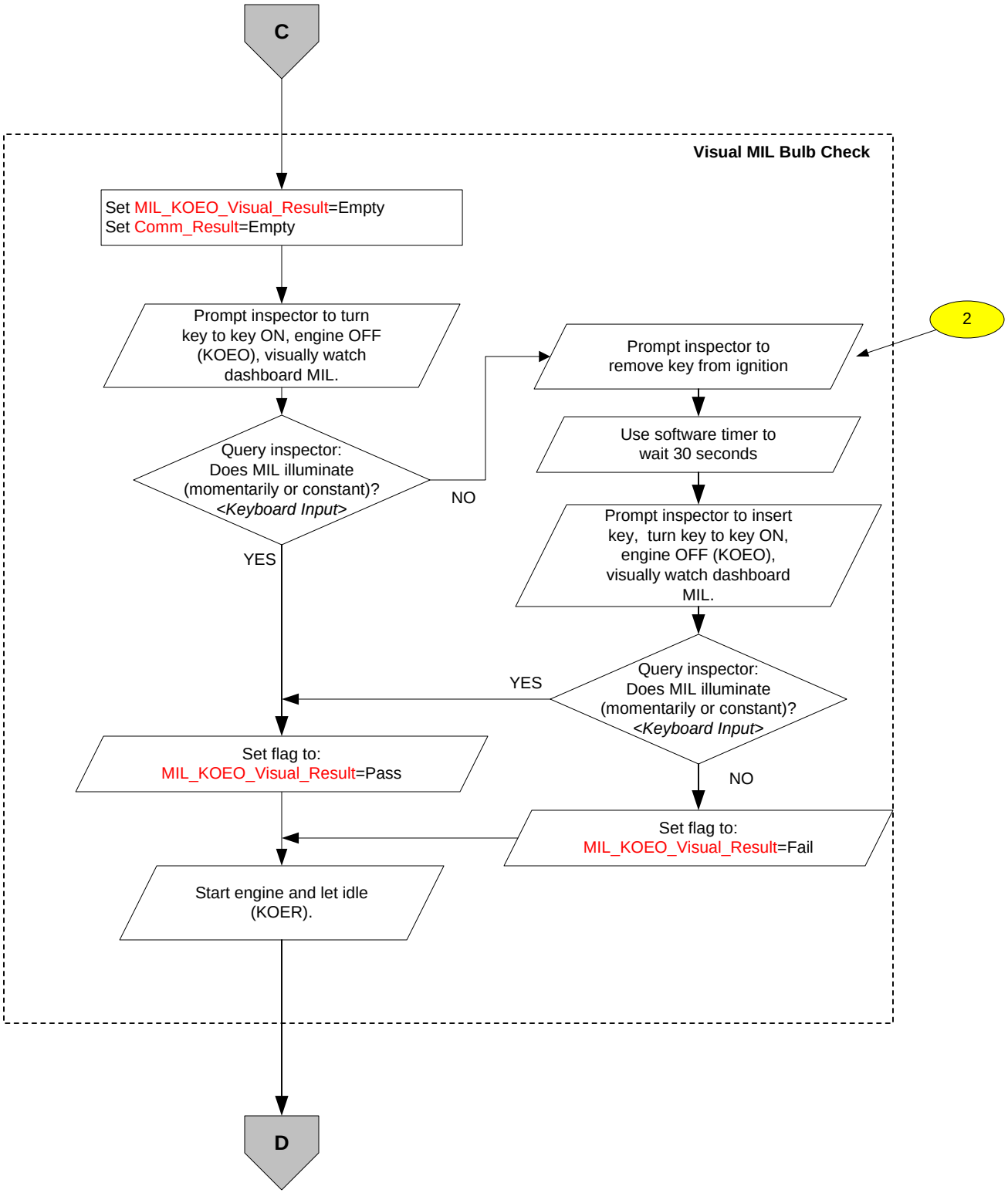
START: CONNECT TO SAE J1962 DLC



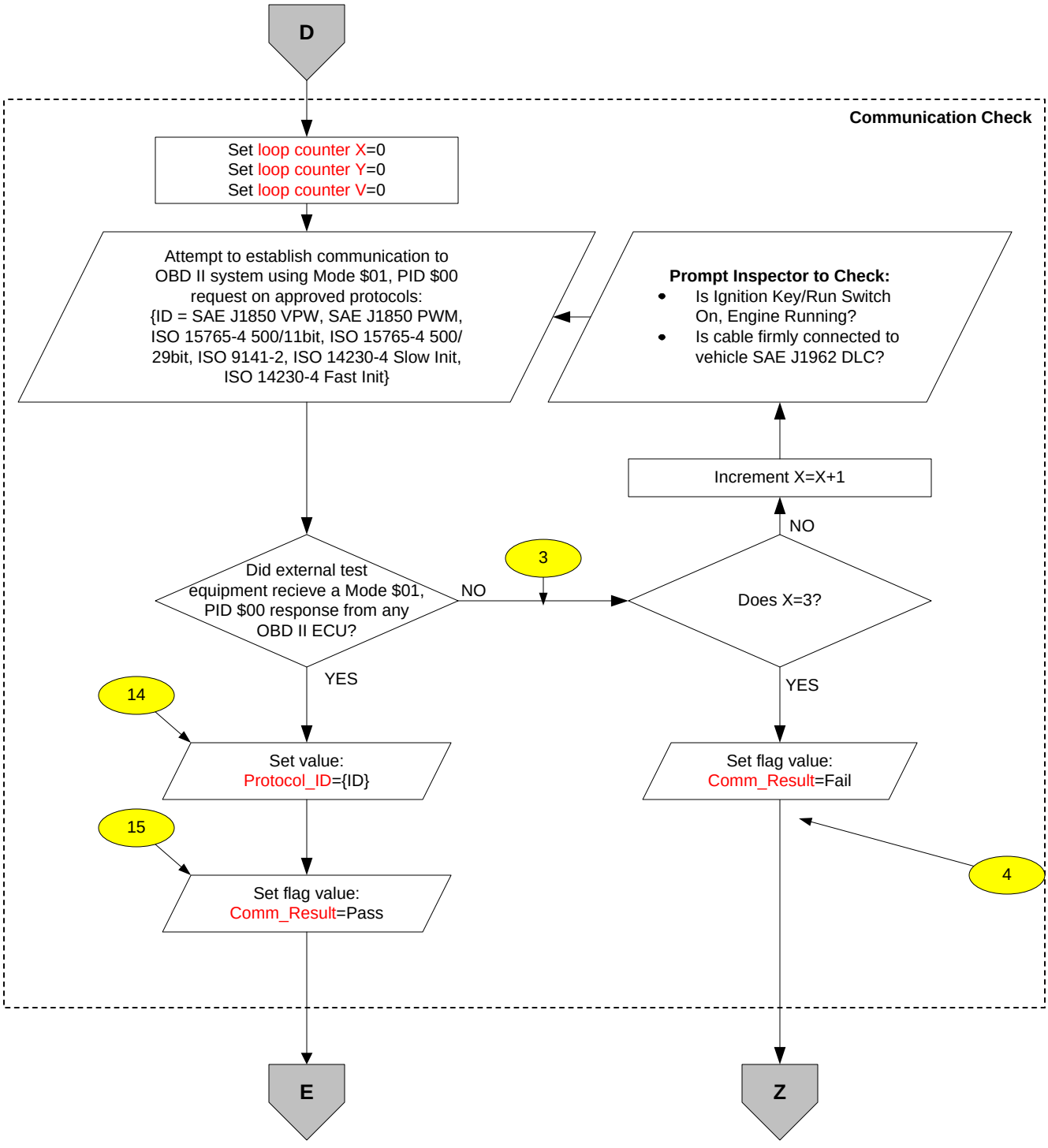
SAE J1962/ISO 15031-3 16 pin DLC Circuit Check



