


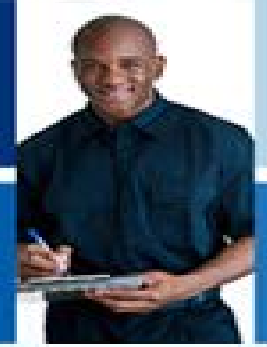

Telematics and The Connected Vehicle in the Collision Repair Industry


Presented by: Mike Anderson
Mike@collisionadvice.com
301-535-3333
4/5/2018

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www.collisionadvice.com
703-898-0715



ANTITRUST / COMPETITION GUIDELINES

- In today's workshop, we will not discuss any issues that would violate antitrust guidelines. Surveys of prices, discounts and costs are permissible, but only under strict guidelines and only if they are not part of a conspiracy to fix prices or to otherwise restrain trade. Remember, the prices charges must be calculated and determined by the business owner alone. These prices should take into account the costs of doing business and include allowances for reasonable profit.

- All content of this program is based on standard economic and management principles. Profit margins, labor rates, etc., used in this presentation are to be taken as examples only. The intent of this workshop is to provide attendees with basic human resources management skills that will enable them to determine their own individual rates, profit percentages and other operation aspects of their businesses strictly on an individual basis, using generally accepted management principles.



Sales & Marketing…Virtual Steering – Virtual Referral

4 Years ago, I attended a conference where there were several OEMs present. They said that within two to three years vehicles would notify the OEM
when a vehicle was in an accident, as well as if it were **non-drivable**!

The Scenario:…….A consumer is in an accident…


The Future of Automotive
Collision Claims



Sales & Marketing…Virtual Referral

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Why do the OEM's want to get so involved in the Collision Repair Industry?



A Recent Assured Performance Survey…

- Consumers were given a survey asking this question:

“What is most important to you when choosing a body shop for collision repair?
The body shop is…”

a. Certified by my vehicle manufacturer
b. Recommended by my insurance company
c. Recommended by friends / family
d. Geographically convenient for me

A Recent Assured Performance Survey…

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a. Certified by my vehicle manufacturer
b. Recommended by my insurance company
c. Recommended by friends / family
d. Geographically convenient for me

- **52% selected A**
- 20% selected B
- 20% selected C
- 7% selected D



Why Do the OEM's Care?

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- **60% of all consumers who have to return their vehicle** to a collision repair center for a problem will sell or trade their vehicle within one year.
- **Of that 60%,**
  - 63% will change vehicle brands when they sell or trade in their vehicle.

Credit to Erica Schaefer, Chrysler

ACURA · Audi · BMW · BUICK · Cadillac · Chevrolet · CHRYSLER · DAEWOO · DODGE · Ford · GMC · Honda · HUMMER · HYUNDAI · INFINITI · ISUZU · JAGUAR · Jeep · KIA · LINCOLN · mazda · Mercedes-Benz · MITSUBISHI · NISSAN · Oldsmobile · PEUGEOT · PONTIAC · LAND ROVER · SAAB · SATURN · SCION · SUBARU · SUZUKI · TOYOTA · VOLVO



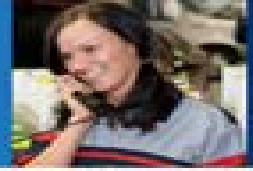
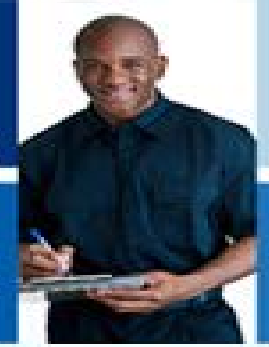
Since Four years ago when I showed this video…

COLLISIONADVICE

- The new Cadillac CT6 Sedan is doing this with OnStar
- GM announced other GM vehicles as well in the near future.
- The majority of all vehicles today have this ability.
- So why is it not happening yet?
- Let’s talk about When ! And Who ?

It has become a reality!



It’s Just the Start – It’s a Connected World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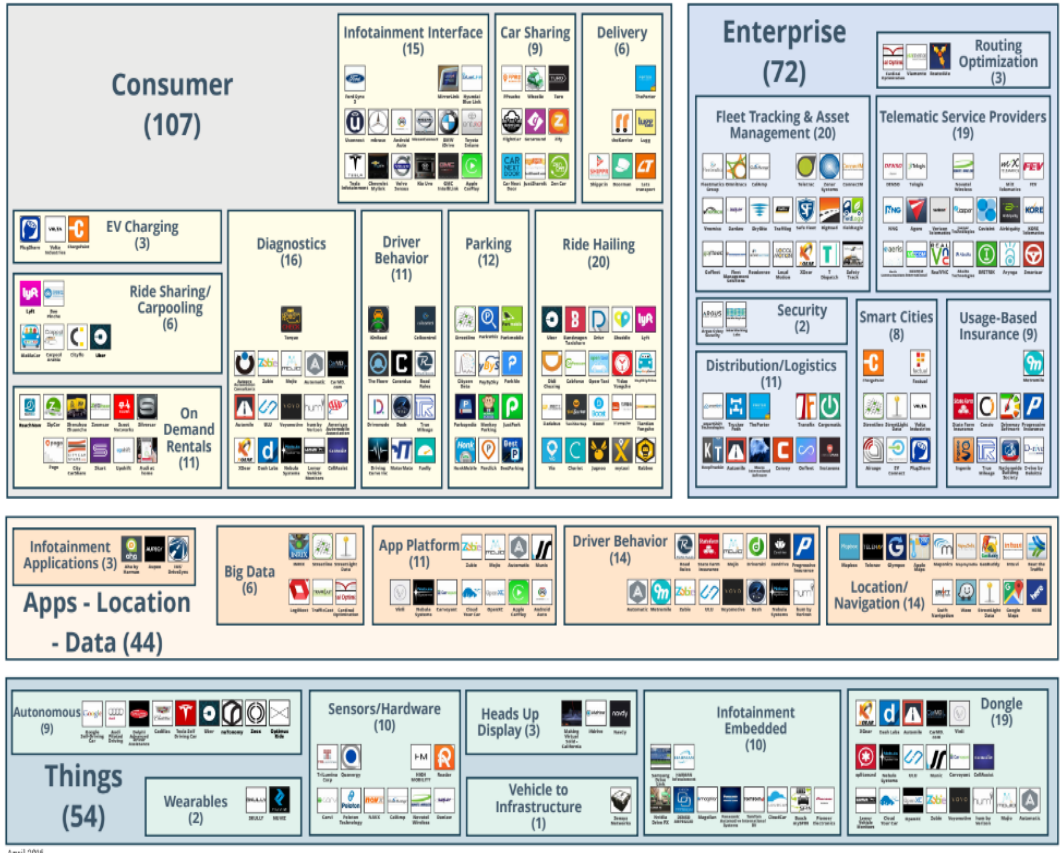
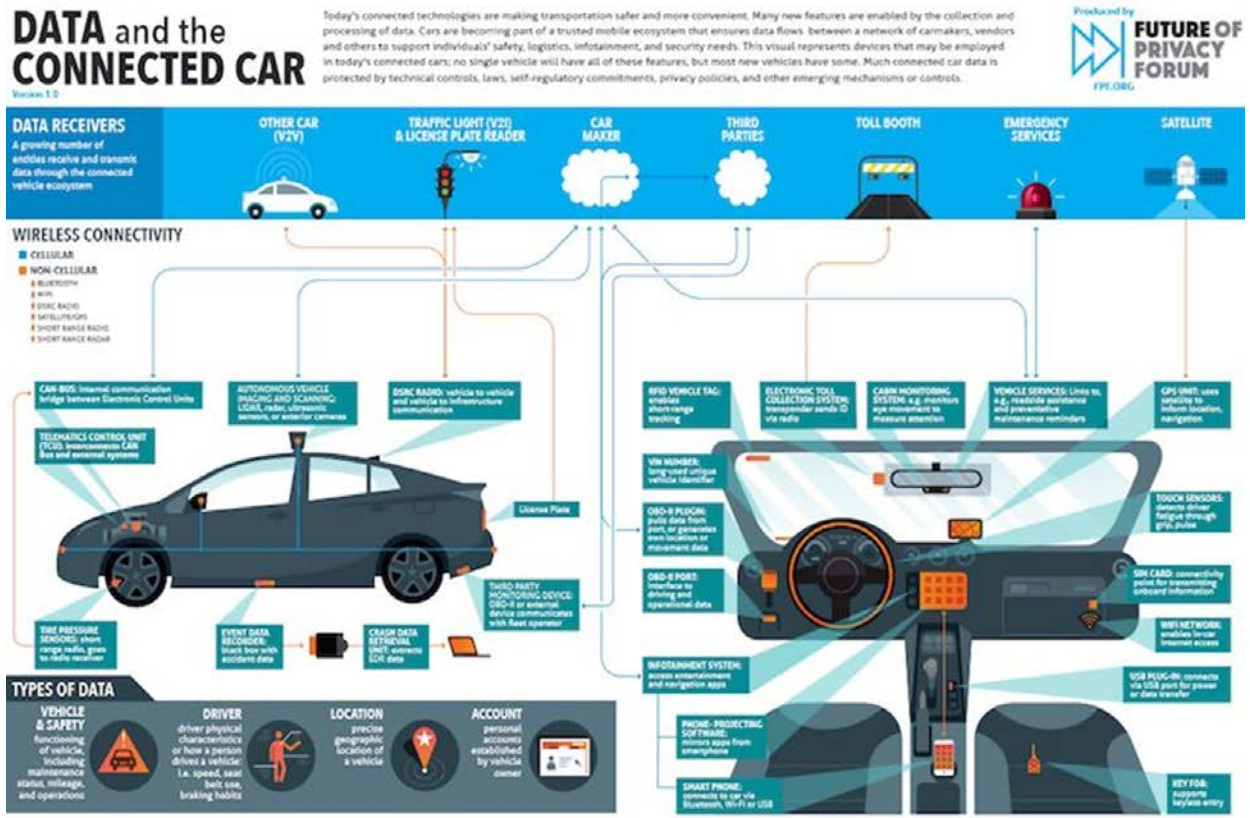
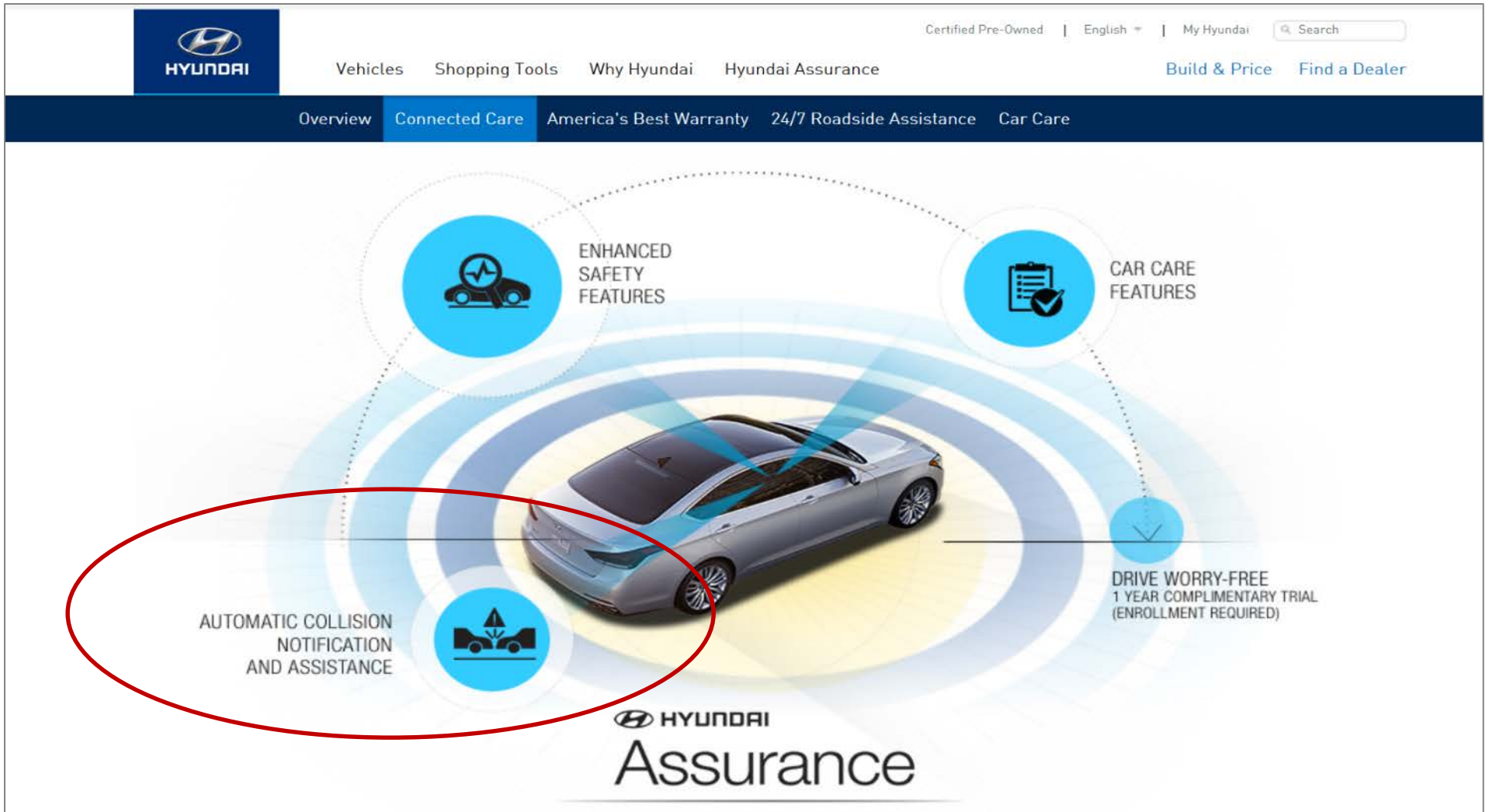
250 Companies



