

Case Studies in Trucking Case Digital Evidence & Manipulation

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Electronic Logging Devices (ELDs)

- ELDs must be installed and in use by the December 16, 2017 deadline which is two years after the publication date. The mandate applies to all drivers who are required to keep records of duty status, except commercial drivers who 1) drive eight or fewer days out of every 30 working days; 2) drivers in drive-away and towing operations and 3) operators who are driving vehicles older than model year 2000.

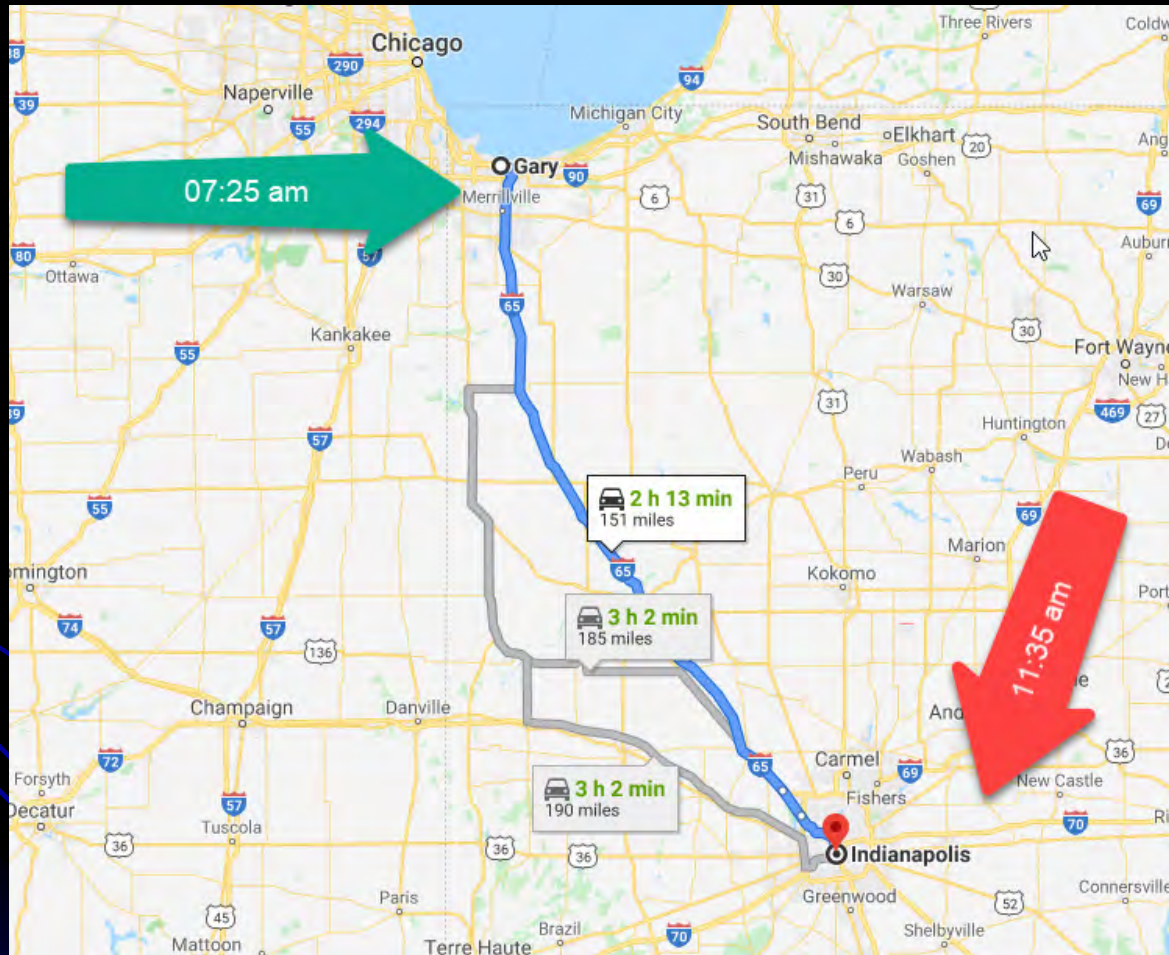
Electronic Logging Devices (ELDs)

- ELDs must be able to automatically record date, time and location information. Location will generally be in the form of GPS coordinates, but GPS is not required. It also must record engine hours which must be synchronized from the engine on and off time. Finally, the vehicle miles and driver identification information must be logged.