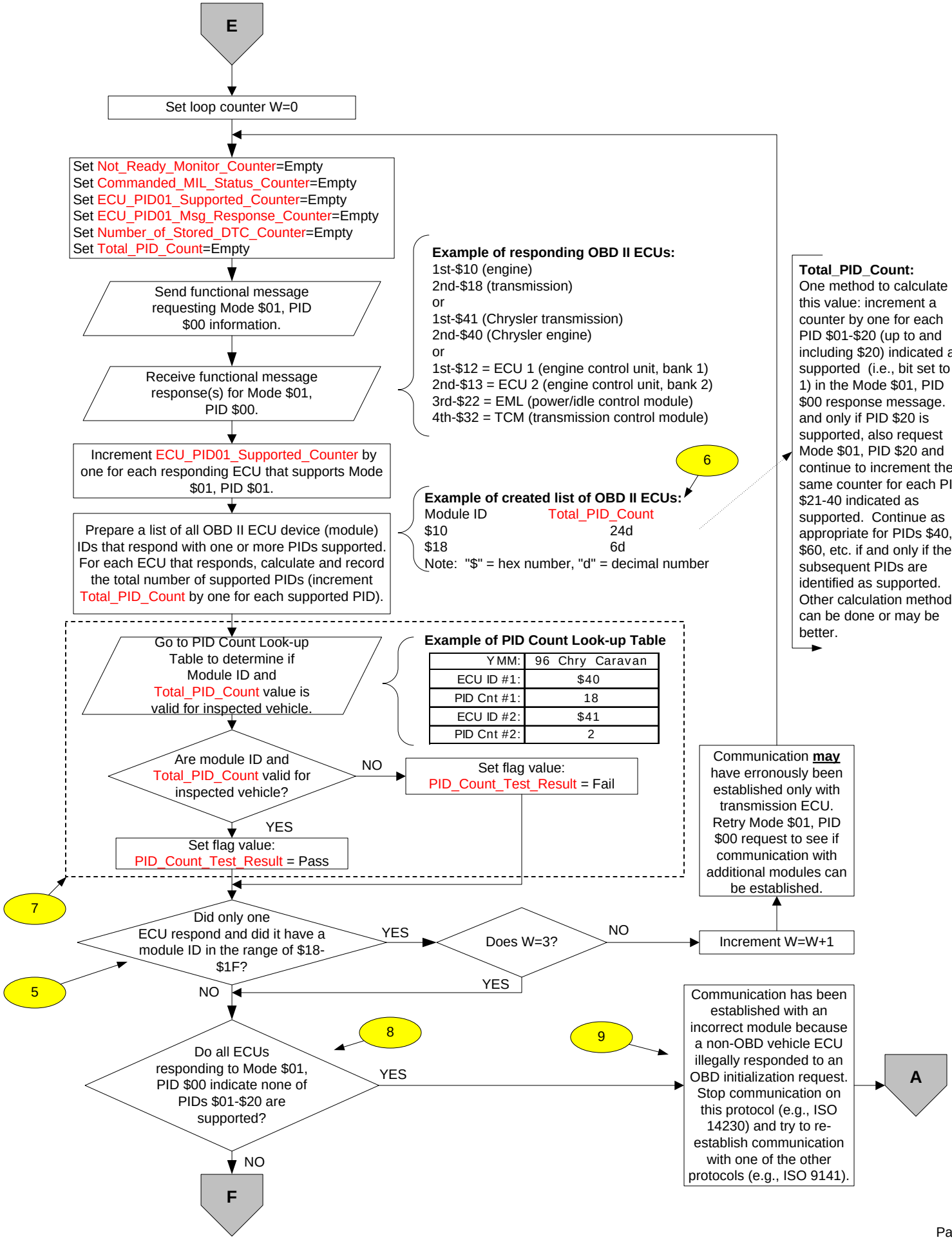
ON-BOARD DIAGNOSTIC MIL CHECK



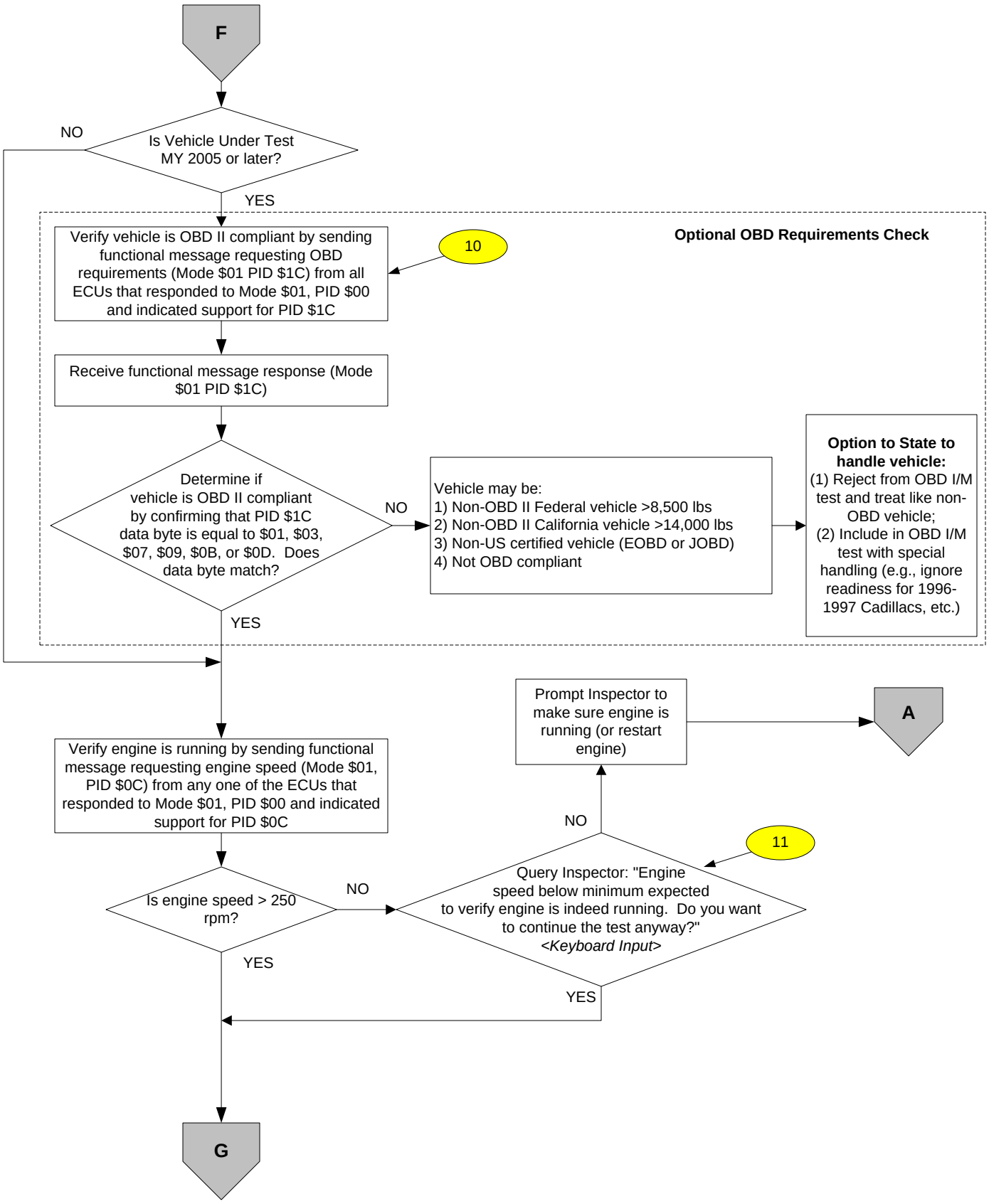
ESTABLISHING COMMUNICATION WITH ON-BOARD DIAGNOSTIC SYSTEM



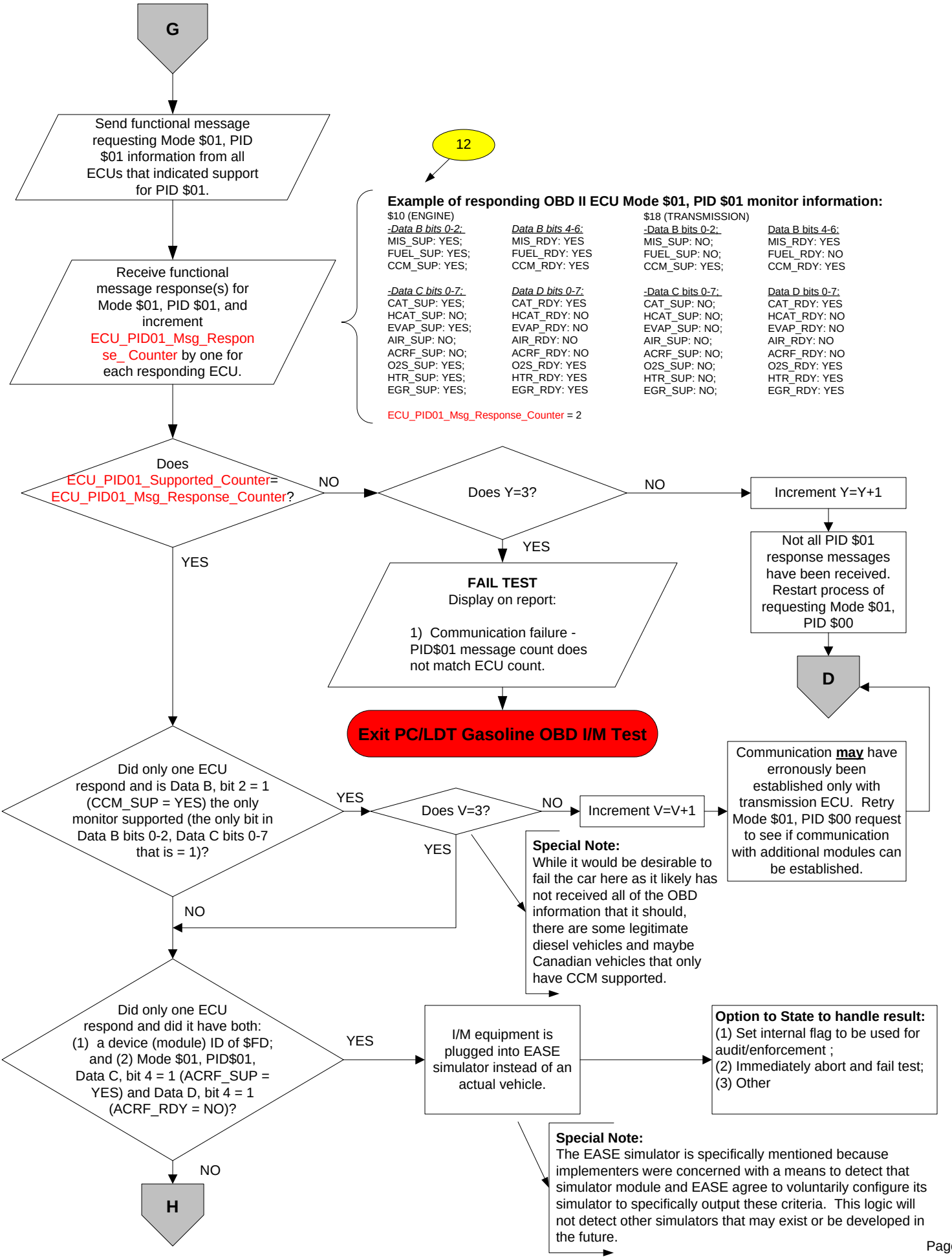
ACQUIRING MODE $01, PID $00 INFORMATION



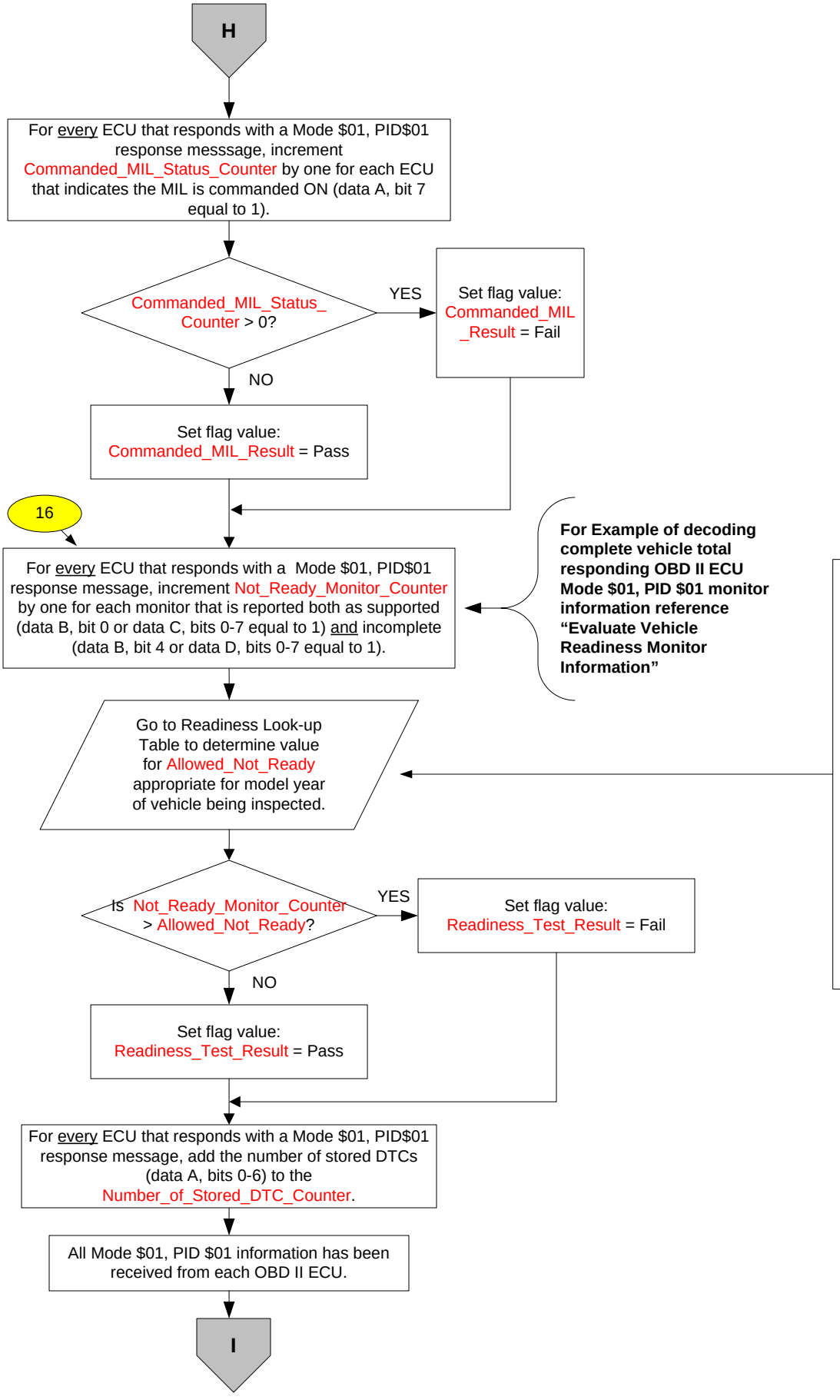
VERIFYING VEHICLE VALID FOR INSPECTION



ACQUIRING MODE $01, PID $01 INFORMATION



PROCESSING PID $01 READINESS INFORMATION



Year:	Allowed_Not_Ready
1996	2
1997	2
1998	2
1999	2
2000	2
2001	1
2002	1
2003	1
2004	1
2005	1
2006	1
2007	1
2008	1
2009	1
2010	1

EVALUATE VEHICLE READINESS MONITOR INFORMATION