$38.7B in funding



Hyundai Blue Link™





SEE HOW BLUE LINK COMPARES

	HYUNDAI BLUE LINK	GM ONSTAR	TOYOTA SAFETY CONNECT	BMW CONNECTED-DRIVE/ASSIST	MERCEDES-BENZ MBRACE
AUTOMATIC COLLISION NOTIFICATION AND ASSISTANCE	✓	✓	✓	✓	✓
SOS EMERGENCY ASSISTANCE	✓	✓	✓	✓	✓
ENHANCED ROADSIDE ASSISTANCE	✓	✓	✓	✓	✓
MONTHLY VEHICLE HEALTH REPORT	✓	✓	N/A	N/A	N/A
MAINTENANCE ALERT†	✓	✓	N/A	N/A	N/A
AUTOMATED DIAGNOSTIC TROUBLE CODE NOTIFICATION	✓	✓	N/A	N/A	N/A
SERVICE LINK	✓	N/A	N/A	✓	✓ *(Customer transfer to dealer)*
RECALL ADVISOR†	✓	N/A	N/A	N/A	N/A
DURATION OF FREE SERVICE	*1 Yr*	*6 Mos - Chevrolet 1 Yr - Cadillac 2 Yrs - Buick (lease)*	*1 Yr*	*4 Yrs*	*6 Months*
TRANSFERABLE TO SUBSEQUENT OWNER?	*Yes*	*No*	*No*	*Yes*	*3-month trial*

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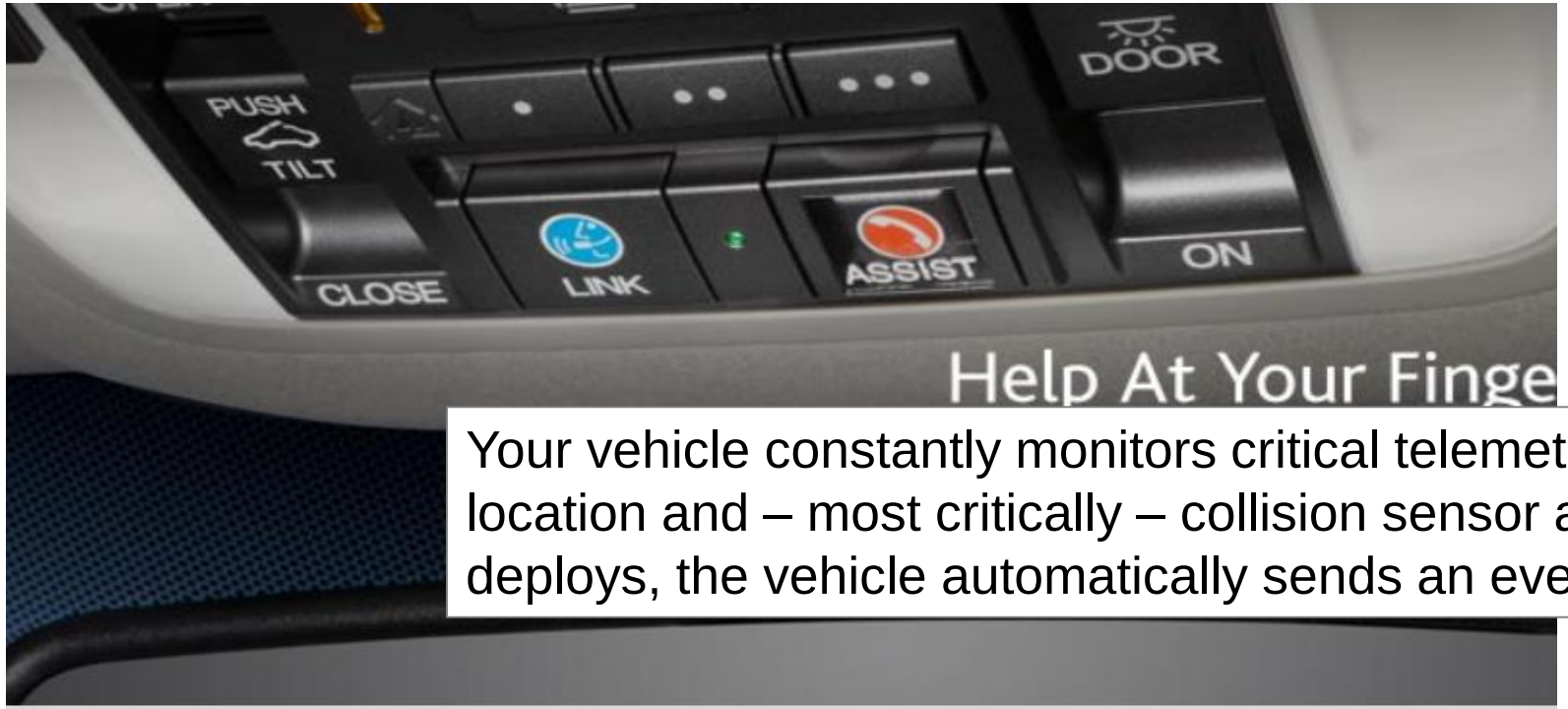
Automakers with telematics include:

Audi, BMW, Chrysler, Ford via Sync, Infiniti, Jaguar, Lexus, Lincoln, Mercedes-Benz, Mazda, Mini, Nissan, Porsche, Rolls-Royce, Subaru, Toyota, Volvo, and Volkswagen.

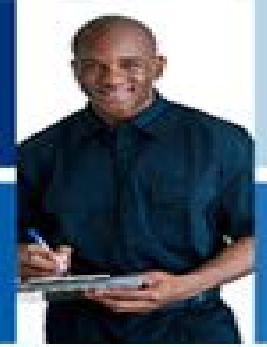
AcuraLink®



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.

Always On. Ever Watchful.

Your vehicle constantly monitors critical telemetry like airbag status, GPS location and — most criti
activity. If an airbag ever deploys, the vehicle automatically sends an event report to AcuraLink sup
connection required.)



It's Important to Remember…
How and Why We Got Here?