Trucks & Hyperspace

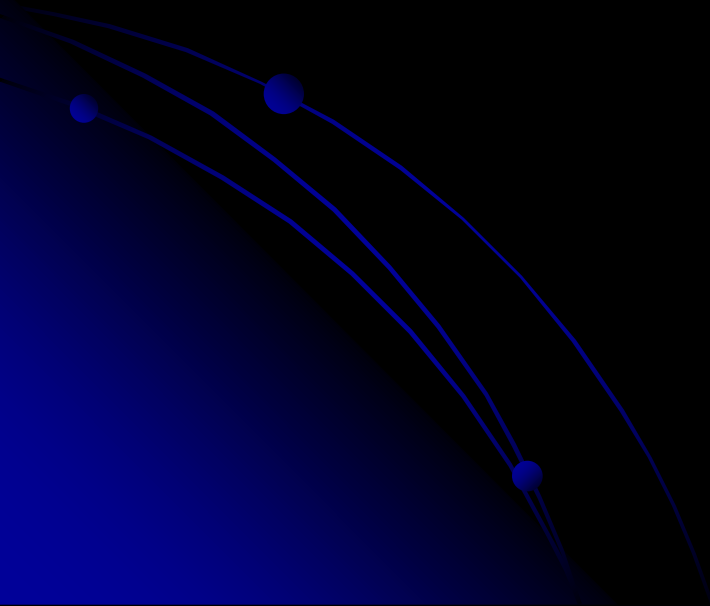
- Some 18 wheelers now have the ability to make hyperspace jumps.





- This driver disrupted his Omnitrac Device from recording his location and drove more than 2 hours without being logged.
- I thought his company was in collusion with him, but it turns out, while they should have known, they didn't know.
- Always ask for the GPS Coordinates in electronic / digital form (Excel CSV files)

Bytes Per Minute Analysis



1329977.002
06/12/2013
SCAMP

MOBILITY USAGE

Run Date: 06/12/2013
Run Time: 17:42:47
Data Usage For: (480) [REDACTED]
Account Number: 81342 [REDACTED]

Item	Conn. Date	Conn. Time	Originating Number	Elapsed Time	Bytes Up	Bytes Dn	IMEI	IMSI	Access Pt	Description
6374	05/26/11	10:00A	[REDACTED]	13:13	6677	111991	3534910416514804	310410366057466	acds.voicemai 1	_MOBILE_DATA_
6375	05/26/11	10:14A	[REDACTED]	5:08	0	0	3534910416514804	310410366057466	acds.voicemai 1	_MOBILE_DATA_
6376	05/26/11	10:31A	[REDACTED]	13:14	9271	49317	3534910416514804	310410366057466	BLACKBERRY.NE T	_MOBILE_DATA_
6377	05/26/11	10:31A	[REDACTED]	2:13	2639	8417	3534910416514804	310410366057466	WAP.CINGULAR	_MOBILE_DATA_
6378	05/26/11	10:44A	[REDACTED]	0:24	553	571	3534910416514804	310410366057466	BLACKBERRY.NE	_MOBILE_DATA_