Example 1 presents a case where the Vehicle has using 3 responding ECUs – ECM 1, ECM 2, and TCM

Step 1 – determine Supported Readiness Monitors from all responding emission ECUs. Do this by reading data byte B, bits 0-2, and data byte C, bits 0-7:

PID $01 Response Bytes	Monitor	ECU		
		$10 (Engine 1)	$11 (Engine 2)	$18 (Transmission)
Data B bits 0-2	MIS_SUP	Yes	Yes	No
	FUEL_SUP	Yes	Yes	No
	CCM_SUP	Yes	Yes	Yes
Data C bits 0-7	CAT_SUP	Yes	Yes	No
	HCAT_SUP	No	No	No
	EVAP_SUP	Yes	No	No
	AIR_SUP	No	No	No
	ACRF_SUP	No	No	No
	O2S_SUP	Yes	Yes	No
	HTR_SUP	Yes	Yes	No
	EGR_SUP	Yes	Yes	No

Step 2 – Using data from only Supported Monitors, determine which Readiness Monitors are "Ready". Do this by reading data byte B, bits 4-6, and data byte D, bits 0-7:

PID $01 Response Bytes	Monitor	ECU		
		$10 (Engine 1)	$11 (Engine 2)	$18 (Transmission)
Data B bits 4-6	MIS_RDY	Yes	Yes	~~Yes~~
	FUEL_RDY	Yes	Yes	~~No~~
	CCM_RDY	Yes	Yes	Yes
Data D bits 0-7	CAT_RDY	No	No	~~Yes~~
	HCAT_RDY	~~No~~	~~No~~	~~No~~
	EVAP_RDY	No	~~Yes~~	~~No~~
	AIR_RDY	~~No~~	~~No~~	~~No~~
	ACRF_RDY	~~No~~	~~No~~	~~No~~
	O2S_RDY	Yes	Yes	~~Yes~~
	HTR_RDY	Yes	Yes	~~Yes~~
	EGR_RDY	Yes	No	~~Yes~~

Note: ~~Yes~~ or ~~No~~ indicates monitors that do not count because they are "Not supported" in Step 1.

