Emerging Technologies
Scanning & Diagnostics

Presented by:
Michael Quinn, Chuck Olsen
& Jake Rodenroth
Scanning & Diagnostics Task Force

- Currently has 70+ members
- OEM, Insurer, Repair Facility, Tool & Service Providers, I-CAR, Industry Associations
- 3 Work Groups
  - Definitions – Sean Guthrie
  - Tools – Chuck Olsen
  - When to Scan/Use of OEM Procedures – Jake Rodenroth
- Work Products Online here:
AUDIENCE RESPONSE QUESTION:

Please indicate which stakeholder group you represent:
1. Repairer
2. Insurance
3. OEM
4. Supplier
5. Salvage
6. Consultant
7. Education
8. Associations
9. Other
AUDIENCE RESPONSE QUESTION:

Does a completed scan with all codes clear mean a vehicle is ready for delivery?

1. Yes
2. No
AUDIENCE RESPONSE QUESTION:

Which conditions can set a diagnostic trouble code (DTC) that will not clear?

1. Cut, broken, pinched or chafed wire
2. Loose or unconnected ring terminal
3. Terminal backed out of connector
4. Corroded terminal
5. Poor or missing ground
6. Improperly installed light bulb
7. All of the above
AUDIENCE RESPONSE QUESTION:

At a minimum, should identification of vehicles with Advance Driver Assist Systems (ADAS) that require scanning or calibrations be identified by Information Providers?

1. Yes
2. No
Definitions Work Group Update

- Work group chair transitioned to Sean Guthrie
- Draft definitions list nearly finalized
- Define approximately 50 terms related to scanning and diagnostics
- Identified 10 terms in main Definitions Committee list that apply to scanning
- Goal to finalize the list for Chicago
Tools Work Group Update

- **Scan Tool & Services Overview**
  - OEM, Aftermarket tools, Mobile & Remote outsource options
- **Scan Tool Definitions**
  - J2534, Tiers of Aftermarket tools, etc.
- **Support Equipment for Diagnostics**
  - Battery support, TPMS, Electrical test equipment, etc.
- **‘Quick Start’ Guide In Process**
  - Short piece to help shops get started with scanning
  - Overview of equipment, process & training needed
When to Scan – Use of OEM Procedures

- OEM Position Statements available at www.OEM1Stop.com
- How can OEM procedures be integrated into repair facility Standard Operating Procedures
- Coordinate with I-CAR on development of training curriculum on procedure access & use
Airbag deployment

2016 Chevrolet Silverado

Case# 02082017

Collision Industry Conference
Radio Controls
B1325 03 Control Module Power Circuit Low Voltage
Telematics Communication Interface Control Module
B2455 04 Cellular Phone Microphone Circuit Open
B2476 04 Cellular Phone Select Service Switch Open
Body Control Module
B2575 04 Headlamps Control Circuit Open
B3006 01 Hood Ajar Circuit Short to Battery
B3006 04 Hood Ajar Circuit Open
B3883 01 License Plate Lamp Circuit Short to Battery
B3883 04 License Plate Lamp Circuit Open
B3948 04 Left Front Turn Signal Circuit Open
B3950 04 Left Rear Turn Signal Circuit Open
B3951 04 Right Rear Turn Signal Circuit Open
U0100 00 Lost Communication with Engine Control Module
U0102 00 Lost Communication with Transfer Case Control Module
U1534 00 Lost Communication with Device on LIN Bus
U1538 00 Lost Communication with Device on LIN Bus
U1548 00 Lost Communication with Device on LIN Bus
Inflatable Restraint Sensing and Diagnostic Module
B0080 04 Passenger Seat Position Sensor Circuit Open
B0082 05 Passenger Presence Sensor High Voltage/Open
B0083 71 Left Front Side Impact Sensor Invalid Data
B0086 71 Right Front Side Impact Sensor Invalid Data
B0098 05 Passenger Air Bag Disable Switch Circuit High Voltage/Open
B1001 00 Option Configuration
B1019 00 System Configuration Error
Electronic Brake Control Module
U0140 00 Lost Communication with Body Control Module
Radio
B1045 04 Left Rear Audio Output Circuit Open
B1325 03 Control Module Power Circuit Low Voltage
HVAC Controls
B1325 03 Control Module Power Circuit Low Voltage
Repairs and Inspections Required After a Collision

Accident With or Without Air Bag Deployment - Component Inspections

Warning

Proper operation of the Supplemental Inflatable Restraint (SIR) sensing system requires that any repairs to the vehicle structure return the vehicle structure to the original production configuration. Not properly repairing the vehicle structure could cause non-deployment of the air bag(s) in a frontal collision or deployment of the air bag(s) for conditions less severe than intended.

After any collision, inspect the following components as indicated. If you detect any damage, replace the component. If you detect any damage to the mounting points or mounting hardware, repair the component or replace the hardware as needed.