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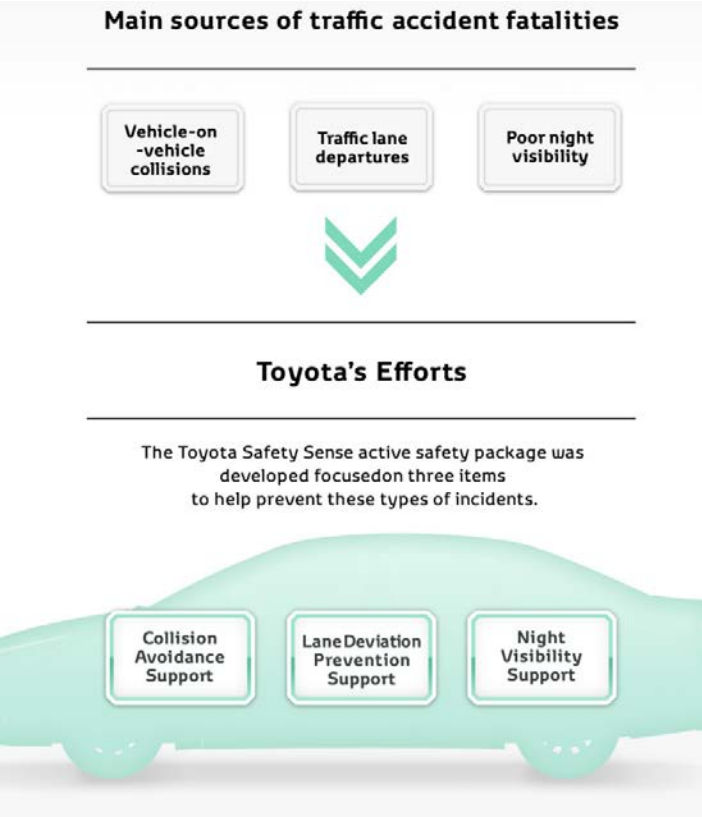
How Did We Get Here…When Will We Get There?

While self-driving vehicles get all of the attention in the media, the OEMs are focused on:

- **Preventing fatalities**
- **Minimizing bodily injuries**
- **Improving fuel economy**
- **Creating safety / comfort features**

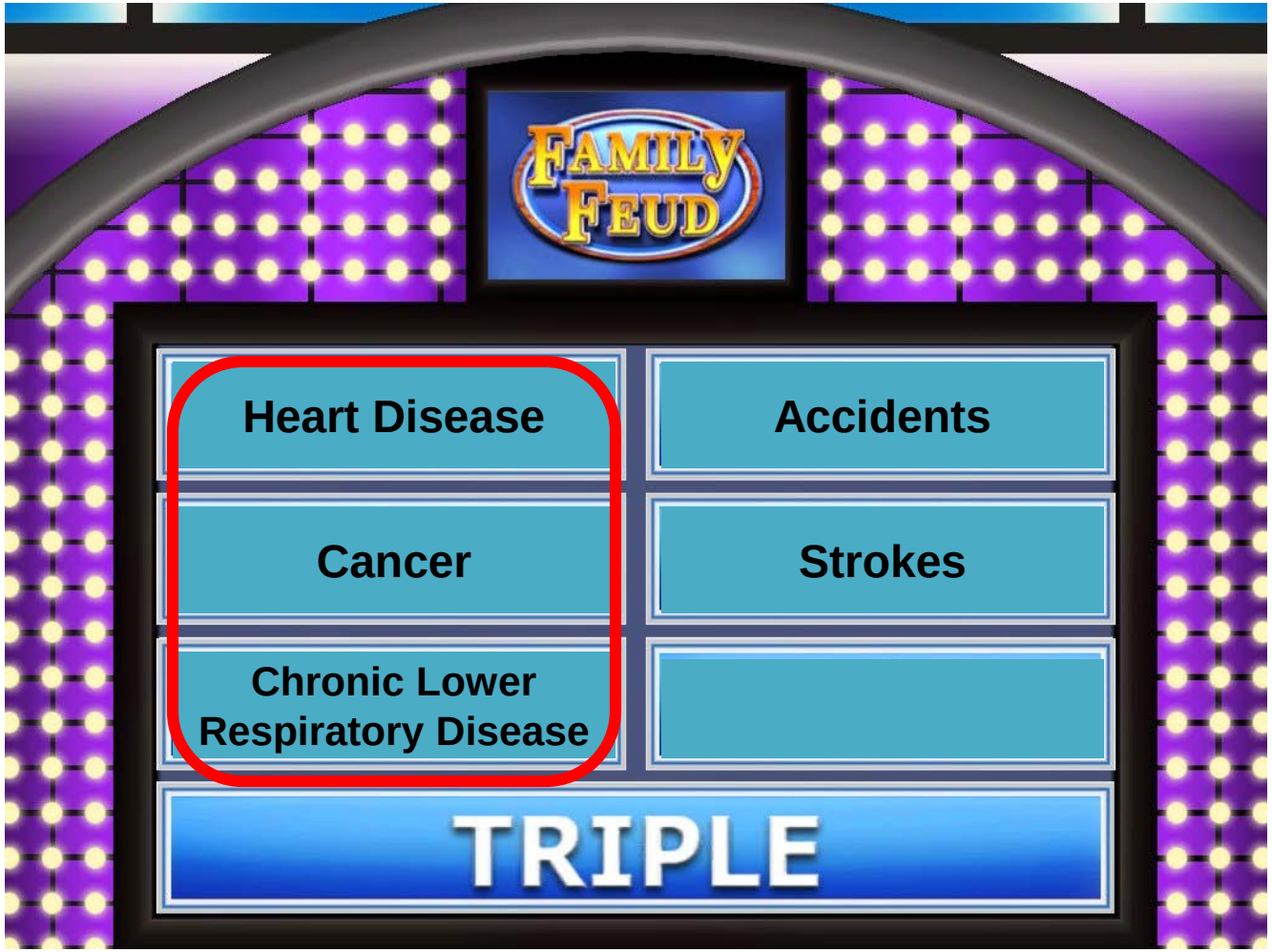


In 2014, the World Health Organization stated that **1.24 million people die** in traffic accidents each year. On a global scale, traffic fatalities continue to increase steadily and **are expected to become the fifth leading cause of death** in the world by 2030, unless countermeasures are implemented.



Name the Top Five Leadings Causes of Death in North America

COLLISIONADVICE



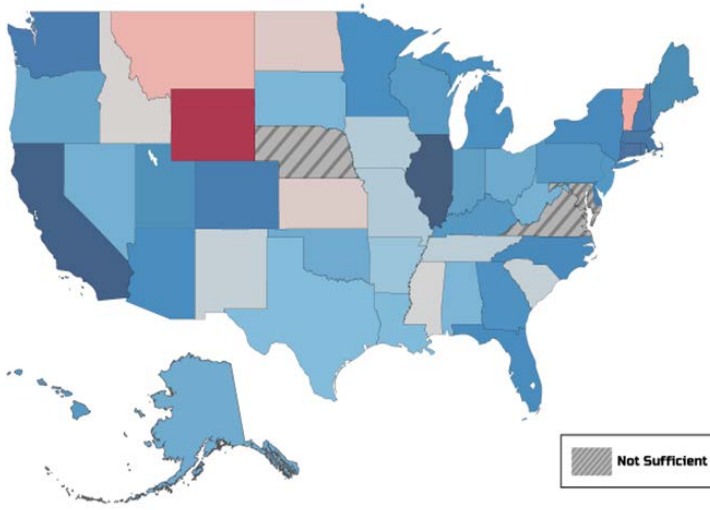


First Responder's Response Time

COLLISIONADVICE

- ***Current response time***
- ***In the future with telematics***
- ***How will this Impact fatalities***

National Average Response Time is 15 Minutes, 19.2 Seconds



Average Response Time (Minutes)

6.00 — 35.74

Top 5 Longest Response Times	
Wyoming	35 min, 44.4 sec
Vermont	22 min, 56.4 sec
Montana	22 min, 34.8 sec
North Dakota	21 min, 30 sec
Kansas	21 min, 22.2 sec

Top 5 Shortest Response Times	
Illinois	6 min, 0 sec
California	6 min, 51.6 sec
Rhode Island	7 min, 3.6 sec
Connecticut	7 min, 54 sec
Massachusetts	8 min, 33 sec



Telematics Are Here to Stay!

- Telematics will change the way Consumers determine which Collision Repair Facility they choose! Everyone will be influenced!
- The question is, **"*Which Collision Repairers are aligned with OEM Certification programs?"***
  - Do you know who the players are?
- Some OEM's will offer their own Insurance
  - Toyota
- Other OEM's will have a "Preferred" Insurance carrier they endorse.
- Insurance premiums may be rolled into their car payment.

Repairers – Insurers – OEM's



Gap in Telematics Interest

- ***By 2022*** the majority of new vehicles shipped in each market will be equipped with telematics
  - ***87 percent U.S.***
  - 91 percent German
  - 92 percent U.K.
  - 89 percent Canadian
  - 54 percent of Chinese vehicles
- It is important to note that by that time more than half of the global fleet will be connected.



Gap in Telematics Interest

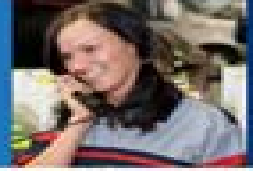
- According to IHS, ***just 32 percent of respondents (Consumers)*** said that telematics was a feature they were willing to pay for in their next vehicle
  - In-car Wi-Fi was only selected by 29 percent of consumers.
- ***U.S. drivers*** were willing to pay the most for telematics ($484), while price points varied in the other regions:
  - $402 in Germany
  - $386 in the U.K.
  - $294 in China
  - $168 in Canada.

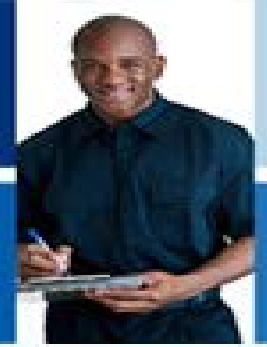
Affordability is key to this gaining traction !



Gap in Telematics Interest

- **More than half** of all respondents said they already have at least one vehicle that featured an infotainment or navigation system that offered features, such as roadside assistance, stolen vehicle assistance, crash notification or turn-by-turn navigation.
- **Thirty-two percent** of respondents globally indicated roadside assistance as the most important telematics feature in a new vehicle, with **stolen vehicle assistance coming in second at 28 percent.**
- **Automatic crash notification** and turn-by-turn navigation were both preferred by **25 percent** of respondents, **while 51 percent were interested in real-time traffic information. Dynamic routing and wirelessly updating maps based on current conditions** were preferred by **41 percent and 36 percent of respondents,** respectively.





When Will All of This Start?

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When Will All of This Start?