1329977.002

06/12/2013

SCAMP

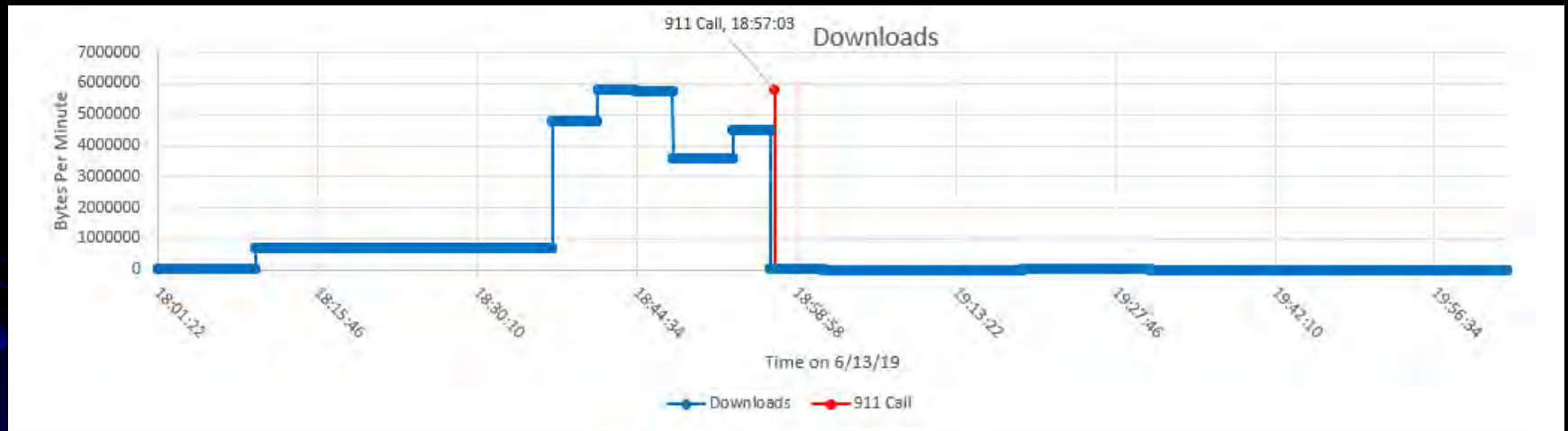
Run Date: 06/12/2013
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Data Usage For: (480) [REDACTED]
Account Number: 81342 [REDACTED]

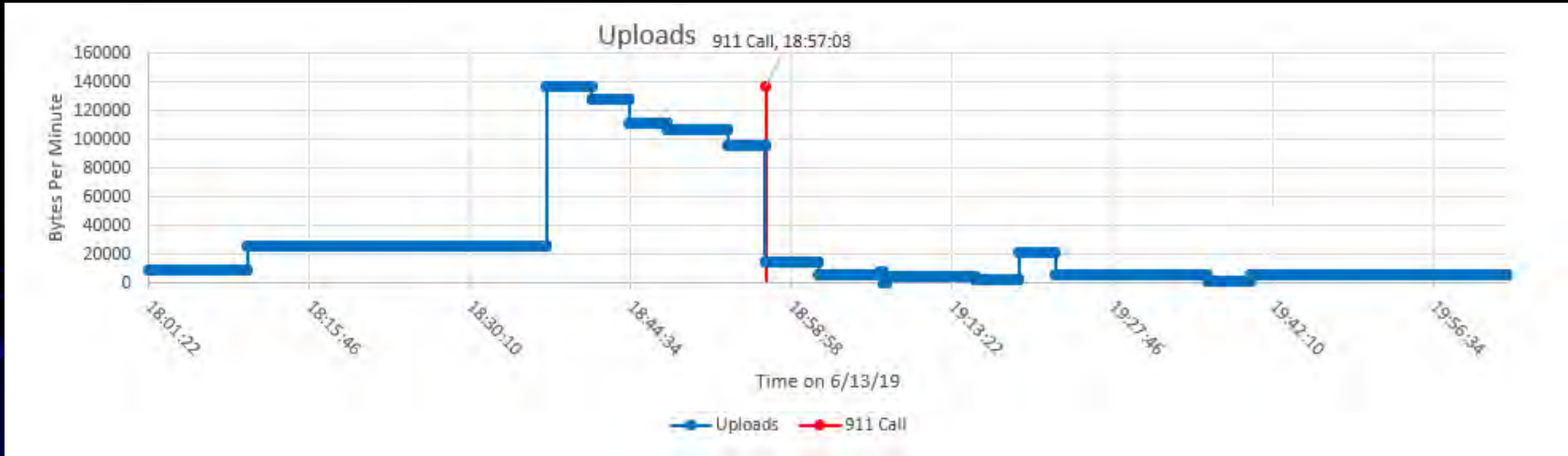
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6378	05/26/11	10:44A	[REDACTED]	0:24	553	571

When You Only Have CDRs for Data

- Data from the cell phone is the best thing to look at for cell phone data activity.
- However that's not always possible.

