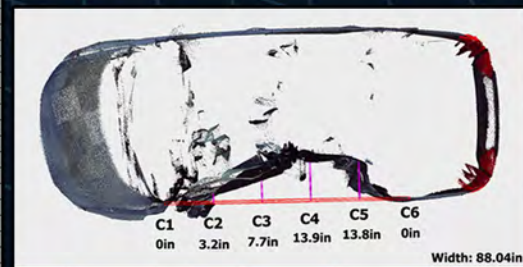
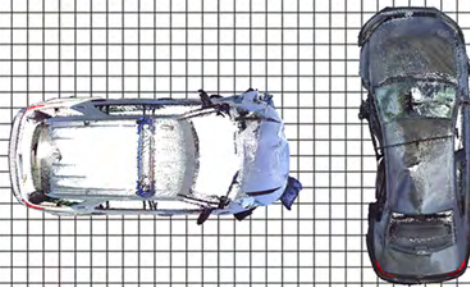
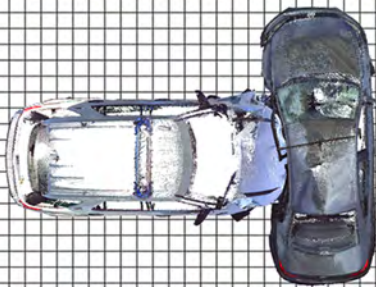
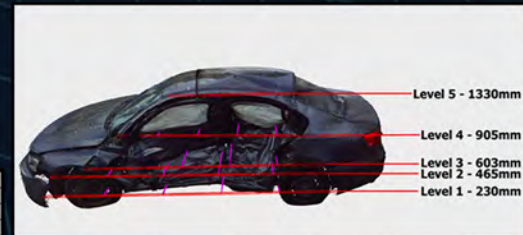
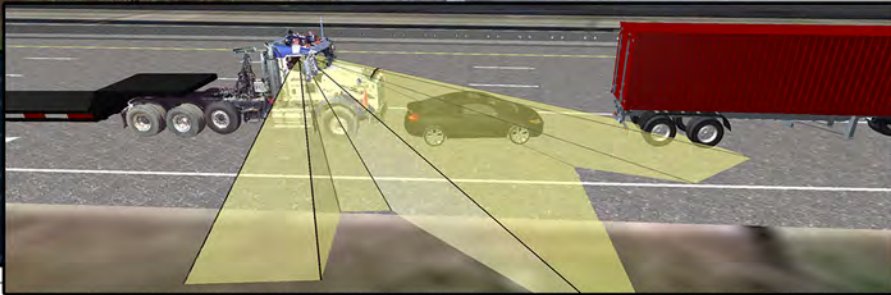


3D Laser Scanning

Laser scanning digitally maps vehicles and environments using millions of points (point-cloud) to preserve/display scaled evidence through a non-contact / non-destructive process.



Scanned vehicles can be placed inside scanned environments for evidence match-up and measurement and can be viewed from any angle. Vehicle and environment Point Clouds can also be used to expedite animations and exhibits.

