Response, Emergency Staging, Communications, Uniform Management, and Evacuation – Demonstration Data, from Sykesville, MD

Identification Information

Citation

Citation Information

Originator: Battelle
Publication Date: 20141114
Title: Response, Emergency Staging, Communications, Uniform Management, and Evacuation – Demonstration Data
Edition: Version 1
Geospatial Data Presentation Form: Latitude and longitude

Publication Information

Publication Place: Columbus, OH
Publisher: Battelle for U.S. DOT
Online Linkage: https://www.its-rde.net/

Description

Abstract The files contained in this data environment were collected during the Response, Emergency Staging, Communications, Uniform Management, and Evacuation (R.E.S.C.U.M.E.) demonstration. R.E.S.C.U.M.E contains two prototype Connected Vehicle (CV) applications and a third non-prototype application developed under the U.S. Department of Transportation (U.S. DOT) Dynamic Mobility Applications (DMA) Program. The R.E.S.C.U.M.E. project incorporates prototype development and demonstration of Response Staging (RESP-STG) and Incident Zone (INC-ZONE) applications and a non-prototype, simulated EVAC application using integrated technologies that mutually support each other and comprise an integrated R.E.S.C.U.M.E. bundle that is a key research activity within the DMA program. The RESP-STG application provides situational awareness to and coordination among emergency responders—upon dispatch and while en-route— to establish incident scene work zones both upon initial arrival and staging of assets, and afterward, if circumstances require, additional dispatch and staging. It provides valuable input to responder and dispatcher decisions and actions. A range of data will be provided through mobile devices and other types of communication to help support emergency responder vehicle routing, staging, and secondary dispatch decision-making.
The INC-ZONE application improves protection of personnel at incident sites from the threat of oncoming vehicles, particularly where those vehicles are being operated outside of recommended speed, and lane guidance where there have been crashes, incidents, or other events impacting traffic such as stalled vehicles or vehicles pulled over for moving violations. The INC-ZONE application includes an in-vehicle messaging system that provides oncoming drivers with merging and speed guidance around an incident. The INC-ZONE application also provides in-vehicle alerts and warnings to drivers in violation of speed and lane closure restrictions, both for the protection of the drivers and incident zone personnel. Finally, the INC-ZONE application includes a warning system for on-scene workers when a vehicle approaching or in the incident zone is being operated outside of safe parameters for the conditions.

Purpose: This data environment contains the data collected during the test and demonstration of the R.E.S.C.U.M.E project for U.S. DOT

Time Period of Content

Time Period Information

Range of Dates:
Beginning Date: 20141111
Ending Date: 20141113

Currentness Reference:
Ground condition (i.e., the previous dates refer to the time the information was collected)

Status

Progress: Complete
Maintenance and Update Frequency: None planned

Spatial Domain

Bounding Coordinates
West Bounding Coordinate:-76.96 °
East Bounding Coordinate:-76.94°
North Bounding Coordinate: 39.38°
South Bounding Coordinate: 39.37°

Keywords

Theme
Theme Keyword: Connected Vehicle
Theme Keyword: CV
Theme Keyword: Dynamic Mobility Applications
Theme Keyword: DMA
Theme Keyword: Incident Zone
Theme Keyword: INC-ZONE
Theme Keyword: Response Staging
Theme Keyword: RESP-STG

Place
Place Keyword: Sykesville, MD.

Temporal
Temporal Keyword: November 13, 2014

Access Constraints:

To access the data set, users must register through the USDOT Research Data Exchange (RDE) portal (https://www.its-rde.net/). The registration process will include a request for contact information and agreement to terms of use for the data What information is optional versus mandatory for registration has not been finalized ; however in order to encourage broad access and use, mandatory information will be kept to a minimum and ease of use maximized. See the RDE Terms of Use and Data Privacy Policy on how registration information is kept secure and for uses only applicable to the RDE administration.