When You Only Have CDRs for Data

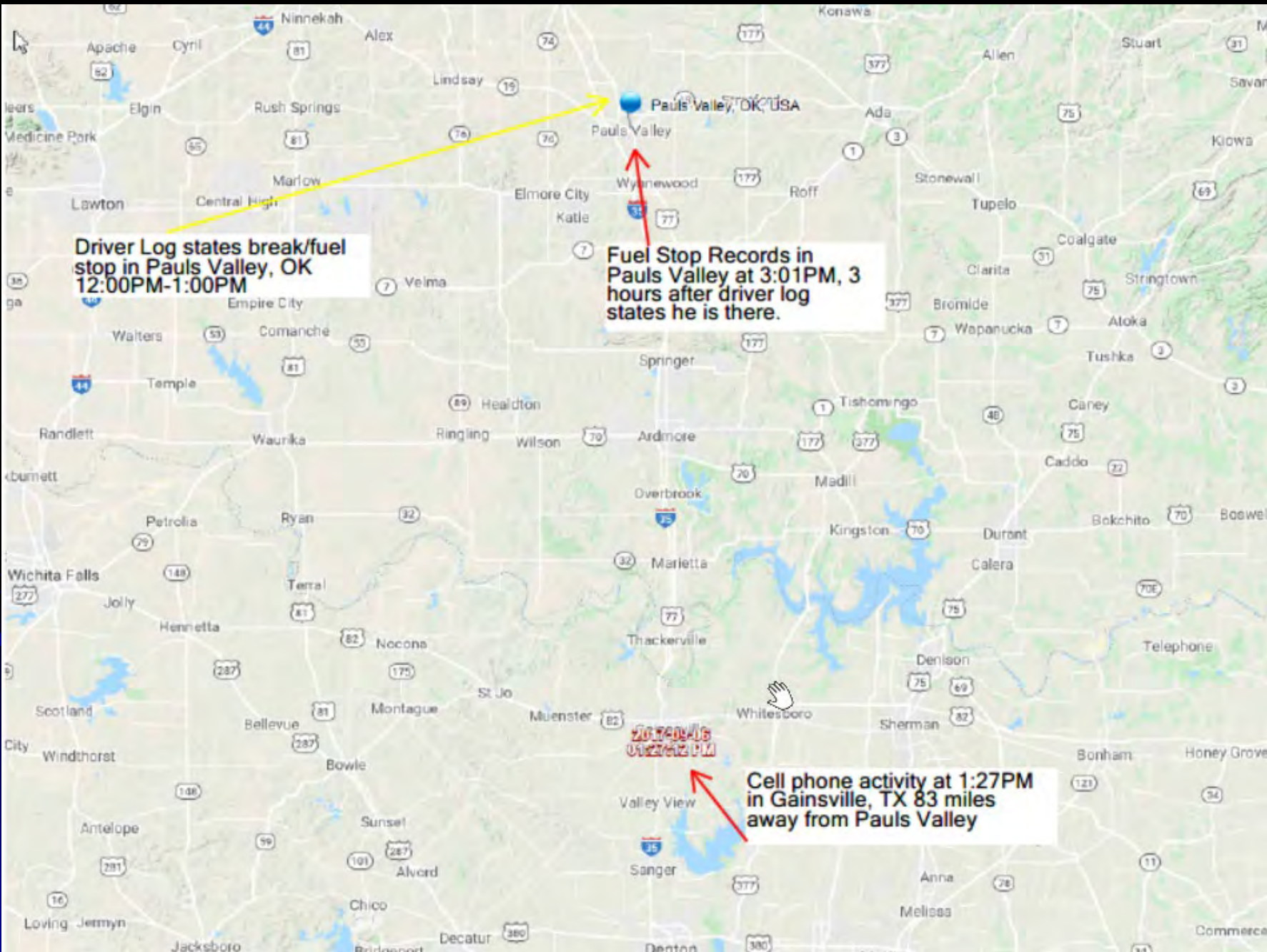




And then there is this...