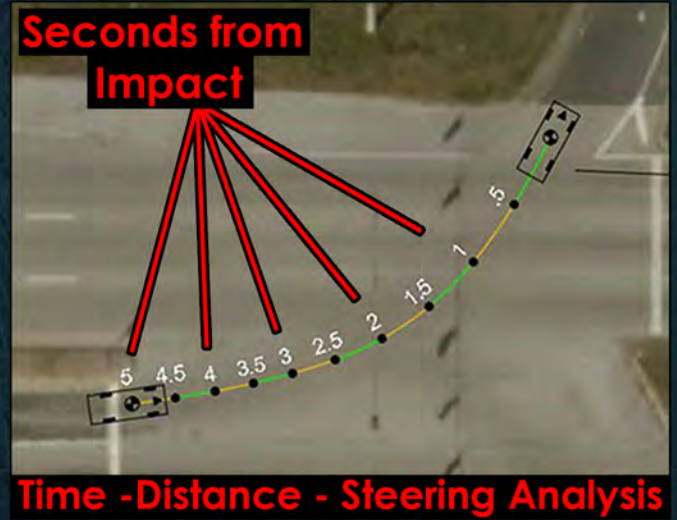


Bosch Crash Data Recorder

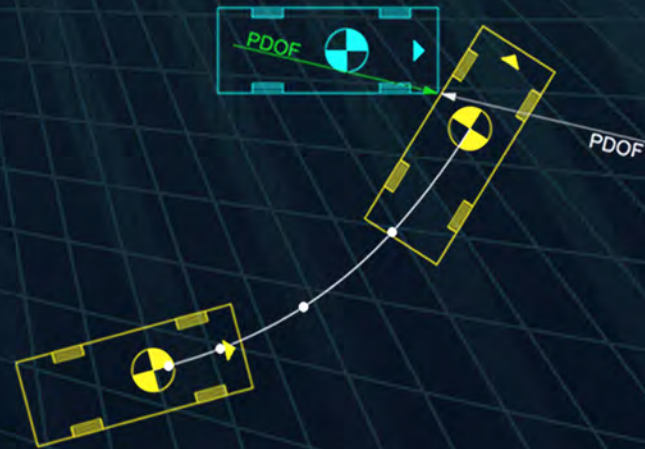
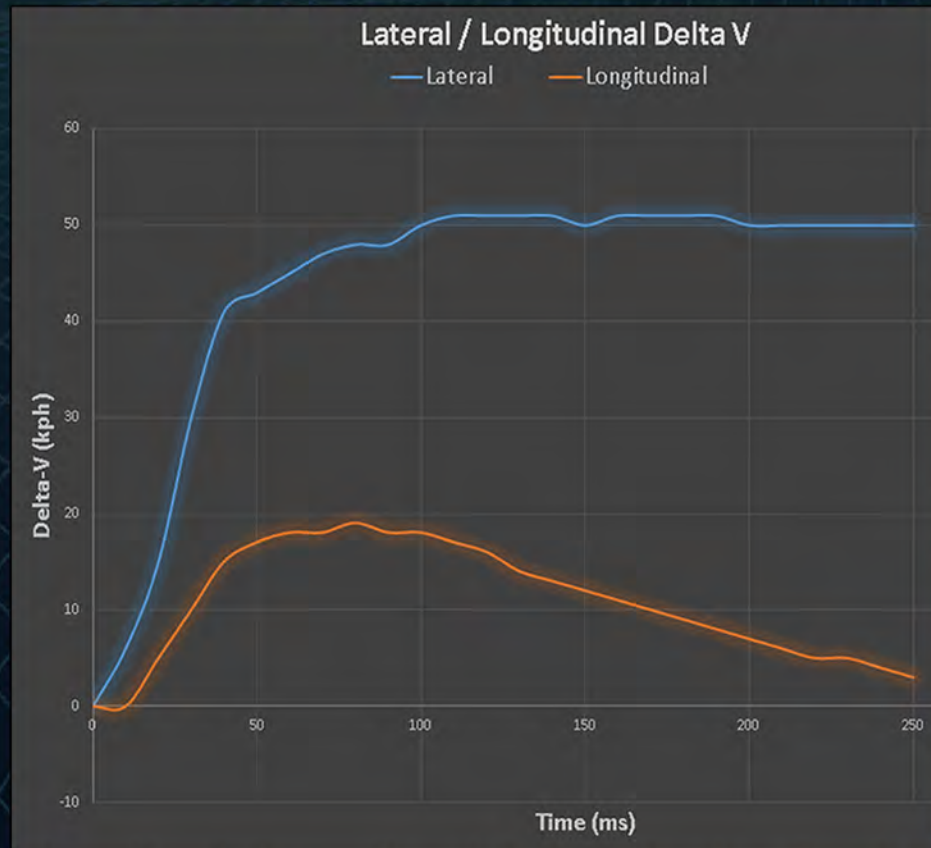
Tool to download crash data from supported vehicle's airbag control modules (ACM) and power train control modules (PCM).

Pre-Crash Data - Used to determine the location and orientation of the vehicle

Time (sec)	Speed (mph)	Accelerator (%)	RPM	Brake (on/off)	Steering (deg)
-5.0	12	0	1300	on	30
-4.5	11	0	1200	on	40
-4.0	11	0	1100	off	42.5
-3.5	11	7	1500	off	55
-3.0	11	10	2000	off	77.5
-2.5	13	10	1600	off	145
-2.0	15	9	1700	off	152.5
-1.5	16	13	1700	off	145
-1.0	18	13	1900	off	90
-0.5	20	15	2000	off	65
0.0	21	24	2100	off	65