User Constraints:

Those who use data and data processing tools distributed by the Research Data Exchange have the following responsibilities:

1. Where the contributed materials have been utilized to any extent to enable, verify, supplement or validate performance measurement, analysis, research or software development, to fully reference the Research Data Exchange Program and the contributions of the individuals in all subsequent and related publications or public events, specifically:
    a. In publications, reference the Research Data Exchange website and the date accessed, data and/or data processing tools (by name and version number), and the individual contributors identified on the reference template associated with each data and/or data processing tool.
    b. In presentations or other oral communication, by noting the data and/or data processing tool by name and version number, and communicating the address of the Research Data Exchange website.
2. Users are encouraged to accurately post and update within the Research Data Exchange website a description of the project utilizing the data and/or the data processing tools, including:
    a. A description of the project, including a brief statement of the project goals.
    b. A summary of the hypotheses and findings (when available) of the project.
    c. Individuals directing and/or substantively participating in the project.
    d. The name and version number of the data and/or data processing tools downloaded and utilized in the project.
    e. The current state of the project (upcoming, underway, completed).
    f. References to published materials (if any).
3. Users are encouraged to report anomalies, errors or other questionable data elements using the Data Forum of the Research Data Exchange website, referencing the specific data or data processing tool by name and version number.
4. To refrain from duplication and dissemination of the data and data processing tools to third parties.

Publication of certain derived information such as location of residence, specific stores visited, purpose of trips, etc. must be cleared with the data set originator prior to publication.

Point of Contact

Contact Information

Contact Organization Primary
Contact Organization: Battelle
Contact Person: William Gibbs
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National Highway Traffic Safety Administration (NHTSA) Security Information

Security Classification: Unclassified

Native Data Set Environment:

Documentation: The R.E.S.C.U.M.E. dataset packet capture (pcap) files were captured using a 3M packet sniffer connected to a laptop. The laptop was running the 3M packet sniffer application and logging the Dedicated Short Range Communications (DSRC) Basic Safety Message (BSM) traffic to the pcap files. This setup was done for both the pre demonstration testing that occurred on November 11, 2014 and the demonstration to U.S. DOT on November 13, 2014.

Cross Reference:

None currently

Citation Information

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Data Quality Information

Attribute Accuracy: No accuracy assessment has been performed for the data set. However a number of the data collection devices were tested for conformance to the requirements given in "SYSTEM REQUIREMENT DESCRIPTION 5.9GHz DSRC Vehicle Awareness Device Specification", "SYSTEM REQUIREMENT DESCRIPTION 5.9GHz DSRC Roadside Equipment Device Specification" and "SYSTEM REQUIREMENT DESCRIPTION 5.9GHz DSRC Aftermarket Safety Device Specification".

Completeness Report: The USDOT does not make any claims regarding data completeness. There may be gaps in the data provided.

Lineage

Source Information

Source Citation

Citation Information

Originator: All data were collected and provided by Battelle for U.S. DOT
Publication Date: 2014

Process Step

Process Description: The data contained in this data set was recorded and stored in pcap format. The pcap data is what was given to U.S. DOT and uploaded to RDE.

Process Contact:

Contact Information

Contact Organization Primary

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Contact Person: William Gibbs
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Entity and Attribute Information

Log files were captured in two places during the demonstration. A laptop that ran the User Interface for the responders (Police, Fire, Paramedics or DOT vehicles) captured the pertinent event data and communications with the DSRC radio. An Android phone was used in the oncoming vehicles (civilian vehicles equipped with DSRC communication equipment) also captured the pertinent event data and communications with the DSRC radio. In addition the phone captured GPS position of the vehicle.

Detailed Description for Laptop Logs Data set

Laptop Logs are text files containing chronologically ordered records of every communication and data input/output activity conducted on the laptops carried by the responders in their vehicles.

Communication Activity

Every communication activity record begins with a time-stamp up to the granularity of seconds followed by an activity description or an exchanged message packet.

The time-stamp includes date in dd-mm-yyyy format followed by local time (EST) in hh:mm:ss format. The null field is not utilized in these logs and can be disregarded. The remainder of the record includes description of the communication activity or event.