- **The vehicle MUST be connected 24/7!**
- **Older Generation doesn't want to be "Monitored".**
- **Younger Generation is okay with it and wants that connectivity 24/7**

GENERAL MOTORS

GM Is Rolling Out Unlimited Data Plans for All Its Cars

Kirsten Korosec
Mar 02, 2017

Wireless Internet—and the desire for it—has become an integral part of many consumers daily lives. And the appetite for Wi-Fi doesn't subside out once they're in a car.

General Motors has tried to respond to the demand by adding in-vehicle OnStar 4G LTE Wi-FI hotspot to its new vehicles. Starting Friday, the automaker is giving owners access to unlimited data for $20 per month.

The unlimited data plan will be available across all GM-branded vehicles equipped with in-vehicle 4G LTE Wi-Fi, including Chevrolet, Buick, GMC and Cadillac.

GM hit 5.5 million emergency services (which includes collisions) in 2015

Affordability of being Connected.
GM recently announced unlimited 4G for $22.00 per month.
Hyundai $17.00 per month, BMW included FREE!

THIS WILL START TO IMPACT OUR INDUSTRY!
FNOL and First Responder Time, and much more!



ARE YOU READY FOR THIS?!?!?!



Collision Advice Positioning Yourself in the Collision Repair Industry

Diagnostics Report from your 2016 Chevrolet Malibu as of 04/14/2017

Dear BOB RODENROTH,

There is a **diagnostic alert** for your vehicle this month requiring **immediate attention.** Please see the Diagnostic Information for details on your key operating systems. It is critical that you take care of this issue promptly to maintain the safe operation of your vehicle.

No Issues Found | Action Suggested | Immediate Attention

DIAGNOSTIC INFORMATION

- Engine and Transmission System
- Emissions System
- Air Bag System
- StabiliTrak® Stability Control System
  Watch Video
- Antilock Braking System
- OnStar System

REQUIRED MAINTENANCE

Vehicle Maintenance
No oil change due at this time.

Remaining Oil Life: 33%

Mileage: 2,997

VEHICLE INFORMATION

2016 Chevrolet Malibu
VIN: 1G1ZH5SX2GF300887

Explore the Owner Center to learn more about your vehicle.

Recalls and Programs

To check for recalls and programs on your GM vehicle, click here.

Warranty Tracker
Your warranty coverage is current and active.

PACKAGES AND SERVICES

OnStar¹ Subscription
- Account #: 015-3382-050
- Guidance
- Enrolled in Auto Renewal

Your current service plan will soon be automatically renewed at the monthly rate. Click below to change your plan or select an annual package.

RENEW SUBSCRIPTION →

Plan Add-Ons

Additional Maintenance Items
One or more items on this vehicle may require immediate service.

- Passenger Side Headlamp
- Passenger Side Front Turn Signal

Please service soon.

Odometer-Based Maintenance Items

Based on your current mileage, no items on the additional maintenance list are due at this time.

Tire Pressure: Low (Add Air)
- One or more tires are low and need air. Inflate them to the recommended tire pressure listed below as soon as possible.
- Properly inflated tires can improve your fuel economy, vehicle performance, and tire life.
- Recommended tire pressure - Front: 35 psi, Rear: 35 psi

Left Front: Low, 32 psi
Right Front: 33 psi
Left Rear: Low, 32 psi
Right Rear: 33 psi

OTHER INFORMATION

Insurance Benefit
Your mileage makes you eligible for a low mileage discount on auto insurance.

EXPLORE OPTIONS →

OnStar Smart Driver
- Status: Not Enrolled

Enroll now in our OnStar Smart Driver Program.

SiriusXM Satellite Radio²
- Radio ID #: B5AJJ309
- SiriusXM Radio inactive

Subscribe today and start enjoying.

Equipment: Standard & Options

We will need to Research to know if it is turned on or not?

COLLISIONADVICE

Home | TIS | Service Lane | TAS | PRS | QAT — Agustin Diaz, Company : TMS — TOYOTA — Help | My Account | Logout

Library | Diagnostics | Tech Assistance | Vehicle Inquiry

Vehicle Identification Number Search

Enter a 17 Digit VIN below to search for applicable information:
VIN: JTH | GL1EF | 1F5053714 | Clear | Lookup

Vehicle Information

Division: LEXUS | **Model:** LS460 | **Grade:** NONE | **Model Year:** 2015

Drive Type: 2WD | **Body Type:** 4Dr. Sedan | **Engine Family:** V8 - 1UR-FSE | **Engine No:** 1UR 0474950

Date of First Use: 01/12/2015 | **Production Date:** 10/24/2014 | **Plant Code:** 1 - JAPAN - TMC | **Transmission:** 8AT

VIN: JTH-GL1EF-1F5053714 **Dest:** USA

Electronic Parts Catalog | Flat Rate Manual | Standard Equipment [+]

Exterior Color: 04U7, SATIN CASHMERE METALLIC

Interior Color: LA51, FLAXEN w/SHIMAMOKU

Interior Trim Color: LA, SEMI-ANILINE LEATHER

Interior Fabric: *, *

Accessories:

AP: Advanced Pre-Collision Sys with All Speed Dynamic **AS:** Adaptive Variable Air Suspension w/Variable Gear **BD:** Blind Spot Monitor w/Rear Cross Traffic Alert **CK:** All Weather Pkg: Windshield-wiper deicer/headlamp **FT:** 19" 15-spoke alloy wheels with all-season tires **IL:** LED Headlamps w/intelligent high-beams & washers **LP:** Executive-Class Seating Pkg: Right-Rear Power **ML:** Mark Levinson 19-spkr w/Single DVD/CD player **WT:** Heated Wood Steering Wheel w/Leather Center Pad

Telematics Subscription

Subscription Type	Status	Expiration Date
Safety Connect	Inactive	

Campaign | Service History | Warranty | DTC History | Diagnostic Report

Service Campaign

No INFORMATION found for VIN: **JTHGL1EF1F5053714**

Email to Customer from Lexus

COLLISIONADVICE

Verizon 4:25 PM

Done 8 of 8

From: noreply@LexusEnformRemote.com

To: Erfb Hide

Vehicle Status Alert
Today at 1:12 PM

Dear JESSICA,

Your vehicle,'RX 350 5 DOOR SUV', triggered an alert on 03/01/18 at 01:08 PM Eastern Time due to the following condition(s):

ALERTS

- Driver Door: Open
- Driver Door: Unlocked
- Passenger Door: Open
- Passenger Door: Unlocked
- Rear Driver Door: Open
- Rear Passenger Door: Unlocked
- Rear Passenger Door: Open
- Rear Driver Door: Unlocked
- Hatch: Unlocked

Verizon 10:36 AM 94%

Lexus Cancel

All Mailboxes | Current Mailbox

noreply@LexusEnformRemote.c... Yesterday
Vehicle Status Alert
Dear JESSICA, Your vehicle,'RX 350 5 DOOR SUV', triggered an alert on 03/08/18 at 07:00 PM Eastern...

noreply@LexusEnformRemote.c... Yesterday
Vehicle Status Alert
Dear JESSICA, Your vehicle,'RX 350 5 DOOR SUV', triggered an alert on 03/08/18 at 02:19 PM Eastern...

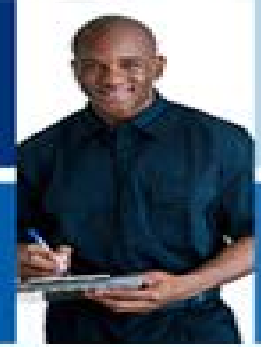
noreply@LexusEnformRemote.c... Yesterday
Vehicle Status Alert
Dear JESSICA, Your vehicle,'RX 350 5 DOOR SUV', triggered an alert on 03/08/18 at 01:09 PM Eastern...

noreply@LexusEnformRemote.c... Yesterday
Vehicle Status Alert
Dear JESSICA, Your vehicle,'RX 350 5 DOOR SUV', triggered an alert on 03/08/18 at 11:50 AM Eastern...

Lexus Enform Customer Support Yesterday
Your 2017 RX 350 has a Lexus Enform Maintenanc...
MAINTENANCE ALERT AN ALERT HAS BEEN REPORTED BY YOUR VEHICLE Please Login to Lex...

Lexus Enform Customer Support Yesterday
Your March Lexus Enform Vehicle Health Report for...
YOUR MONTHLY VEHICLE HEALTH REPORT IS READY FOR VIEWING. Please Login to LexusDrivers...

Edit



How is This Currently Impacting the Collision Repair Industry?

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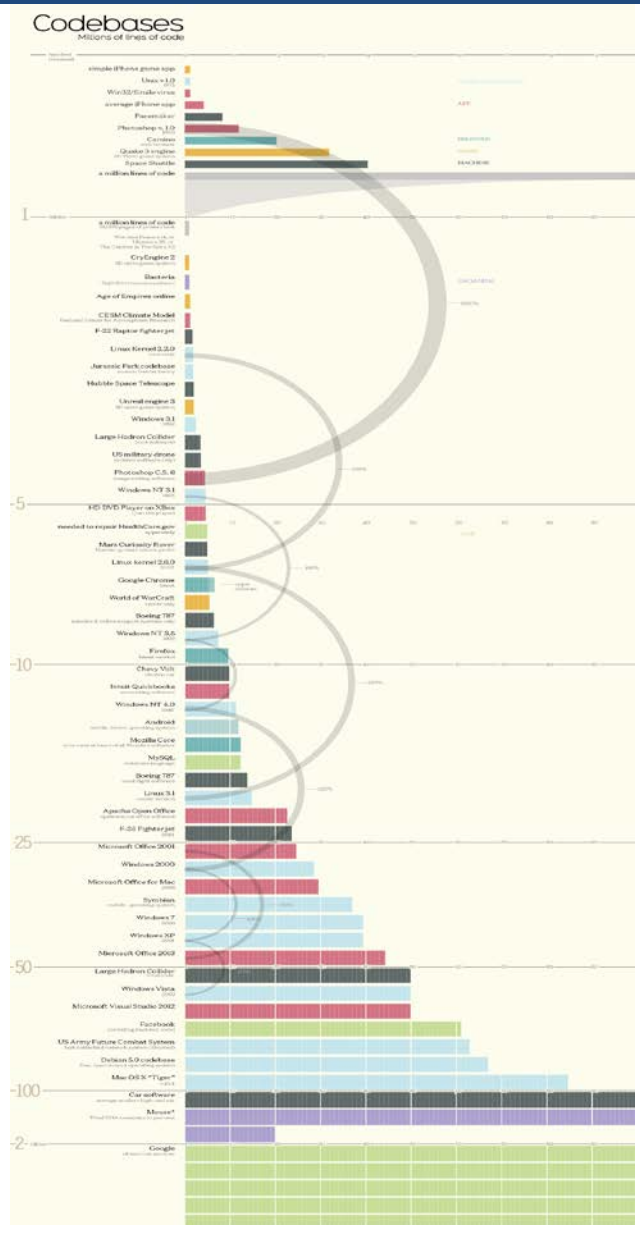
Lines of Code