Post Crash Data: Delta V & Acceleration used to determine PDOF / Momentum



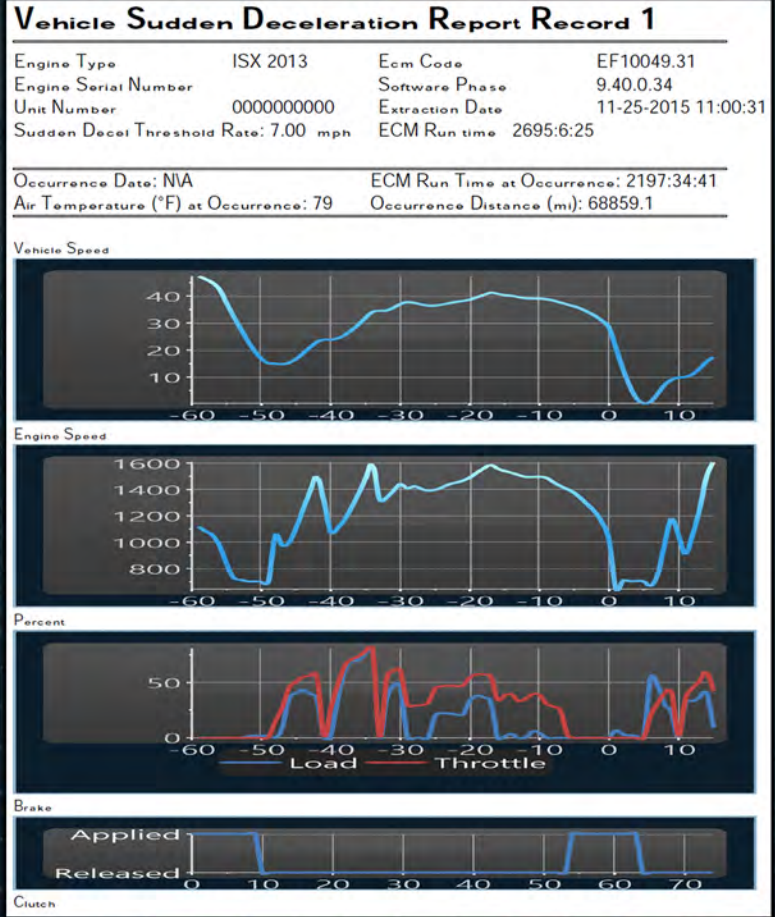
[For Supported Vehicles, Click Here](#)

Commercial Vehicle Testing/Downloading

Software/Hardware to download incident data from supported vehicle's engine control module (ECM).

Incident Data - Speed, Throttle, Brake

Time (Seconds)	Vehicle Speed (mph)	Engine Speed (rpm)	Engine Load (%)	Throttle (%)	Brake Status
-23	37	1440	21.9	47.1	-
-22	38	1451	21.1	46.9	-
-21	38	1467	21.1	47.2	-
-20	39	1490	33.6	54.8	-
-19	39	1528	37.9	57.5	-
-18	40	1560	36.3	57.2	-
-17	41	1586	32.0	55.5	-
-16	41	1558	0.0	33.8	-
-15	40	1540	1.2	38.5	-
-14	40	1527	3.5	39.3	-
-13	40	1509	0.0	33.1	-
-12	39	1495	0.0	35.3	-
-11	39	1494	5.9	39.6	-
-10	39	1496	4.3	38.6	-
-9	39	1488	0.0	30.9	-
-8	38	1455	0.0	28.1	-
-7	38	1426	0.0	24.8	-
-6	37	1402	0.0	3.2	-
-5	36	1375	0.0	0.0	On
-4	35	1330	0.0	0.0	On
-3	34	1282	0.0	0.0	On
-2	33	1228	0.0	0.0	On
-1	31	1150	0.0	0.0	On
0	28	1016	0.0	0.0	On



Supported On-road Engine Manufacturers:

-  Caterpillar - 1997 - 2010*
-  Cummins - 2005 - current
-  Detroit Diesel - ~1997 - current
-  International - 2011 - current
-  Mercedes - 2001 - current
-  Mack** - ~2011 - current
-  Volvo** - ~2011 - current

* (incident data capture OFF by default from factory)