- Remember to look on FaceBook





Driver Log states break/fuel stop in Pauls Valley, OK 12:00PM-1:00PM

Fuel Stop Records in Pauls Valley at 3:01PM, 3 hours after driver log states he is there.

2017-01-16 01:27 PM

Cell phone activity at 1:27PM in Gainsville, TX 83 miles away from Pauls Valley



September 8, 2017 near Alexander, ND

Friday, September 8, 2017 at 7:22am



Like



Comment



Share



Write a comment...



People You May Know

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September 8, 2017 near Alexander, ND · 🌐

Friday, September 8, 2017 at 7:22am

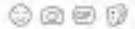
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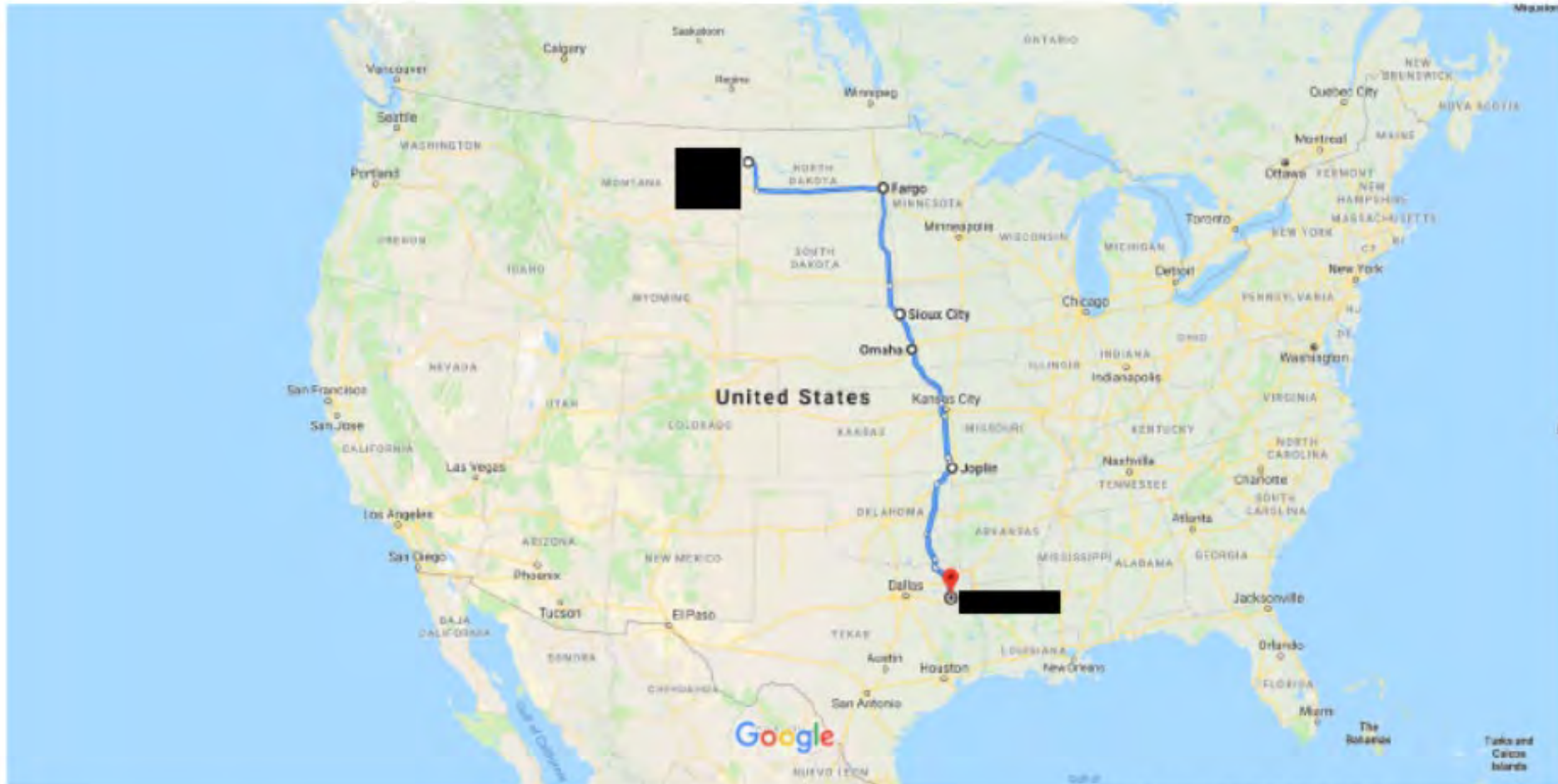
Write a comment...