- Boeing 787 – 14 million lines of code
- F-35 Fighter Jet (2013) – 24 million lines of code
- Large Hadron Collider – 50 million lines of code
- Avg. high-end car – 100 million lines of code

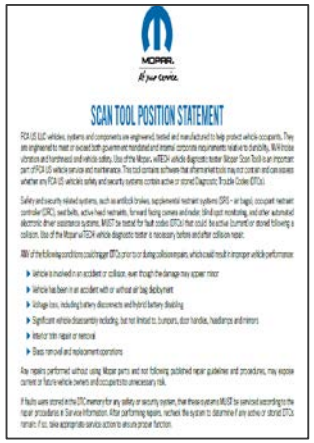
This code controls everything from tire pressure to collision avoidance, braking, backup, steering and other systems



http://www.informationisbeautiful.net/visualizations/million-lines-of-code

OEM Scanning Position Statements

COLLISIONADVICE


MOPAR

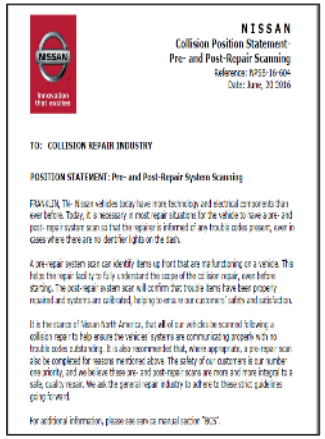
SCAN TOOL POSITION STATEMENT


TOYOTA Lexus SCION

CRIB COLLISION REPAIR INFORMATION

BULLETIN

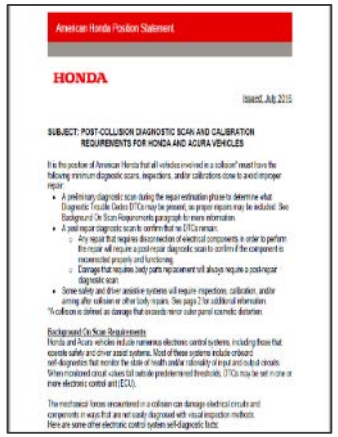
FOR THE COLLISION REPAIR PROFESSIONAL


NISSAN

Collision Position Statement
Pre- and Post-Repair Scanning

TO: COLLISION REPAIR INDUSTRY

POSITION STATEMENT: Pre- and Post-Repair System Scanning

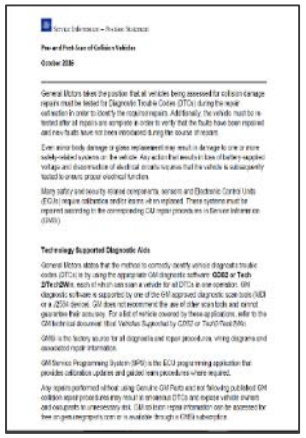

American Honda Position Statement

HONDA

SUBJECT: POST-COLLISION DIAGNOSTIC SCAN AND CALIBRATION REQUIREMENTS FOR HONDA AND ACURA VEHICLES


Mercedes-Benz

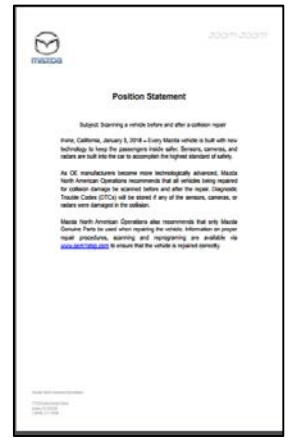
Position Statements




SUBARU

Position Statement

Subject: Pre- and Post- Scanning of Collision Vehicles


mazda

Position Statement

FCA
FIAT CHRYSLER AUTOMOBILES

TOYOTA

NISSAN
Innovation that excites

HONDA

Mercedes-Benz

GM
GENERAL MOTORS

SUBARU

mazda

These 8 manufacturers represent 65% of the market share!

SOURCE: EDMUNDS.COM



The Newest with a Position Statement…

COLLISIONADVICE

HYUNDAI

HYUNDAI | Hyundai Motor America
10500 Talbert Avenue, Fountain Valley, CA 92708
TEL: 714-965-3000 FAX: 714-965-3816
WEB: Hyundai.com

March 28, 2018

TO: Collision Repair Industry

POSITION STATEMENT: Pre-Repair and Post-Repair System Scanning

Hyundai vehicles are equipped with multiple electronic components and systems within each vehicle. Therefore, it is important that vehicles involved in a collision have a pre-repair scan and post-repair scan so that repairers are aware of any diagnostic trouble codes that may be present, regardless if a warning light or malfunction indicator light is illuminated.

A pre-repair scan will alert the repairer to diagnostic trouble codes or items that may be malfunctioning within the vehicle. This aids the repairer to develop more accurate repair estimates prior to beginning repairs. The post-repair system scan provides confirmation that systems are functioning properly and calibrated.

Hyundai Motors America's recommends conducting a pre-repair scan as appropriate to ensure safe and accurate repairs and that all vehicles receive a post-repair scan to ensure all systems and components are functioning, calibrated and communicating properly with no diagnostic trouble codes present.

Hyundai values customer safety and requests the collision industry follow the above recommendations for completing pre/post repair scans to achieve safe and quality repairs.



WHAT ABOUT THE OEMS THAT DON'T HAVE POSITION STATEMENTS?

2012 Audi A4

Electronic Control Modules, Handling After Collision Servicing

Electronic control modules only need to be replaced after a collision if the following condition is fulfilled:

- The function test results in the message “Control module faulty”.

If electronic components, for example, ABS control modules, were removed and then reused, these are to be checked for function according to the available documentation after installing. To do this, check all DTC memories with a tester and correct any possible malfunctions present.

2006 Jetta Electronic Control Module Procedures

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Procedure for Electronic Control Units after Accident Repairs

It is only necessary to install new electronic control units after an accident where at least one of the following conditions is present:

- The housing is obviously deformed or damaged.
- The support surface or bracket is deformed; there is no visible external damage to the unit itself.
- The connector is damaged or corroded.
- The functional check or the unit self-diagnosis procedure indicates the fault “Control unit defective”.

When electronic components, e.g. ABS control module, have been removed for the purpose of making repairs and are then reused, perform a functional check after installing as described in the existing technical literature, e.g. V.A.G self-diagnosis procedure.

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Prev Next

POST-COLLISION [illegible]GNOSIS

Perform the inspection and service on post-collision vehicles according to the procedures below regardless of the deployment or activation statuses of air bags and seat belt pre-tensioner.

SRS-ECU MEMORY CHECK

Required Special Tools:

- MB992744: Vehicle communication interface-Lite (V.C.I.-Lite)
- MB992745: V.C.I.-Lite main harness A
- MB992747: V.C.I.-Lite USB cable short
- MB992748: V.C.I.-Lite USB cable long
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicles Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

MITSUBISHI MOTORS

Clearing Continuous Memory Diagnostic Trouble Codes

Continuous Memory DTCs caused by the issue being repaired or created during the diagnosis and repair must be cleared or they will confuse future diagnosis. NOTE: Do not clear DTCs from unresolved vehicle issues.

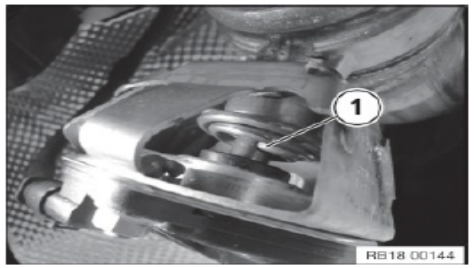
Ford On-Demand Diagnostic Trouble Codes

Ford Motor Company modules have a unique feature that performs a special diagnostic program at the request of the technician (using a diagnostic scan tool). This "On-demand" diagnostic program can exercise system outputs not normally running when the car is parked and record observed faults. These diagnostic codes are communicated to the scan tool, but are not recorded in module memory. An on-demand test is an effective tool for evaluating real input and output conditions during module activity – activity that might not normally be occurring during service bay conditions. For example, an air suspension module on-demand test can run the compressor, vent the system, and observe the report from the height sensor even when the car is already at correct trim height and not requiring height adjustment.

Network Communication Diagnostic Trouble Codes

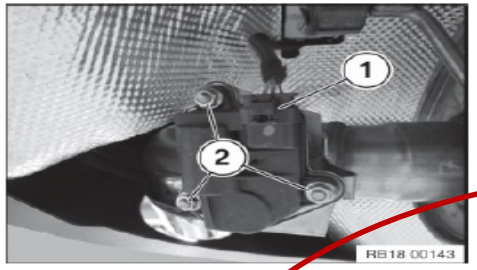
Network DTCs (U-prefix codes) are often a result of intermittent concerns such as damaged wiring or low battery voltage occurrences. Additionally, vehicle repair procedures (such as module reprogramming or diagnostics with modules disconnected) often set network DTCs. Replacing a module to resolve a network DTC is unlikely to resolve the concern. To prevent recurrence of intermittent network concerns, inspect all network wiring, especially in-line and module connectors. Test the vehicle battery to make sure the vehicle voltage will be stable.

Recommended practice: Clear the DTC and retest. If the DTC repeats, test the vehicle communication network.



Check exhaust flap for freedom of movement.

Attach actuator drive for exhaust flap and ensure that the actuator drive with torsion spring (1) is properly connected with the exhaust flap.



Install actuator drive for exhaust flap.

Tighten down screws (2).

Tightening torque 18 31 5AZ.

Connect connector (1) for actuator drive.