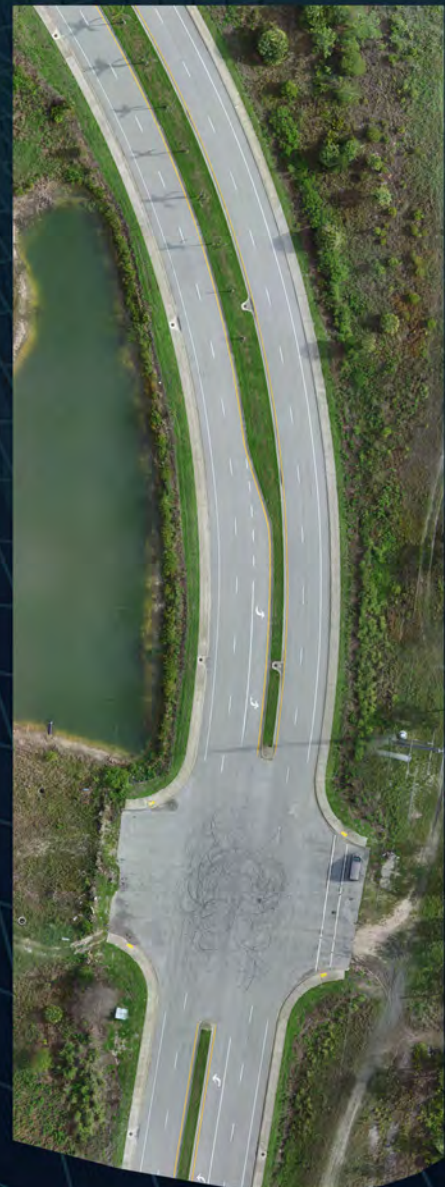
** (ECM only readable by 3rd party)



Aerial Drones

Elevated high-resolution photographs and video of very large or inaccessible areas using manual and pre-programmed drones, creates scaled 2 & 3-dimensional drawings and models. Enables accurate measurements of accident evidence and environmental geometry.

Flown/Operated by certified drone operator per Federal Aviation Administration, compliant for commercial use. For sites within a given distance radii of airports, FAA pre-approval is required.



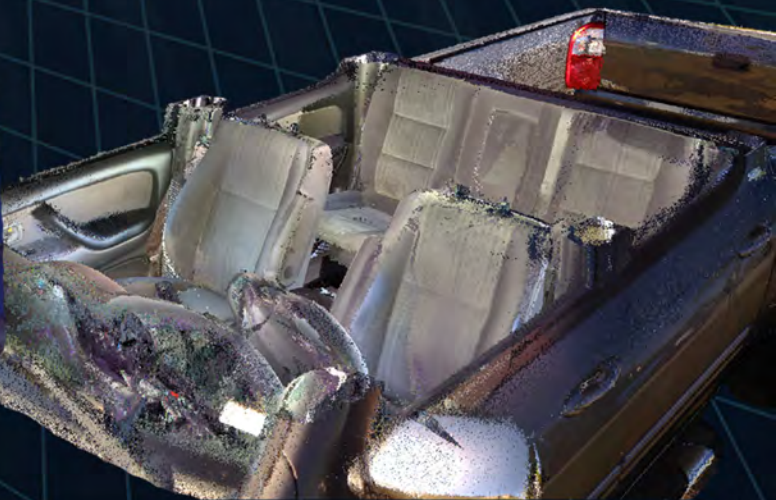
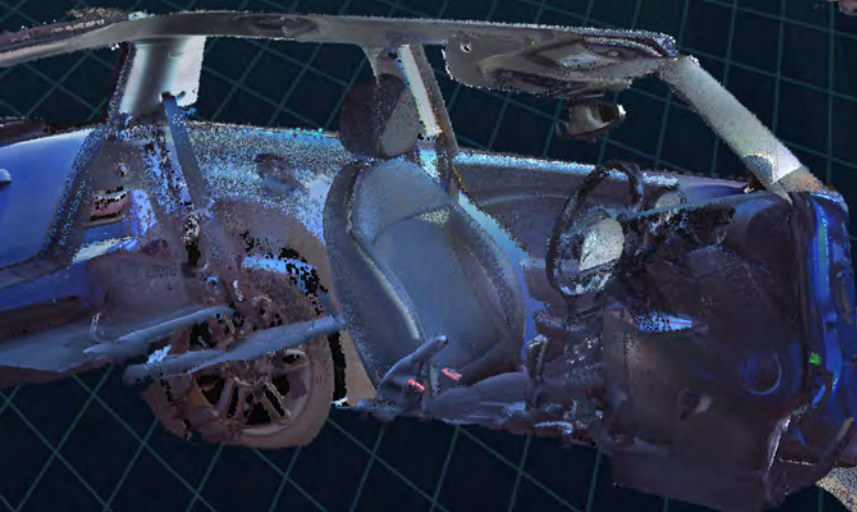
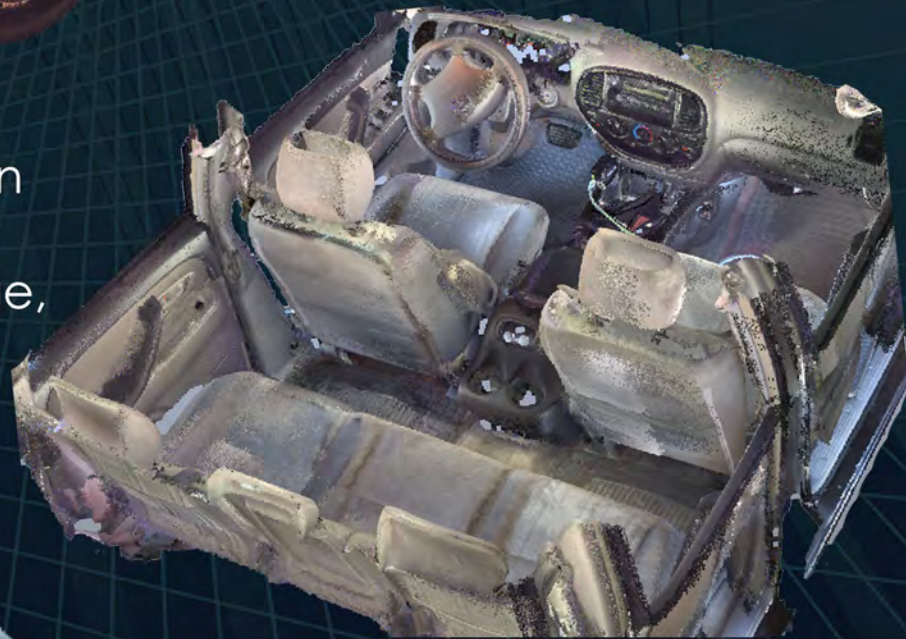
Faro Freestyle 3D Scanner