People You May Know

See All

Alleged Route from 09/08/2017 - 09/09/2017



Map data ©2019 Google, INEGI 200 mi



via I-94 E

23 h 16 min

23 h 16 min without traffic

1,517 miles

This route has tolls.

I

Black Boxes

- Airbag Control Module
 - Airbag Control Unit
 - Event Data Recorder
 - AKA
 - Car Black Box

Black Boxes / EDR

- What data can Automobile Black Boxes collect?
- Seconds Vehicle Engine Percent Brake Switch
- Before Deployment Speed (mph) Speed (RPM) Throttle Circuit Status

● Seconds	Speed	RPM	Throttle	Brake
● -5	57	4032	100	OFF
● -4	65	4160	70	OFF
● -3	62	2304	2	ON
● -2	55	1088	2	ON
● -1	47	896	2	ON

Event Data (Event Record 1)

Event Recording Complete	Yes
Event Record Type	Deployment
Crash Record Locked	Yes
OnStar Deployment Status Data Sent	Yes
OnStar SDM Recorded Vehicle Velocity Change Data Sent	Yes
Deployment Event Counter	1
Event Counter	1
OnStar Notification Event Counter	1
Algorithm Active: Rear	No
Algorithm Active: Rollover	No
Algorithm Active: Side	Yes
Algorithm Active: Frontal	Yes
Ignition Cycles At Event	5080
Time Between Events (sec)	Data Not Available
Concurrent Event Flag Set	No
Event Severity Status: Rollover	No
Event Severity Status: Rear	No
Event Severity Status: Right Side	No
Event Severity Status: Left Side	No
Event Severity Status: Frontal Stage 2	Yes
Event Severity Status: Frontal Stage 1	Yes
Event Severity Status: Frontal Pretensioner	Yes
Driver 1st Stage Deployment Loop Commanded	Yes
Passenger 1st Stage Deployment Loop Commanded	Yes
Driver 2nd Stage Deployment Loop Commanded	Yes
Passenger 2nd Stage Deployment Loop Commanded	Yes
Driver Pretensioner Deployment Loop #1 Commanded	Yes

Infotainment Systems

- Infotainment Systems are collectable and have tremendous amounts of data stored in them.