Installation note:

If the actuator drive is over the end stop and cannot be connected with the torsion spring to the exhaust flap, the actuator drive must be moved to the installation position by using the diagnosis system. To do this, connect the connector for the actuator drive before installation.

Connect the vehicle with the BMW diagnosis system:

- Select the exhaust flap control.
- Select installation position button.

Manufacturers | Oem1st

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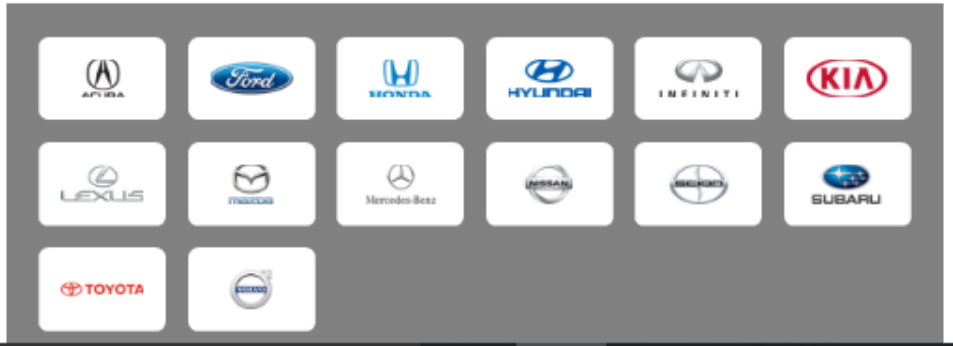
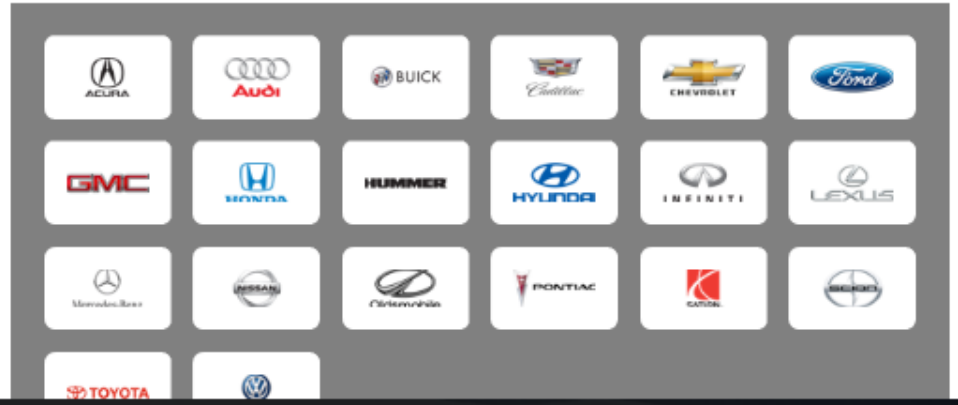
Parts

Aftermarket, Counterfeit & Gray Market Parts



Salvage Parts



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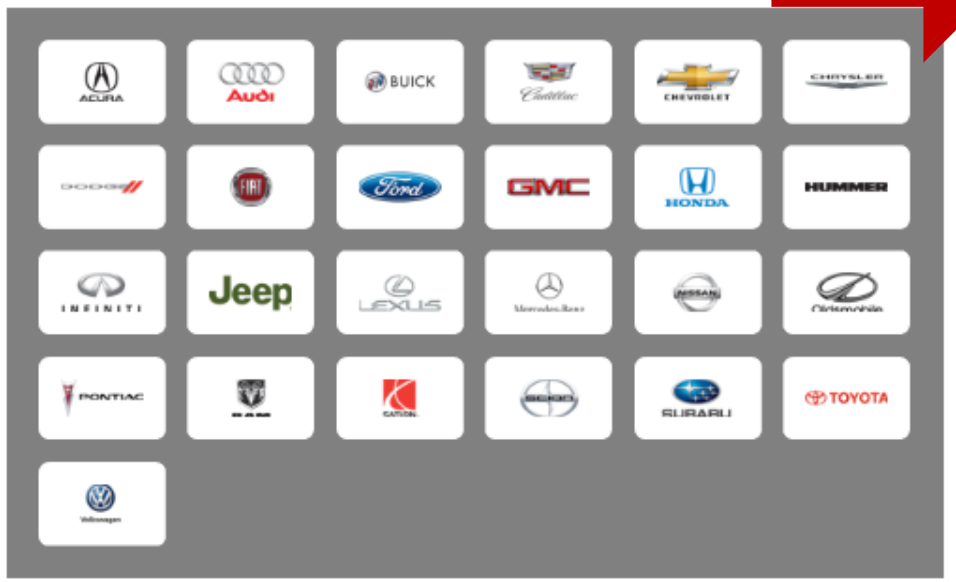
Wheel Reconditioning



Vehicle Repair Scanning

Please click on individual automaker pages for additional position statements



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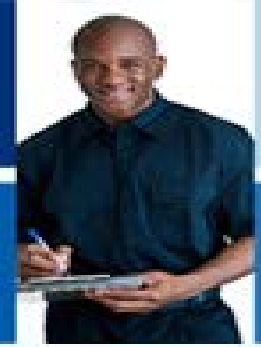
I am concerned that as an industry, We are becoming too reliant on "OEM Position Statements" to tell us how to repair a vehicle safely!

OEM Position Statements CAN NOT and SHOULD NOT replace the emphasis and importance of researching OEM Repair Procedures!

Thoughts from Mike Anderson – Collision Advice



Researching OEM Repair Procedures

Presented by: Mike Anderson
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When I Meet With The OEM's I Ask Them…

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Liability

- Liability is the biggest issue that keeps OEM's awake at night
- Let me tell you a story…
  - Toyota with Blind Spot Monitor (BSM)
  - Repaired rear quarter panel
  - Repair was off by 7 degrees
  - OEM documentation said couldn't be off by more than 5 degrees



2015 Toyota Avalon

Scan Readings

Initial Recorded Faults:

SRS Airbag

- **B1801** Open in Driver squib circuit
- **B1811** Open in Driver squib dual stage 2nd step circuit

Blind Spot Monitor Master

- **C1AC1** Master module horizontal axis misalignment

Snapshot Data

- Freeze Frame Data not available:

Blind spot module indicating horizontal axis is misaligned: 5 degrees max deviation.

2015 Toyota Avalon

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C1AC1 - Master Module Horizontal Axis Misalignment

DESCRIPTION

This DTC is stored when the angle of the blind spot monitor sensor LH deviates more than the allowable range from the horizontal axis.

HINT
If drum tester such as a speedometer tester, brake/speedometer combination tester or chassis dynamometer is used with the blind spot monitor main switch (warning canceling sv

Zoom and Print Options

DTC No.	DTC Detection Condition	Trouble Area
C1AC1	When the blind spot monitor sensor deviates 5 degrees or more from the horizontal axis when the system is activated.	Blind spot monitor sensor LH

5 Degrees MAX Deviation

INSPECTION PROCEDURE

NOTICE:
When checking for DTCs, make sure that the blind spot monitor main switch (warning canceling switch assembly) is on.

PROCEDURE

1. CHECK INSTALLATION CONDITION

(a) Check the installation condition of the blind spot monitor sensor LH See: Collision Avoidance and Parking Assist Systems > Initial Inspection and Diagnostic Overview > Operation Check.

HINT
Take the appropriate action in accordance with the result.

NEXT -- Continue to next step.

2. PERFORM BEAM AXIS CONFIRMA

Requires Toyota Specific Target



2015 Toyota Avalon

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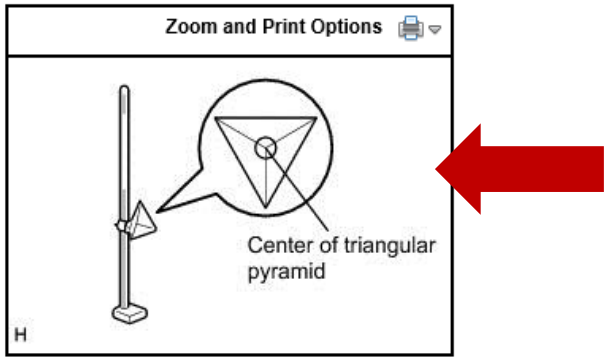
* The center of triangular pyramid is the reference point for the setting position and angle.

Zoom and Print Options



* Set the reflector as shown in the illustration so that its center of triangular pyramid faces the blind spot monitor sensor.
* Perform the operation as precisely as possible.

(c)Perform the blind spot monitor beam axis display.

(1) Connect the Techstream to the DLC3.

(2) Turn the engine switch on (IG).

(3) Turn the blind spot monitor main switch (warning canceling switch assembly) on.

(4) Turn the Techstream on.

(5) Enter the following menus: Body Electrical / Blind Spot Monitor Master or Blind Spot Monitor Slave / Utility / BSM Master beam axis display or BSM Slave beam axis display.

(6) Check the results displayed for the BSM beam axis display.

Allowable Range:

Zoom and Print Options

Item	Blind Spot Monitor Sensor LH (Master)	Blind Spot Monitor Sensor RH (Slave)
Angle	-3.6 to +3.6 °	-3.6 to +3.6 °
Distance	2.0 to 3.0 m (6.56 to 9.84 ft.)	2.0 to 3.0 m (6.56 to 9.84 ft.)



Key Performance Indicators – Scorecards are Coming for OEM's

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Total Cost of Repair
- Repair v. replace
- OEM Part %
- Avg. labor hrs
- Paint materials %

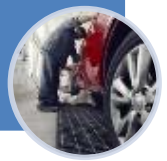
Estimate

OEM Part %
- Alt parts detail
- Part count
- Parts % total repair
- Repair v. replace

Parts

Cycle Time
- Repair stages
- Assign to start
- LOR
- Hours per day

Cycle Time

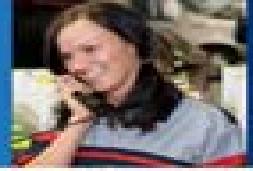


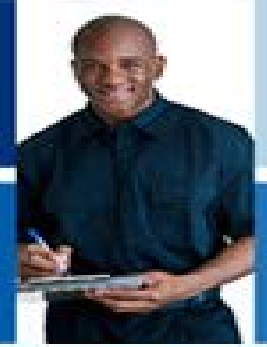
Quality/Safety
- OEM Repair Procedure Usage
- Scanning
- Was vehicle returned to shop

Quality

CSI
- Kept Informed
- On-time delivery
- Net Promoter Score (NPS)

CSI





Self-Driving Cars

Presented by: Mike Anderson
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Self-Driving Cars…

- **How long do you think it will be before we see mass adoption of autonomous vehicles?**
  - Some of the car companies are claiming they'll have deployment in 2020.
  - It is not the priority of the OEM's – just makes for good news!
    - Safety (Reducing fatalities and bodily injury) is the focus, as well as improved comfort features
  - At the same time, the number of vehicles on the road reached a record level of almost ***253 million,*** an increase of more than 3.7 million, or 1.5%, since last year, IHS Automotive reported.
    - That is a level that the auto industry hasn't seen in the U.S. since 2004-05
  - ***Other barriers to self-driving cars***
    - Political i.e. Legislation
    - Psychological
    - Legal and infrastructure problems.