When the Laptop application is set active there is a sequence of messages that show the Laptop connecting to the different devices in the system. When the Laptop makes a successful connection to the device it is represented in the log.

```
13-11-2014 08:34:46 [(null)] - Request Status Change DSRC Connecting
13-11-2014 08:34:46 [(null)] - AlertsForm RequestStatusChange - Connecting
13-11-2014 08:34:46 [(null)] - Connecting to VITAL port:COM7
13-11-2014 08:34:50 [(null)] - Bluetooth Connecting to Peer
13-11-2014 08:34:52 [(null)] - Request Status Change DSRC Connected
13-11-2014 08:34:52 [(null)] - AlertsForm RequestStatusChange - Connected
13-11-2014 08:34:52 [(null)] - Bluetooth Connected to Peer
13-11-2014 08:34:53 [(null)] - 11/13/2014 8:34:53 AM - True
13-11-2014 08:34:53 [(null)] - Generating alarm Frequency:220 Duration:500
13-11-2014 08:34:53 [(null)] - Request Status Change CAP_WIN Connecting
13-11-2014 08:34:53 [(null)] - AlertsForm RequestStatusChange - Connecting
13-11-2014 08:34:53 [(null)] - Request Status Change CAP_WIN_MOBILE Connecting
13-11-2014 08:34:53 [(null)] - AlertsForm RequestStatusChange - Connecting
13-11-2014 08:34:53 [(null)] - Request Status Change DGPS Connecting
13-11-2014 08:34:53 [(null)] - AlertsForm RequestStatusChange - Connecting
13-11-2014 08:34:53 [(null)] - MainForm Status Changed
13-11-2014 08:34:53 [(null)] - AlertsForm Status Changed
13-11-2014 08:34:53 [(null)] - Request Status Change CAP_WIN Connected
13-11-2014 08:34:53 [(null)] - AlertsForm RequestStatusChange - Connected
13-11-2014 08:34:53 [(null)] - In CapWINIncidents
13-11-2014 08:34:53 [(null)] - Request Status Change VITAL Connected
13-11-2014 08:34:53 [(null)] - AlertsForm RequestStatusChange - Connected
```

When the Laptop application is set inactive there is a series of messages that indicate the actions taken and the devices that are disconnected.

```
13-11-2014 08:32:07 [(null)] - Sending Stop EVA
13-11-2014 08:32:07 [(null)] - Sending Stop TIM
13-11-2014 08:32:08 [(null)] - Continuing Stop IncZone
13-11-2014 08:32:08 [(null)] - Request Status Change CAP_WIN_MOBILE Disconnected
13-11-2014 08:32:08 [(null)] - AlertsForm RequestStatusChange - Disconnected
13-11-2014 08:32:08 [(null)] - _stopIncZone RequestButtonStatusChange
13-11-2014 08:32:08 [(null)] - MainForm Status Changed
13-11-2014 08:32:08 [(null)] - AlertsForm Status Changed
13-11-2014 08:32:09 [(null)] - 11/13/2014 8:32:09 AM - True
13-11-2014 08:32:09 [(null)] - Generating alarm Frequency:220 Duration:500
13-11-2014 08:32:09 [(null)] - Request Status Change CAP_WIN Disconnected
13-11-2014 08:32:09 [(null)] - AlertsForm RequestStatusChange - Disconnected
13-11-2014 08:32:09 [(null)] - Request Status Change CAP_WIN_MOBILE Disconnected
13-11-2014 08:32:09 [(null)] - AlertsForm RequestStatusChange - Disconnected
13-11-2014 08:32:09 [(null)] - Request Status Change DGPS Disconnected
13-11-2014 08:32:09 [(null)] - AlertsForm RequestStatusChange - Disconnected
13-11-2014 08:32:09 [(null)] - Request Status Change DSRC Disconnected
13-11-2014 08:32:09 [(null)] - AlertsForm RequestStatusChange - Disconnected
13-11-2014 08:32:09 [(null)] - Request Status Change VITAL Disconnected
13-11-2014 08:32:09 [(null)] - AlertsForm RequestStatusChange - Disconnected
13-11-2014 08:32:09 [(null)] - Generating alarm Frequency:220 Duration:500
13-11-2014 08:32:10 [(null)] - ct.IsCancellationRequested:False loop:False
```