Similar to the larger Faro 3D Laser-based scanner, the freestyle captures accurate point data and can access harder to scan area's like car interiors.



This technology also works well with smaller vehicles such as motorcycles, bicycles, and ATV's, which contain more tubular designs.

Additionally, the Freestyle can be used to focus on areas, such as vehicle crush damage, and combined with the Faro Laser Scanner for a more detailed result.



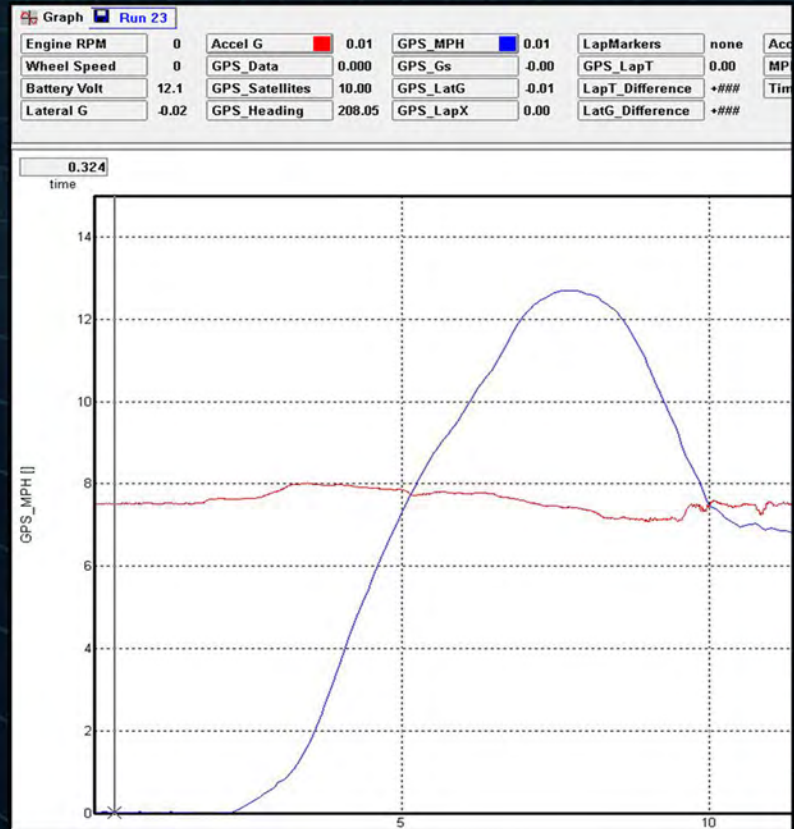
G2X - Data Logging System

Records dynamic information, lateral and longitudinal acceleration, speed, and other vehicle parameters via the OBD2 port for use in testing and drive-thru at site inspections.