Self-Driving Cars…

- The average life of a vehicle on the road today is more than 11 years
- The average turnover rate, the ratio of the number of vehicles registered in the US to the number of sales, ***is 14 years*** indicating a maximum vehicle age.
- Therefore, it will take at least 14 years after all new vehicles sold are autonomous and before crash regulations could be eliminated.
- However, this is the only the average life of a vehicle.
  - This does not include vehicles older than 11 years, nor does it include collector vehicles.
  - Therefore, it would realistically take at least two decades after 100 percent autonomous vehicle sales before regulations are relaxed.
  - In the meantime, all vehicles would need to comply with current requirements

Self-Driving Cars…

- In addition to vehicles colliding with another vehicle or other objects, we also need to consider other accidents that may occur, such as animals running in front of cars or trees falling onto a vehicle during a storm.
- Will sensor technology be able to process these incidents as quickly and successfully as collisions with vehicles?
- What if swerving to avoid a pedestrian or deer makes you collide with a building or another car?
- Will all obstructions be avoidable?
- California Rolling Stop !



Self-Driving Cars…

- These important questions regarding safety requirements do not need to be answered right now.
- Keep in mind, the body structure does more than provide crashworthiness.
  - Along with the chassis and suspension systems it provides the ride and handling experience.
  - To reduce the requirements of structural materials, such as steel in these applications would ***assume high-quality, well-maintained surfaces for all roads and parking lots your vehicle will*** encounter.
- In addition, road lane markings must be maintained along with road signage and other markings the vehicle will be monitoring.
  - Some might say this would be more difficult to achieve than eliminating collisions.
  - ***When was the last time you hit a Pot Hole!***



Five Unintended Consequences of the Autonomous Car Trend

1. **It's scary.** Just about everyone has experienced the special frustration of having their computer crash. Not everyone is willing to trust a fallible invention like that with their safety at 50-plus miles per hour. Not everyone relishes the thought of relinquishing control: in fact, it scares the bejeebers out of some.
2. **It steals the joy.** Some people like to drive. They don't want to lose the fun of controlling a vehicle, or the personality of that relationship. Some like to get their hands greasy trying to make a car go as fast as possible. Neither of those desires need apply to the autonomous vehicle trend.
3. **It removes your importance.** Semi-autonomous features are one thing, but a car that requires no human input at all is liable to make a person feel their car just doesn't need them anymore. Insofar as that's freeing, well and good. But if it makes the driver feel irrelevant, uninvolved - like a third wheel, so to speak - that's not such a draw

http://www.silvervinesoftware.com/blog/five-unintended-consequences-of-the-autonomous-car-trend



Five Unintended Consequences of the Autonomous Car Trend

4. **It threatens jobs.** If the last couple points were a bit sentimental, this one should bring us back down to earth. The most common occupation in the overwhelming majority of states is truck driver, according to NPR data.
   - The industry represents 8.7 million jobs, with millions more that exist to serve drivers en route.
   - The drivers themselves (numbering 3.5 million) earn a solid middle class income. What would this picture look like if the self-driving truck were to crash that scene?
5. **It might hurt the planet.** According to a data analysis of multiple scenarios recently published in a journal on transportation policy and planning, autonomous cars could decrease our demand for energy by as much as 45 percent - or, conversely, it could more than double it. Rising energy demand translates to a heavier environmental footprint.

http://www.silvervinesoftware.com/blog/five-unintended-consequences-of-the-autonomous-car-trend



John Eagle Case

Two Important Lessons to Be Learned

1. Liability is different than a warranty and it does transfer

2. When you are an OEM-approved shop you are expected to repair the vehicle according to the OEM repair procedures.
   - It is implied.
   - If you do not, then it is negligence.



Challenges to Overcome

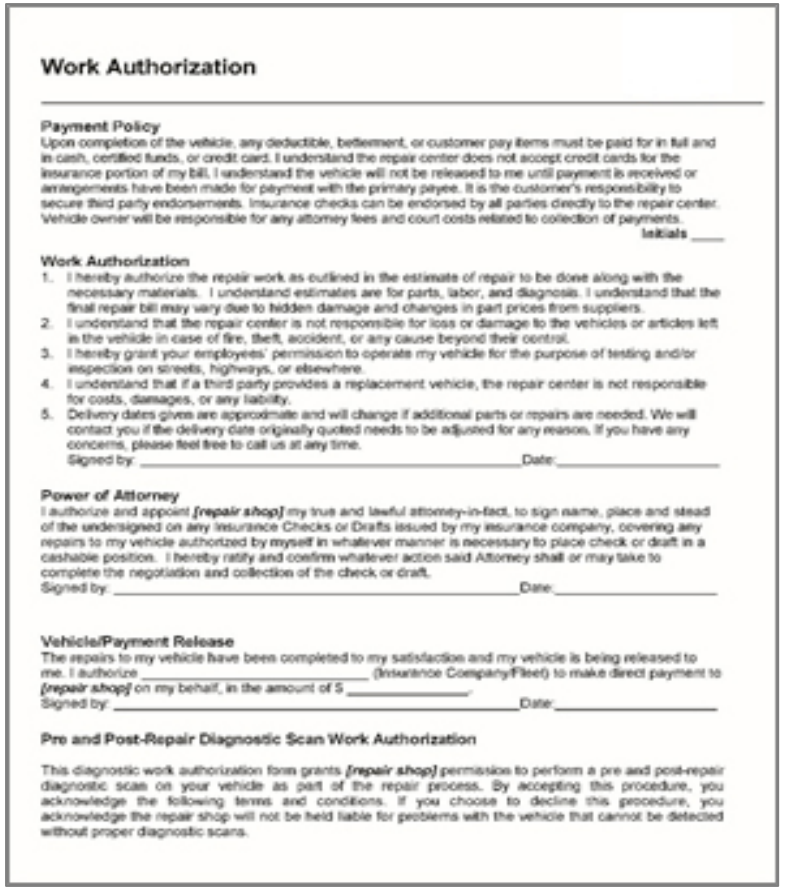
- *Lack of labor times in the estimating systems*
- *Insurers unsure of what is " Fair & Reasonable"*
- *Lack of Knowledge on all parties as to what is required*
- *Required versus Recommended*
- *Impact on Severity*
- *Dealership Service Departments complicate things "uninformed"*
- *Capabilities of shops and various scan tools*
- *OEM Score cards*
- *Consumers misconceptions, oh I can just do that with my " Best Buy" app!*
- *Calibrations, Initializations, and so much more*
- *A new Role in Collision Repair – It is more than the scan tool it is the Technician's ability to understand and perform and out put and functionality test and the ability to research the root cause of the DTC's*
- *Test Drives required! More now than ever before!*
- *Verification of repaired or replaced panels where Accident Avoidance Features are mounted or located !*
- *What no one wants to talk about is all the vehicles that didn't get done up until now ! That should have !*
- *Where do we go from here!*
- *This is a multi Billion Dollar a year industry !*

Customer Authorization Form - Scanning

Still No Industry Standard – One Insurer has addressed it !

COLLISIONADVICE

- Issues have arisen on who owns the vehicle data
- Need the customer to sign a work authorization stating:
  - They understand and agree that this information may be shared with an insurer or other third-party
  - The collision repair center will follow OE procedures and doesn't take responsibility for aftermarket parts or modifications
  - The collision repair center will collect historical vehicle data, including in some cases date, time and mileage of when a DTC was created
  - That scans are recommended for all vehicles to ensure the vehicle is repaired safely



Work Authorization

Payment Policy
Upon completion of the vehicle, any deductible, betterment, or customer pay items must be paid for in full and in cash, certified funds, or credit card. I understand the repair center does not accept credit cards for the insurance portion of my bill. I understand the vehicle will not be released to me until payment is received or arrangements have been made for payment with the primary payee. It is the customer's responsibility to secure third party endorsements. Insurance checks can be endorsed by all parties directly to the repair center. Vehicle owner will be responsible for any attorney fees and court costs related to collection of payments.
Initials ____

Work Authorization
1. I hereby authorize the repair work as outlined in the estimate of repair to be done along with the necessary materials. I understand estimates are for parts, labor, and diagnosis. I understand that the final repair bill may vary due to hidden damage and changes in part prices from suppliers.
2. I understand that the repair center is not responsible for loss or damage to the vehicles or articles left in the vehicle in case of fire, theft, accident, or any cause beyond their control.
3. I hereby grant your employees' permission to operate my vehicle for the purpose of testing and/or inspection on streets, highways, or elsewhere.
4. I understand that if a third party provides a replacement vehicle, the repair center is not responsible for costs, damages, or any liability.
5. Delivery dates given are approximate and will change if additional parts or repairs are needed. We will contact you if the delivery date originally quoted needs to be adjusted for any reason. If you have any concerns, please feel free to call us at any time.