* The steering column—Inspect the steering column for bending, twisting, buckling or any type of damage.

* The instrument panel knee bolsters and mounting points—Inspect the knee bolsters for bending, twisting, buckling, or any other type of damage.

* The instrument panel brackets, braces, etc.—Inspect for bending, twisting, buckling, or any other type of damage.

* The seat belts—Perform the seat belt operational and functional checks. Refer to Repairs and Inspections Required After a Collision. See: Seat Belt Systems > Procedures > Repairs and Inspections Required After a Collision.

* The instrument panel cross car beam—Inspect for bending, twisting, buckling, or any other type of damage.

* The instrument panel mounting points and brackets—Inspect for bending, twisting, buckling, or any other type of damage.

* The seats and seat mounting points—Inspect for bending, twisting, buckling, or any other type of damage.

* The roof and headliner mounting points.

* The brake pedal—Inspect the brake pedal for bending, twisting, buckling or any type of damage.
Replace SDM IF DTC B0052 sets and will not clear

Accident With Side Seat Air Bag Deployment - Component Replacement and Inspections
After a collision involving driver/passenger side seat air bag deployment, replace the following components:

http://collision.alldata.com/alldata/article/display.action?componentId=6978&iTypeId=376... 2/8/2017
Repairs and Inspections Required After a Collision | Service and Repair, Procedures: Supp...

- Left/right side impact sensors on the side of the impact.
- Left/right roof rail air bag on the side of the impact.
- Inflatable Restraint Sensing and Diagnostic Module (SDM), if the Inflatable Restraint Sensing and Diagnostic Module has set DTC B0052 and will not clear.
  - Inflatable Restraint Seat Belt Anchor and/or Retractor Pretensioner.
  - Driver or passenger seat back cushion cover replacement.

Warning
Do not repair or replace the seat stitching or seams in the seat back trim cover with an internal mounted seat side airbag module. Replace the complete seat back trim cover from the OEM. Non-OEM seat stitching may cause improper airbag deployment which could result in personal injury.

Perform additional inspections on the following components.
- Mounting points or mounting hardware for the side impact sensors, and driver/passenger side seat air bags on the side of impact-Inspect for any damage and repair or replace each component as needed.
- Mounting points, mounting hardware, headliner and trim pieces for the left/right roof rail air bag on the side of impact-Inspect for any damage and repair or replace each component as needed.
- Mounting points or mounting hardware for the Inflatable Restraint Sensing and Diagnostic Module and seat belt anchor and/or retractor pretensioners-Inspect for any damage and repair or replace each component as needed.
  - The seat cushion frame
  - The seat recliner and cover, if equipped
  - The seat adjuster
  - The seat back frame
  - Door trim assembly
  - Impacted seat cushion side covers and switches

COLLISION INDUSTRY CONFERENCE
B0052 did not set on this deployment.
SDM is reusable up to 3 times.
GM SDM (sensing and diagnostic module) $416.67

$528.37 installed IF you have an OEM scan tool
Battery Disconnect

2011 Nissan Armada

Case #

03292017
Service Details

Master Technician: Justin Brown

Performed a full vehicle scan (Health Check) with the Nissan Consult 3 plus factory tool.
4 faults were reported in 3 modules.
Performed SRS verification test.

Recommendations

Per Jake Rodenroth no faults cleared from vehicle.
Complete a vehicle road test of at least 5-6 miles, making both left and right-hand turns, reaching speeds greater than 25 mph.
Verify no malfunction lamps/messages return and all accessories function properly.
Inflate all tires to manufacturer’s specification.
Inspect battery for proper state of charge, recharge as required.
If warning lamps or malfunctions return contact CDS immediately for re-scan.
Please contact Justin Brown at my direct extension for any technical questions regarding this scan at 888-486-1166 ext. 1113

Scan Readings

Air conditioning system:
B2580 Passenger sun load sensor short/open
Anti-lock brake system
C1136 Steering angle sensor communication circuit
All wheel drive/4 Wheel drive:
P1831 Vehicle dynamic control operation signal
P1832 Traction control system operation signal
Nissan Armada Battery Removal

Removal and Installation

Removal

1. Disconnect the negative battery terminal (1) and positive battery terminal (2).

   CAUTION:
   Remove negative battery terminal first.

2. Remove the battery cover.
3. Remove the battery clamp bolt (3) and battery clamp.
4. Remove the battery.

Installation

Installation is in the reverse order of removal.

CAUTION:
When installing, install the positive battery terminal first.