On-Screen Display

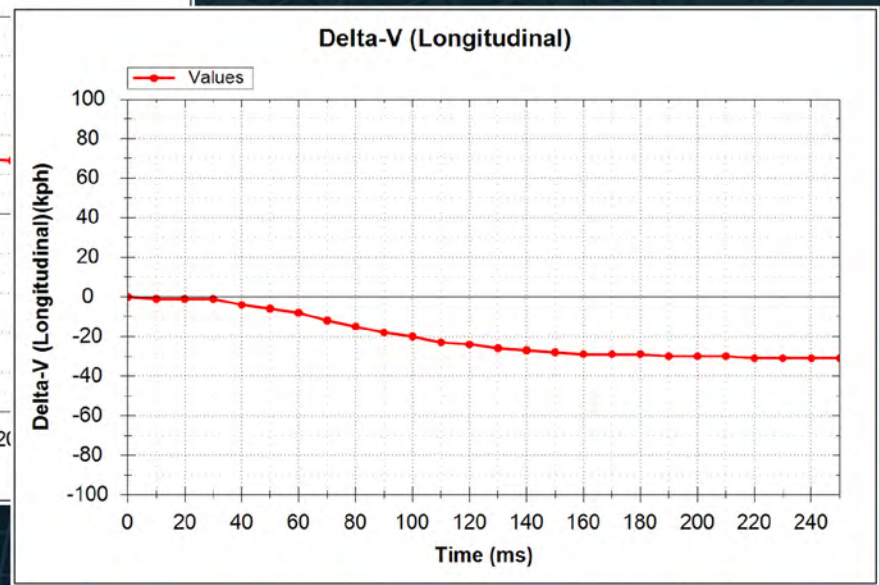
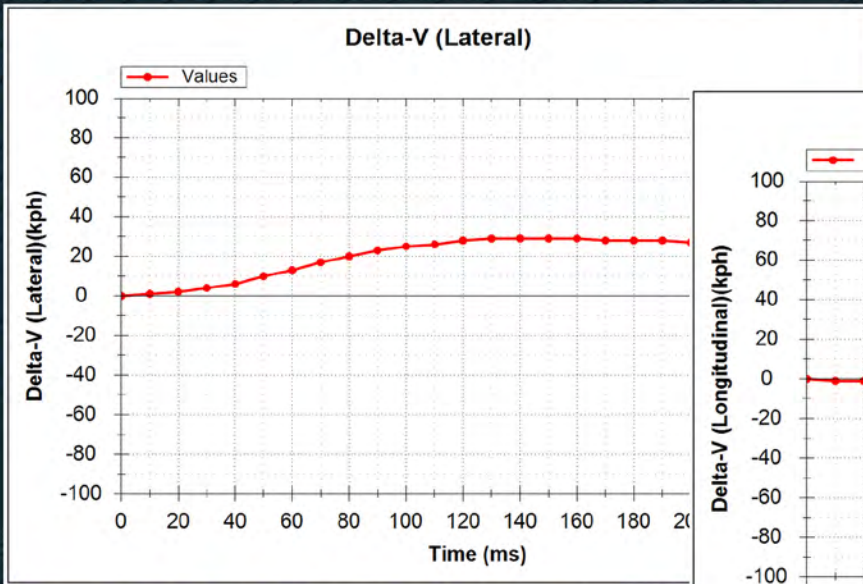
Speed Acceleration
RPM GPS Track
Throttle/Brake Pos



Hyundai & KIA Crash Data Recorder

Hyundai and Kia require separate tools to read their vehicle's Air Bag Control Units (ACU), for vehicles produced after September 1, 2012 (2013 model year).

The ACU in these vehicles performs similarly to the ACMs in other vehicles, downloadable by the Bosch tool, with the Hyundai/Kia tools reading similar information of crash data.



Time (sec)	Vehicle Speed (kph)
-5.0	0
-4.5	0
-4.0	1
-3.5	5
-3.0	10
-2.5	15
-2.0	20
-1.5	25
-1.0	28
-0.5	29
0.0	31

IVe - Infotainment Analyzer

Vehicle System forensic tool which can access vehicle's hard drive and/or navigation system to extract connected phone information and Navigation /Telematic data

NAVIGATION:

Recent destinations, GPS track logs (everywhere vehicle has been) & info (speed vs. time)



Telematics Systems:

GM-Onstar – BMW-Assist – Ford-Sync – Toyota-Entune – Chrysler-Uconnect – VW-CarNet
(Available Data; lights on/off, doors open, warning lights, safety systems)

Phone:

A connected/linked phone is downloaded to the vehicle's CPU – all of the following information can be accessed from the connected/linked phone;