Signed by: _____ Date: _____

Power of Attorney
I authorize and appoint ***[repair shop]*** my true and lawful attorney-in-fact, to sign name, place and stead of the undersigned on any Insurance Checks or Drafts issued by my insurance company, covering any repairs to my vehicle authorized by myself in whatever manner is necessary to place check or draft in a cashable position. I hereby ratify and confirm whatever action said Attorney shall or may take to complete the negotiation and collection of the check or draft.
Signed by: _____ Date: _____

Vehicle/Payment Release
The repairs to my vehicle have been completed to my satisfaction and my vehicle is being released to me. I authorize _____ (Insurance Company/Fleet) to make direct payment to ***[repair shop]*** on my behalf, in the amount of $ _____.
Signed by: _____ Date: _____

Pre and Post-Repair Diagnostic Scan Work Authorization

This diagnostic work authorization form grants ***[repair shop]*** permission to perform a pre and post-repair diagnostic scan on your vehicle as part of the repair process. By accepting this procedure, you acknowledge the following terms and conditions. If you choose to decline this procedure, you acknowledge the repair shop will not be held liable for problems with the vehicle that cannot be detected without proper diagnostic scans.

In Summary…

Worried or Concerned

According to H. Stephens,

"There is a great difference between worry and concern. A worried person sees a problem, and a concerned person solves a problem“

What are you? Worried or Concerned?

Solutions

- We all need to become educated – insurers and shops
  - That's why Collision Advice will be holding monthly webinars with the focus being "***Learn to Research; Research to Learn"***
  - The primary focus and purpose of these FREE Webinars are to educate all industry entities as to how to navigate various OEM repair procedure websites from a collision repairers perspective to ensure a Safe and Proper Repair.

"Learn to Research, Research to Learn"



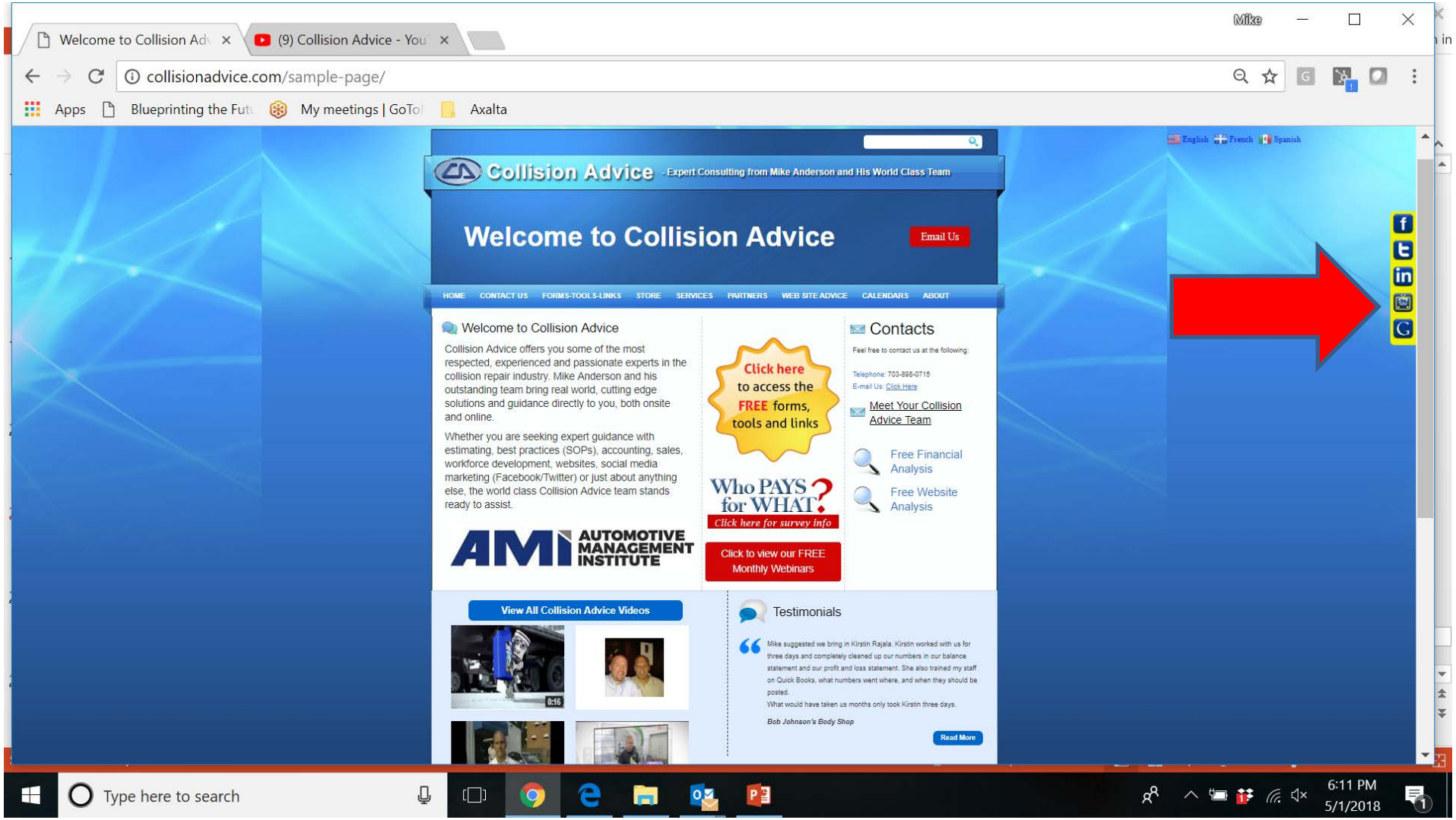
Webinar Schedule

COLLISIONADVICE

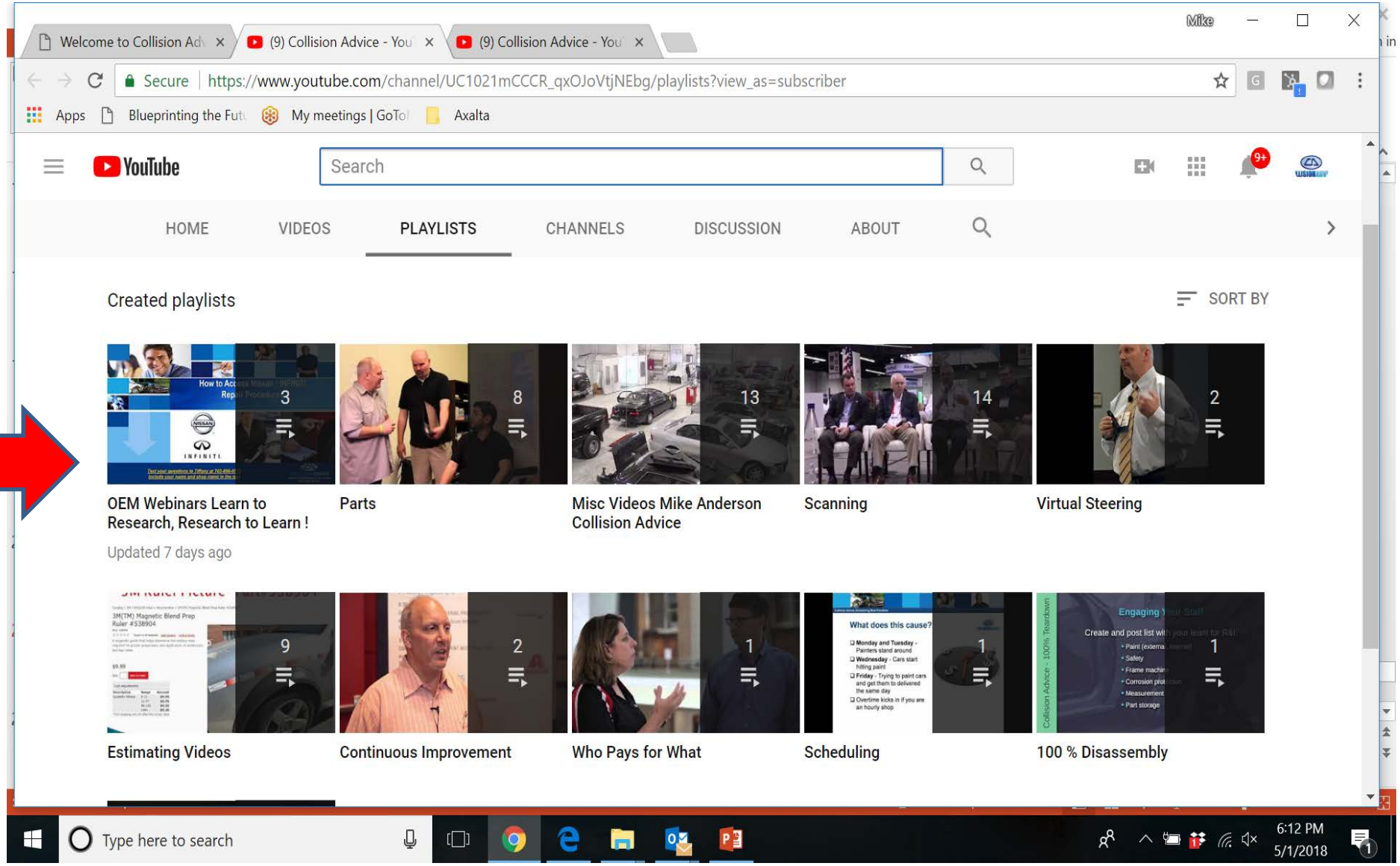
Date	Topic	
Wednesday, February 21st at 2 pm ET	Toyota OEM Webinar	Recording Available
Friday, March 23th at 9:15 am ET	FCA OEM Webinar	Recording Available
Monday, April 23rd at 2:00 pm ET	Nissan / Infiniti OEM Webinar	Recording Available
Thursday, May 24th at 2:00 pm ET	Nissan / Infiniti OEM Webinar Part 2	
Thursday, June 21st at 2:00 pm ET	Ford OEM Webinar	
Monday, August 20th at 2:00 pm ET	BMW OEM Webinar	
Thursday, September 27th at 2:00 pm ET	Audi OEM Webinar	
Monday, October 8th at 2:00 pm ET	Subaru OEM Webinar	
Tuesday, November 6th at 2:00 pm ET	Honda/ Acura OEM Webinar	
Thursday, December 13th at 2:00 pm ET	Volkswagen OEM Webinar	



Collision Advice Positioning Yourself in the Collision Repair Industry



Collision Advice Positioning Yourself in the Collision Repair Industry



It Was and Is My Honor…



Questions & Answers

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Thank you for your time and attention!



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For more information on Collision Advice Consulting Services or speaking engagements, please contact:

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mike@collisionadvice.com
Cell 301-535-3333

Tiffany Driggers
tiffany@collisionadvice.com
Cell 703-898-0715

Check out Mike's New Consulting Calendar on our website!

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