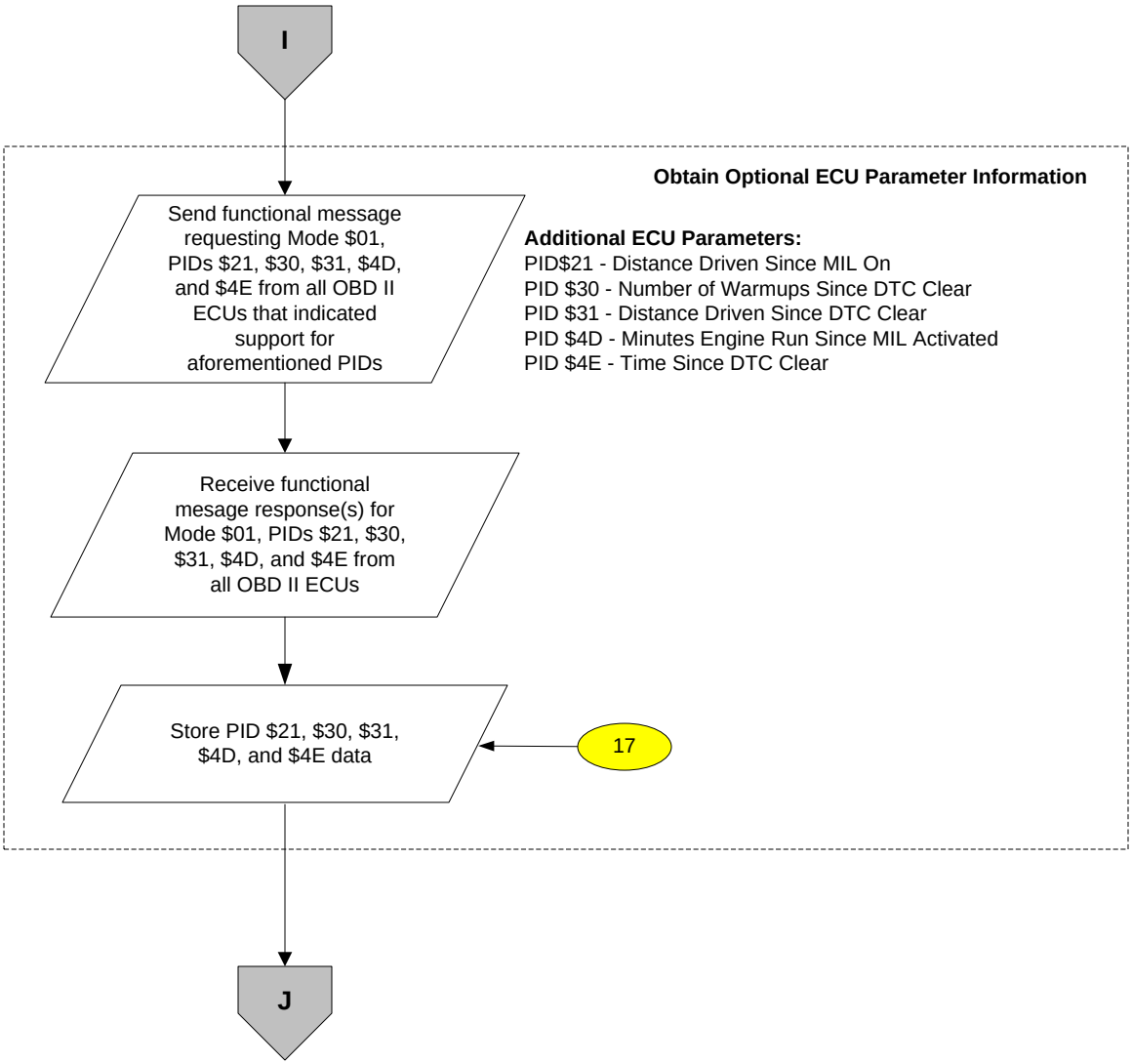
Step 3 – Determine total Vehicle Readiness Monitor Counter by applying "OR" logic to "Ready" data from each ECU. The Example vehicle below describes the case where there are three (3) Readiness Monitors which are "Not Ready"

Monitor	ECU			Vehicle
	$10 (Engine 1)	$11 (Engine 2)	$18 (Transmission)	Combined
MIS_RDY	Yes	Yes	~~Yes~~	Yes
FUEL_RDY	Yes	Yes	~~No~~	Yes
CCM_RDY	Yes	Yes	Yes	Yes
CAT_RDY	No	No	~~Yes~~	No
HCAT_RDY	~~No~~	~~No~~	~~No~~	n/a
EVAP_RDY	No	~~Yes~~	~~No~~	No
AIR_RDY	~~No~~	~~No~~	~~No~~	n/a
ACRF_RDY	~~No~~	~~No~~	~~No~~	n/a
O2S_RDY	Yes	Yes	~~Yes~~	Yes
HTR_RDY	Yes	Yes	~~Yes~~	Yes
EGR_RDY	Yes	No	~~Yes~~	No

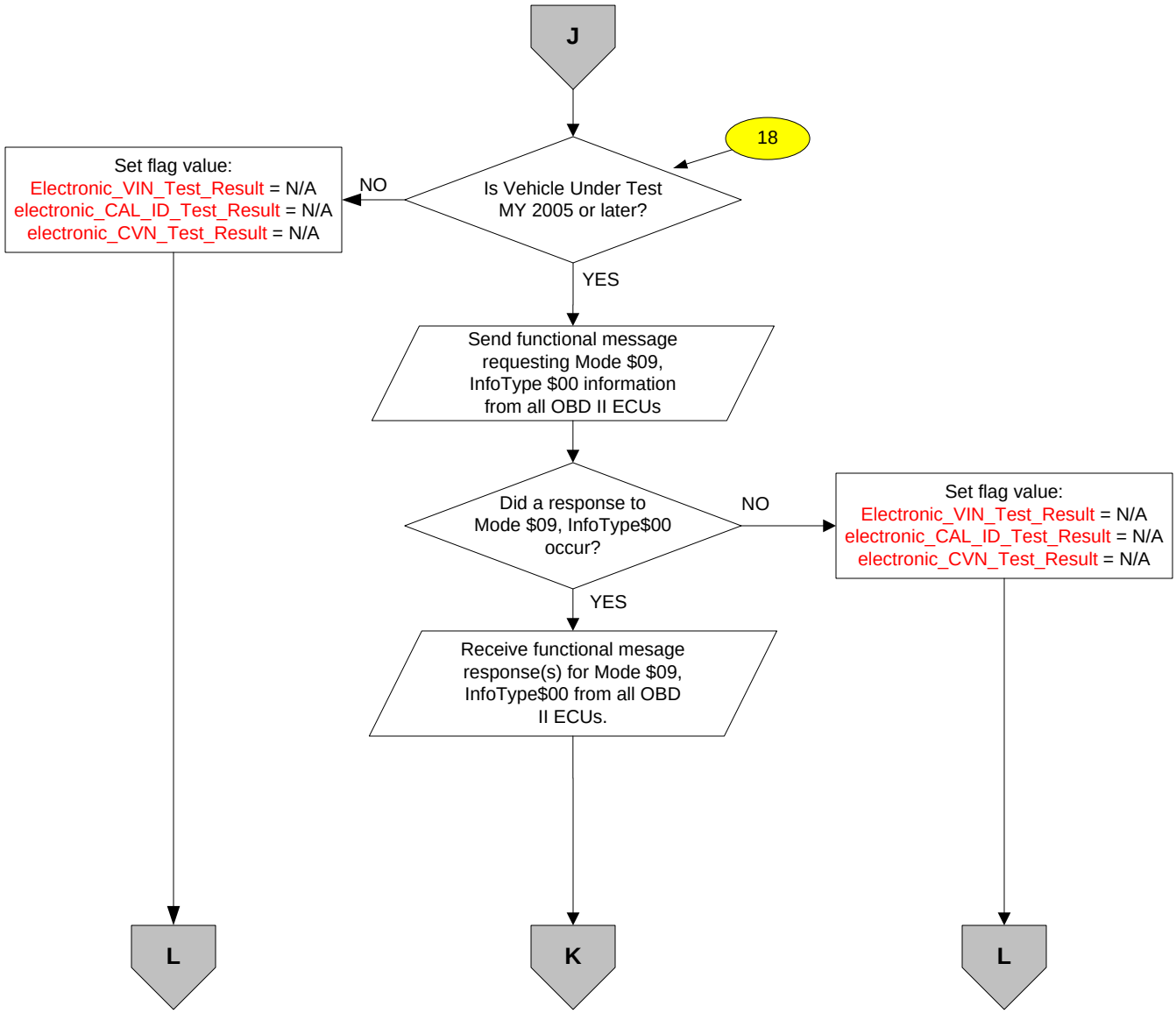
Note 1: One or more ECUs reporting not ready for a supported monitor (e.g., CAT, EVAP, EGR) results in that monitor being 'not ready' for the vehicle.