Call Log Entries: Start Time - Phone Number - Contact Name

Contacts: Phone Number Name Company Email

Tracks: Date/Time - Lat/Long - Distance - Speed

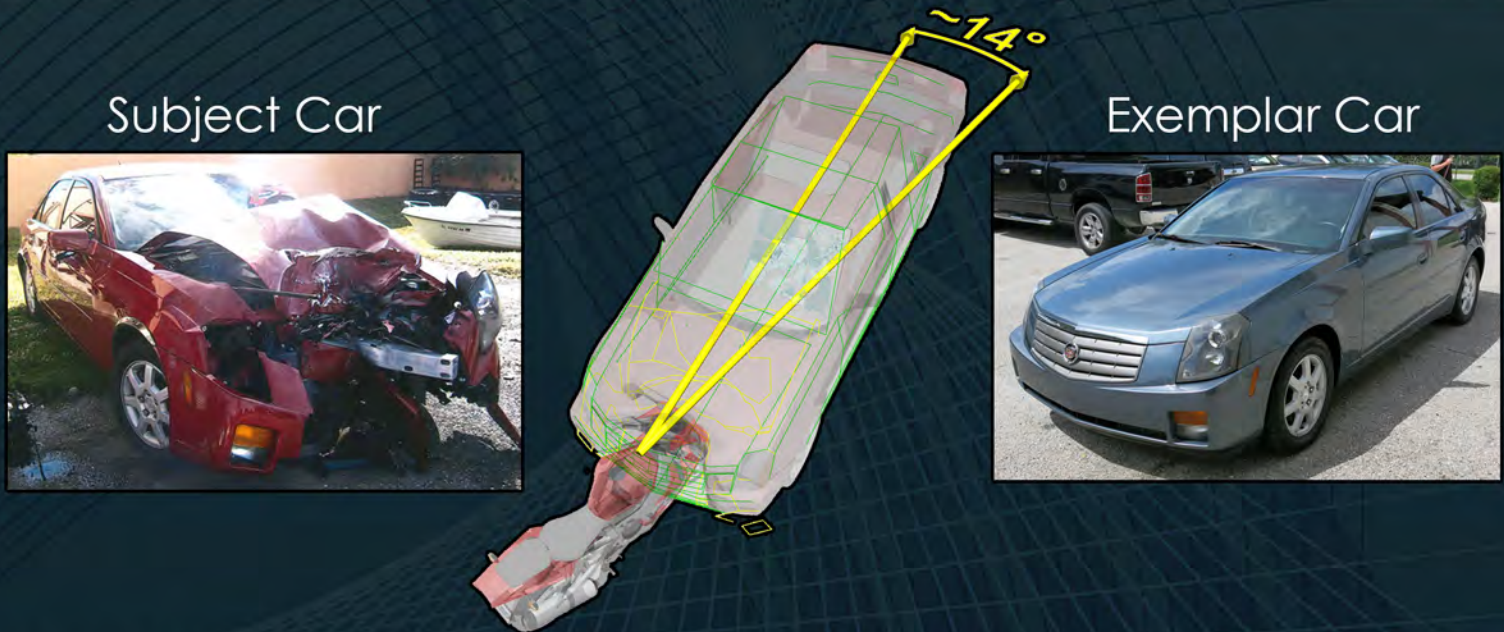
Text Messages: Date/Time – To/From – Body – Read status & Content

Supported Manufacturers:

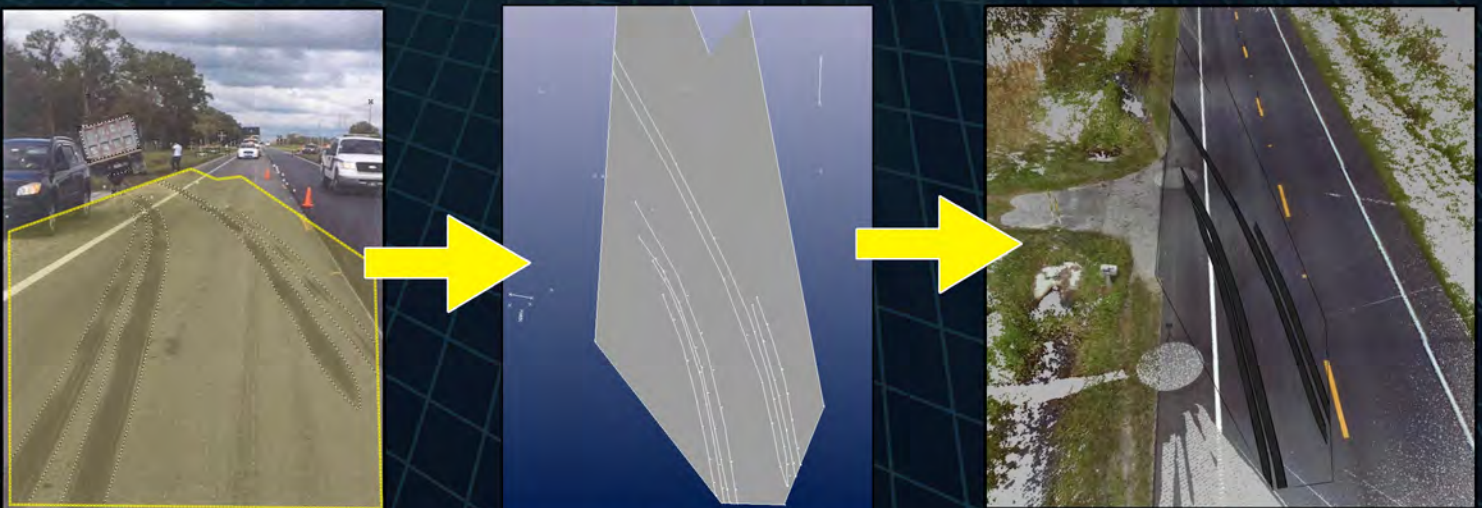
BMW – BUICK – CADILLAC – CHEVROLET – CHRYSLER – DODGE – FIAT – FORD
– GMC – HUMMER – JEEP – LINCOLN – MASERATI – MERCURY – PONTIAC –
RAM – SATURN – SRT – TOYOTA – VOLKSWAGEN

Photogrammetry

Process used to extract information/measurements from ONLY photographs. Useful when the subject vehicles and/or accident locations are no longer available for inspection, or in a similar configuration as at the time of the accident.



Exemplar vehicle is scale-matched to subject vehicle's damaged photographs to produce wire-frame model for measurement/analysis



Scene photographs are scale-matched to known existing measurements in order to trace roadway evidence for measurement/analysis

Photoscanning

Process of combining only photographs into a 3D model for measurements / orientation. Useful when vehicles are not available or 3D scanning is not possible.

Many Photos Taken



Photo of Subject



Model created from Photo's



Model used for Reconstruction



Photo of Subject Car



Model used for Reconstruction



Many Photos Taken



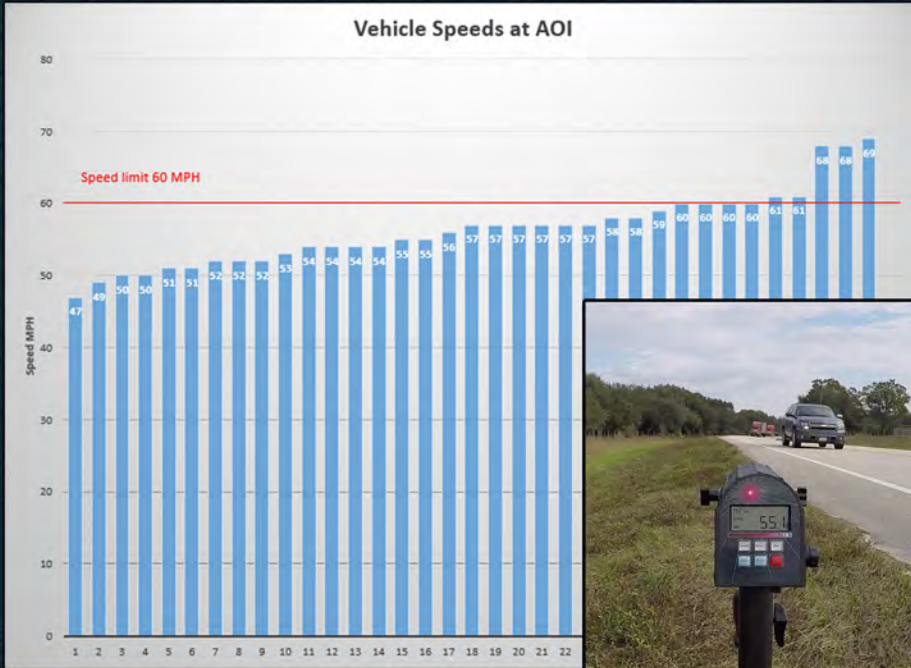
Model created from Photos



The model can then be used for graphical recreation of the accident and further reconstruction analysis.

Stalker ATS II Radar

Records Acceleration and Speed per time, used for providing statistical analysis / percentile vehicle speed at accident areas, as well as used for testing to provide speed, acceleration, and deceleration data both in graphic and tabular form.



Accident site speed samples



Instrumented Brake Testing