Battery clamp bolt: 14.7 N·m (1.5 kg-m, 11 ft-lb)
Battery terminal nut: 3.5 N·m (0.36 kg-m, 31 in-lb)

Reset electronic systems as necessary: See Power Distribution Module > Programming and Blemarking > Special Repair Requirement
## Inspection and Adjustment

**Additional Service When Removing Battery Negative Terminal:** Special Repair Requirement

<table>
<thead>
<tr>
<th>Required Procedure After Battery Disconnection</th>
<th>Item</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Control System</td>
<td>Idle Air Volume Learning</td>
<td></td>
</tr>
<tr>
<td>Brake Control System</td>
<td>Steering Angle Sensor Neutral Position</td>
<td></td>
</tr>
<tr>
<td>Door &amp; Lock</td>
<td>Automatic Back Door Initialization</td>
<td></td>
</tr>
<tr>
<td>Roof</td>
<td>Sunroof Memory Reset/Initialization</td>
<td></td>
</tr>
<tr>
<td>Automatic Drive Positioner</td>
<td>Automatic Drive Positioner System Initialization</td>
<td></td>
</tr>
</tbody>
</table>
Brotherly Love... Mazda CX-5

Windshield ONLY Replacement

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Jake Rodenroth: Dude..... they can't replace that damn windshield in your driveway call me 😭

Like · Reply · January 4 at 10:53am


Like · Reply · January 4 at 12:32pm

Ali L. Soller: 😞

Like · Reply · January 4 at 12:34pm

Jake Rodenroth: I sent you and Brian the documentation from Mazda. Remember these vehicles are relatively new so most dealers have not encountered this before. According to Mazda the forward looking camera, auto wipers and headlamps could be effected by a simple windshield replacement if the calibration steps are not followed, which must be performed at the dealer. Just don't want the insurer to stick you with the bill. Trust your big brother 😊

Like · Reply · 2 · January 4 at 12:46pm
Emerging Telematics in Collision Repair

Row Luxury Comes to Life

Remote Access

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Emerging Telematics in Collision Repair

Safety & Security

The mbrace® Secure package uses cutting edge technology to keep you safe inside your car, and informed when you're not. So if you're ever in an accident, someone is on the way, and if your vehicle is ever stolen, you're the first to know. Services include:

- Automatic collision and alarm notifications
- SOS/Emergency call capabilities
- Safe Ride if you're ever unable to drive
- Crisis Assist in the event of a disaster

6-month free trial, $199/year thereafter

More details about the mbrace Secure package

Safety, Security & Convenience Services

Automatic Collision Notification

With mbrace Secure, if an air bag or seat belt Emergency Tensioning Device is activated, your Mercedes-Benz can automatically place a call to the mbrace Emergency Response Center, including reporting your location, even if you can't.

Stolen Vehicle Location Assistance

The GPS system that's built into your Mercedes-Benz can assist authorities with stolen vehicle recovery. Once you file a police report, a phone call to mbrace offers a safe and effective way to help the police locate and recover your car.

SOS/Emergency Call

If you ever need help, or see someone else who does, one button in your Mercedes-Benz can connect you to trained emergency response personnel who can stay on the line until help arrives.

Agent-Assisted Door Lock & Unlock

Lock or unlock your vehicle from virtually any location with a few taps on your smartphone. Or if you've locked your smartphone in the vehicle, borrow a phone to call the mbrace Response Center, and an agent can unlock it for you.

Automatic Alarm Notification

Your vehicle's factory-installed anti-theft alarm system can send you an alert via email, text message or phone, whichever is your preference, if the alarm is triggered while the vehicle is parked.

Crisis Assist

In the event of a disaster, an Emergency Response Specialist is just a button away to provide you critical, real-time guidance and support with evacuation and shelter information, as well as help after the event (e.g. aid station locations, contacting family, contacting insurance carriers.)

Dealer Connect

Easily contact your preferred dealer, or receive assistance in finding one that's nearby. With the push of a button in your car, a friendly mbrace operator can not only look up the dealer for you, but also route your call directly to the desired department.

Safe Ride

If you find yourself unable to drive, mbrace can help you contact a family member or taxi company for a ride home.

Vehicle Information

From setting the clock to understanding an indicator light, you can connect to a trained product specialist with the push of a button in your car or using the Mercedes me app, anytime you have a question about your car and its features.
Your vehicle constantly monitors critical telemetry like airbag status, GPS location and – most critically – collision sensor activity. If an airbag ever deploys, the vehicle automatically sends an event report to AcuraLink support.
Brake System: 86-21
Parking Brake System: U0416-68
Parking Brake System: C0037-62
Parking Brake System: U0401-68
Brake Hold System: 86-22
Vehicle Stability Assist: 68-13
Parking Brake System: U0151-00
Scanning & Diagnostics - What’s Next?

- Encourage more participation in the Work Groups – contact Work Group chairs for details
- Move work product drafts forward for CIC approval
- Stay tuned for Chicago.....
- Questions?
Scanning & Diagnostics Task Force

Thank you!

Three Work Groups:
- Definitions – Sean Guthrie - sean@carcrafters.com
- Tools – Chuck Olsen - chuck.o@airprodiag.com
- When to Scan/Use of OEM Procedures – Jake Rodenroth - jrodenroth@astech.com

Work Products Online here:
- www.ciclink.com/emerging-tech-committee/