Note 2: Even if two ECUs report not ready for the same supported monitor (e.g., CAT), it results in only one monitor being considered not ready for the vehicle.

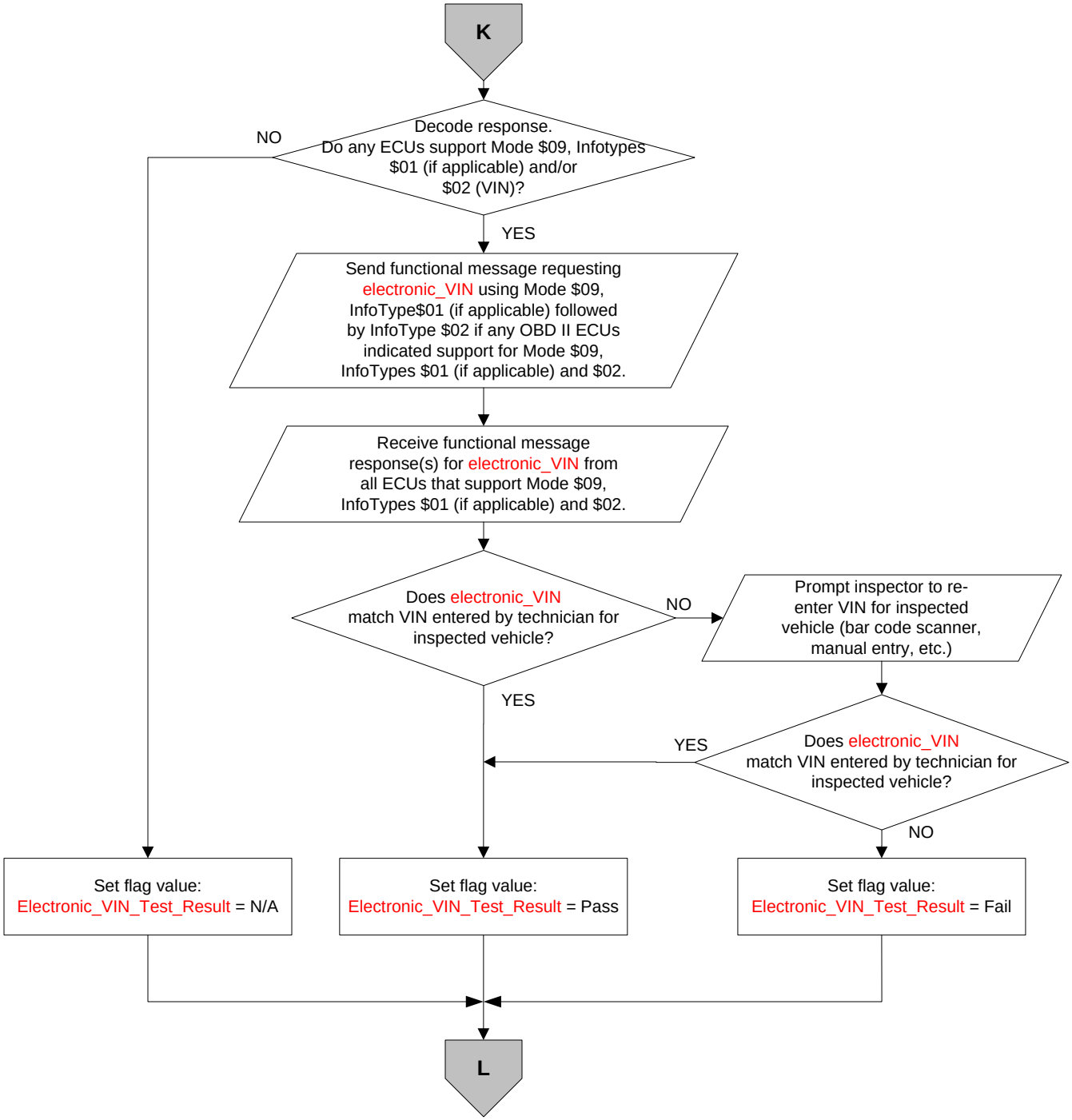
GET ADDITIONAL ECU PARAMETER INFORMATION