Infotainment Systems

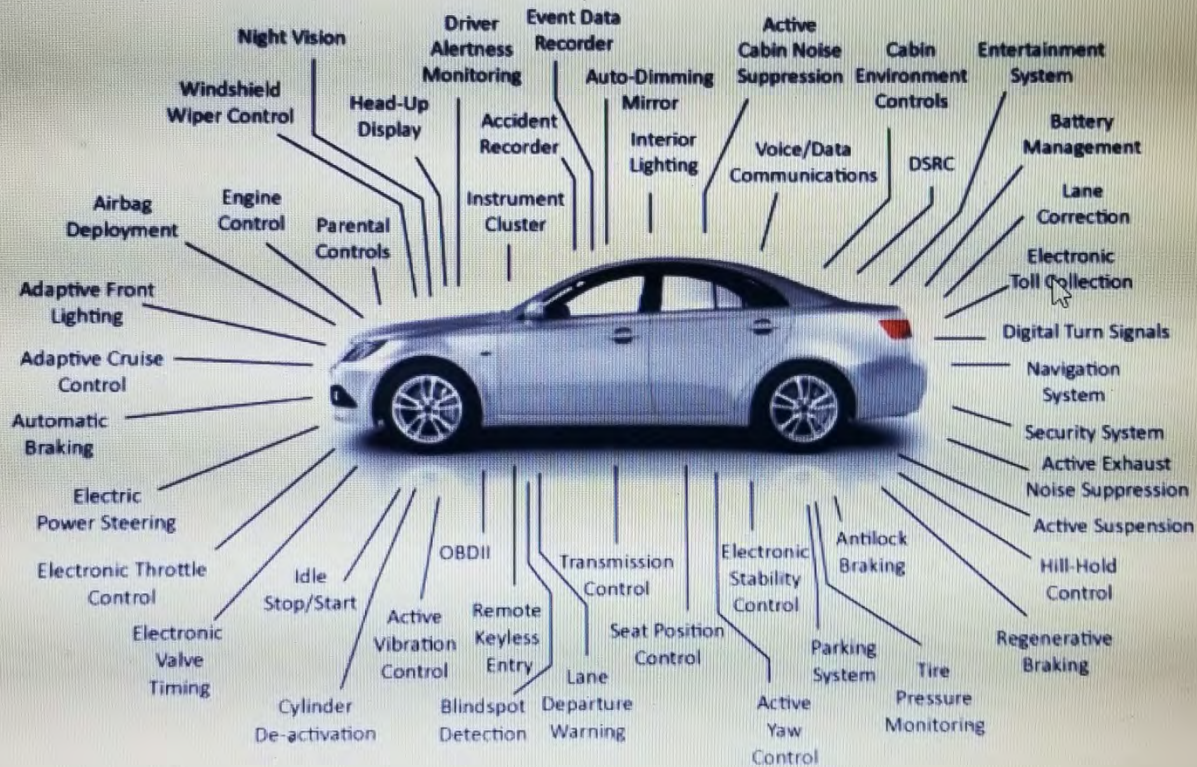
- Location / GPS
- Automated functions
 - Lane keeping
 - AEB – Automatic Emergency Braking
- Communications Data
 - SMS / Text Messages
 - Email
 - Call Logs

Infotainment Systems

- Radio
 - Station
 - Volume
 - Etc
- Lights
 - Interior
 - Exterior
- Parental and Valet Controls

Infotainment Systems

DATA SOURCES



Truck Black Boxes

- AKA:
 - Electronic Control Unit (ECU)
 - Engine Control Module (ECM)
 - Black Box

Truck Black Boxes

- Truck Black boxes have become increasingly sophisticated over time. Newer modern devices have a tremendous amount of memory.

Sample Truck Data

```
Top Gear - 1
  Time          6:38:00
  Percent       4.58 %
  Distance      368.2 mi
  Fuel          80.63 gal

Cruise
  Time          98:00:48
  Percent       67.68 %
  Distance      6301.5 mi
  Fuel          857.50 gal

Top Gear Cruise
  Time          94:54:36
  Percent       65.54 %
  Distance      6127.7 mi
  Fuel          815.75 gal

Speeding A(>=66 mph and <71 mph)
  Count         3215
  Time          14:39:41
  Percent       10.12 %

Speeding B(>=71 mph)
  Count         188
  Time          0:48:08
  Percent       0.55 %

Highest Speed      76.0 mph
  Occurred 10/13/10 22:32:30 (EST)

Coasting Time      0:00:00
Coasting Percent   0.00 %

Fan On Time
  Total Time      1:57:06
  Engine System   0:00:00
  Manual          0:00:00
  A/C            1:57:06
  DPF Fan Time    0:00:00

Engine Utilization 46.74 %
Vehicle Utilization 43.11 %

DPF Regeneration
  Parked Completed 0
  Driving Completed 2
  Parked Regen Fuel 0.00 gal
  Driving Regen Fuel 3.67 gal

Diesel Exhaust Fluid (DEF)
  Trip Fluid      29.26 gal
  Trip Percent    2.40 %
  Trip Economy    299.65 mpg

  Driving Fluid   29.02 gal
  Driving Economy 302.11 mpg

Optimized Idle Time
  Active          0:00:00
  Run             0:00:00
  Battery         0:00:00
  Engine Temp.   0:00:00
  Thermostat     0:00:00
  Extended Idle  0:00:00
  Continuous     0:00:00
```

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