



Vehicle Implications of OBD



Based on initial proposal for
regulation from California ARB,
July 25, 2003

•
•
•

New Protocol for HD Vehicles

- Use of ISO 15031 protocol will require most manufacturers to add gateway software to their electronic controllers.
- Benefits of J1939, such as public data for common parameters, will be lost to OBD.
- Commonality with passenger cars is the main driving force for this choice.

•
•
•

New Connector Required

- The specified connector for OBD communications is the one used for passenger cars.
- HD vehicles which use “hose out” cleaning may have reliability problems.
- J1939 connector will still be needed for other vehicle communication tasks.

Voltage Regulation May Be Needed

- The requirement for “battery power ... less than 20 volts” will be a challenge for those vehicles with 24-volt electrical systems.
- Clarification of the need for this 12-volt supply from “battery” (or from a regulator) will be needed.

New Diagnostic Trouble Codes Needed

- ISO 15031 / SAE J2012, which defines the Diagnostic Trouble Codes for OBD, will need to be expanded to provide codes needed for HD Diesel engines.
- The limited range of space defined for codes may present challenges in adding these codes.

OBD Certification of ECUs

- Only Engines are currently certified for emission controls in HD vehicles.
- Other devices will need to be certified to the OBD standard according to the proposal. These will include Transmissions and perhaps Instrument Clusters.

Separate Tools for Emissions Faults

- The use of an OBD communication tool that is different from those currently used on HD vehicles may lead to separate diagnosis tools and techniques for faults that are related to the engine's emissions control.
- Other vehicle components will need the current tool set for fault diagnosis.

•
•
•

The Process is Just Beginning

- The Staff Report accompanying the OBD proposal implies that there may be changes in the protocol requirements before the final rule is published. In any case, there will still be challenges.
- To preclude untimely delays, protocol options must be allowed within the regulation (i.e. recognize both ISO 15031 & SAE J1939)