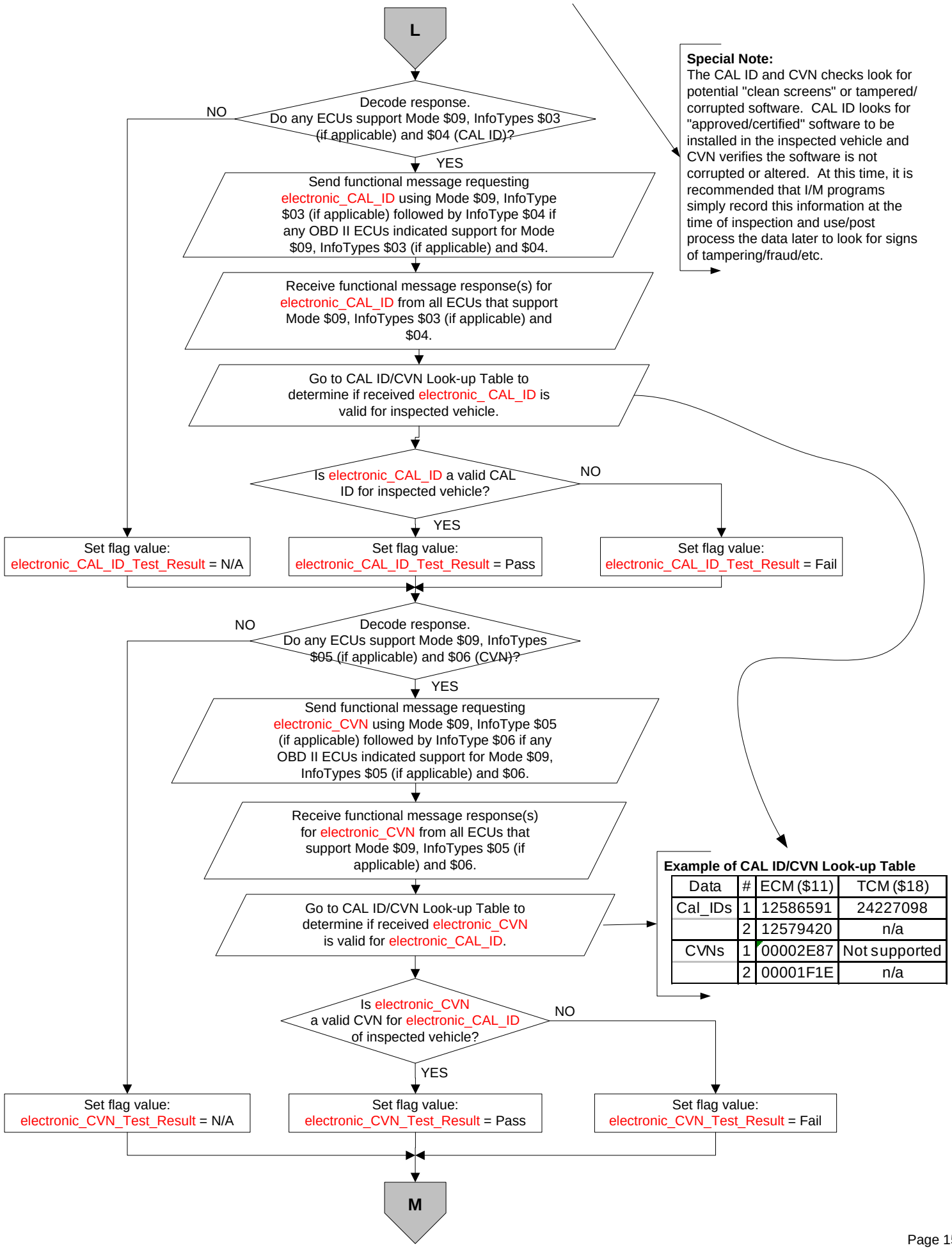
CHECK ELECTRONIC VIN SUPPORT



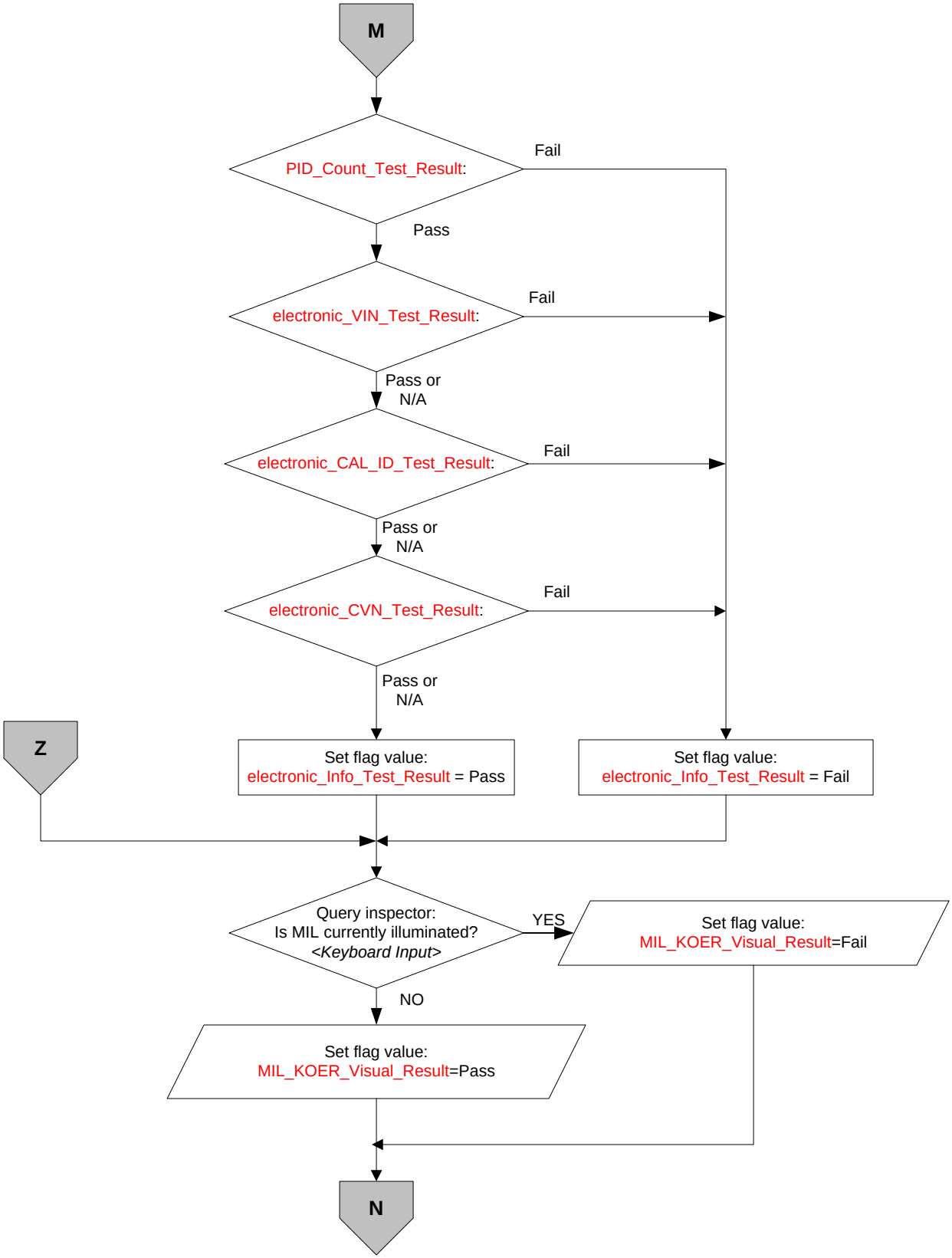
EVALUATE ELECTRONIC VIN



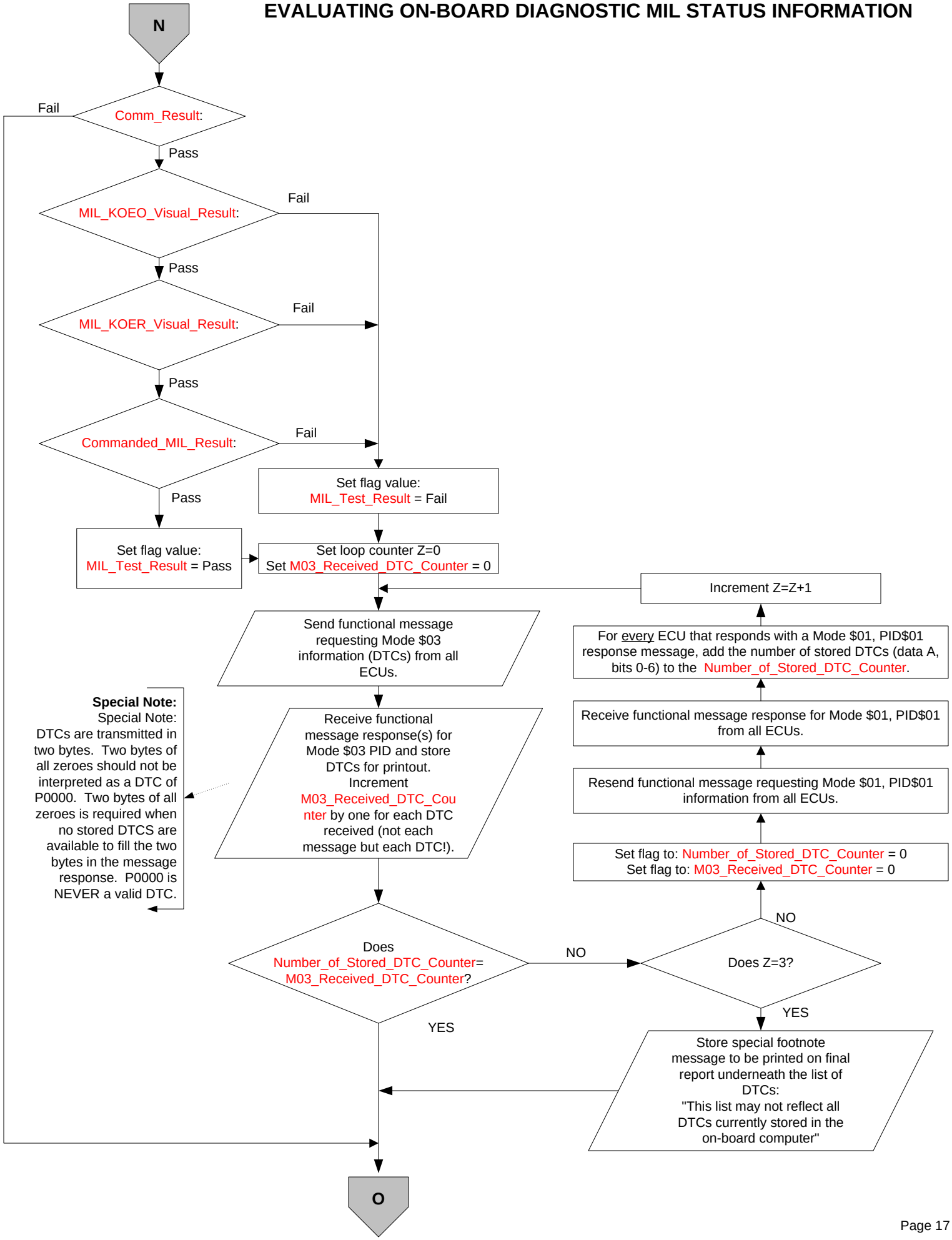
CHECK ELECTRONIC CAL ID AND CVN



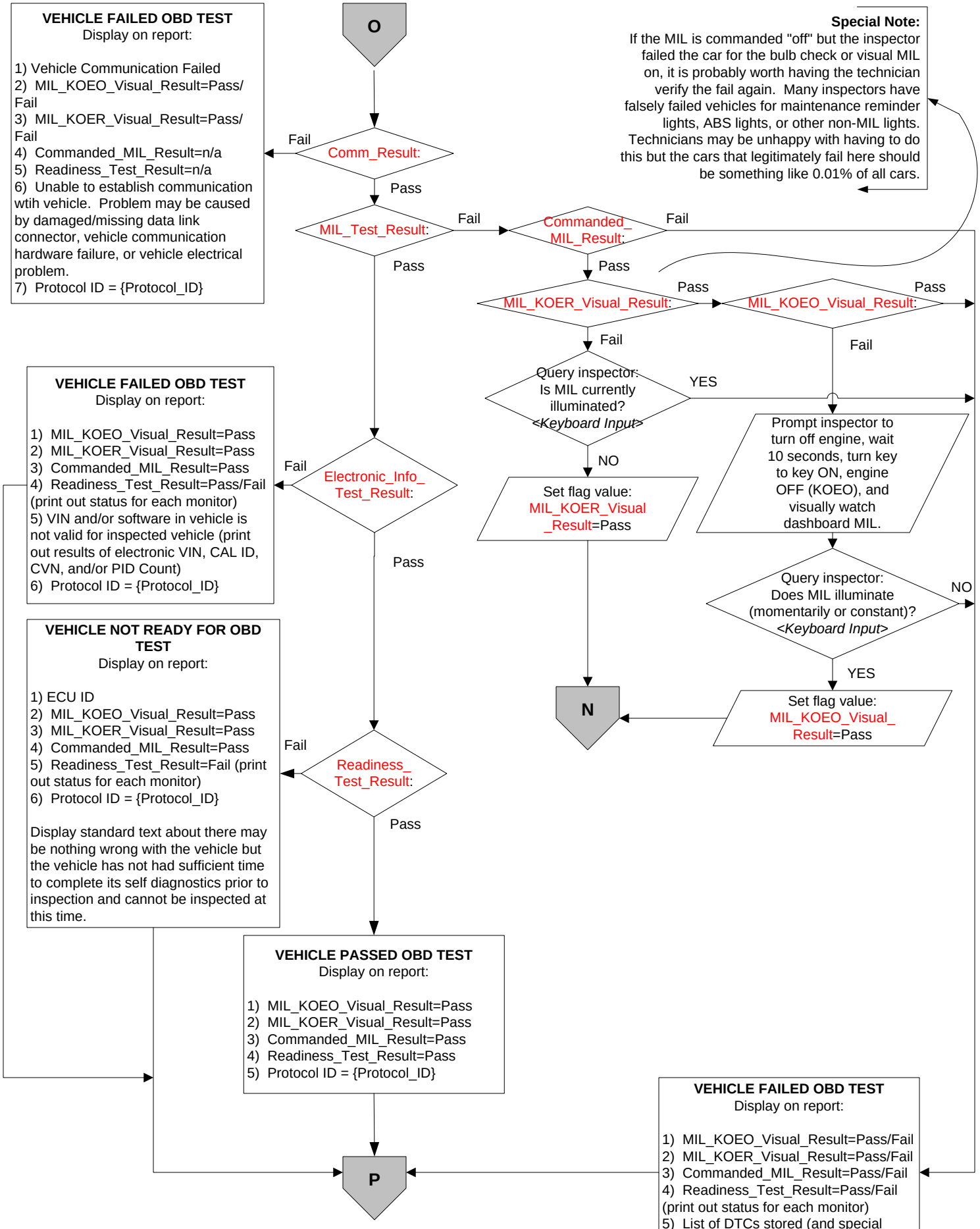
EVALUATING VIN AND OTHER ELECTRONIC INFORMATION



EVALUATING ON-BOARD DIAGNOSTIC MIL STATUS INFORMATION



PASS/FAIL DECISION BASED ON ON-BOARD DIAGNOSTIC INFORMATION



STOP: FINISH TEST & DISCONNECT FROM SAE J1962 DLC