The following sequence of messages in the logs show the Laptop communicating to CapWIN and retrieving a list of incidents from the server. The list of incidents is printed out as Latitude and Longitude and the distance to the incident is also printed. If the incident is within the distance threshold of the responder the Found Incident is logged with the name of the incident. At this point the Laptop reads the information from the incident including restricted lanes and speed limit and creates a Traveler Information Messages (TIM) that is transmitted via the DSRC radio.

```
13-11-2014 08:42:34 [(null)] - In GetCapWINIncidents
13-11-2014 08:42:34 [(null)] - Longitude: -76.79752349853516 Latitude: 39.40311481269305
Distance: 12998.9450465115
13-11-2014 08:42:34 [(null)] - Longitude: -76.94469094276428 Latitude: 39.37589082878848
Distance: 4.90979534231172
13-11-2014 08:42:34 [(null)] - Found Incident: Sykesville Demonstration [Fire/EMS, LE]
```

There are other messages that are periodically logged that indicate events from the Laptop. Example logs listed below. Generating alarm refers to an audible warning from the Laptop to the responder. The Activating VITAL message indicates that the vehicle horn and lights have been activated and conversly deactivated. These alarms are based on the threat level in the THREAT message described below.

13-11-2014 08:38:34 [(null)] - Generating alarm Frequency:2000 Duration:150
13-11-2014 08:38:34 [(null)] - Activating Vital
13-11-2014 08:38:38 [(null)] - Deactivating Vital

Message Packet

Message Packets are logged communication packets from the DSRC radio to the Laptop. The messages are formatted in Java Script Object Notation (JSON). The data for the message packages begin with "[{" and end with "}]". There are two types of messages that are sent from the DSRC radio to the Laptop. The first is a Global Positioning System (GPS) message. This message contains a standard GPS National Marine Electronics Association (NMEA) fix information (GGA) message. This message is used by the Laptop for position information and is also sent to the CapWIN server for responder position information. The second message is a threat level count of oncoming vehicles. There are four threat levels 0-3 and the number of vehicles in each level is sent in the message. The Laptop uses this message to display the current threats and to trigger any audible and visual alarms to the first responder.

13-11-2014 08:32:02 [(null)] -
[{"typeid":"NMEA","gga":"$GPGGA,133200.60,3922.54035,N,07656.69580,W,2,12,1.13,161.1,M,-34.5,M,,0138*67"}]
13-11-2014 08:57:49 [(null)] -
[{"typeid":"THREAT","tlevel0count":0,"tlevel1count":0,"tlevel2count":1,"tlevel3count":0}]

Input/Output Messages

The laptop log files also contain input/output messages describing the success or failure of the input/output activities conducted by the laptops. These messages are generated by the .NET environment for the developer to debug issues with the application or connection. These messages do not always indicate an issue with the application because they will be generated if the application cannot connect to a device that is not turned on. Following is an example of such a message:

System.ObjectDisposedException: Cannot access a disposed object.
Object name: 'System.Net.Sockets.NetworkStream'.
   at System.Net.Sockets.NetworkStream.BeginWrite(Byte[] buffer, Int32 offset, Int32 size,
AsyncCallback callback, Object state)
   at System.IO.Stream.<BeginEndWriteAsync>b__16(Stream stream, ReadWriteParameters args,
AsyncCallback callback, Object state)
   at System.Threading.Tasks.TaskFactory`1.FromAsyncTrim[TInstance,TArgs](TInstance thisRef,
TArgs args, Func`5 beginMethod, Func`3 endMethod)
   at System.IO.Stream.BeginEndWriteAsync(Byte[] buffer, Int32 offset, Int32 count)
   at System.IO.Stream.WriteAsync(Byte[] buffer, Int32 offset, Int32 count, CancellationToken
cancellationToken)
   at System.IO.Stream.WriteAsync(Byte[] buffer, Int32 offset, Int32 count)

Detailed Description for Phone Logs Data Environment

Phone Log files are output data files from each of the four smartphone devices used during the demonstration (*Samsung S3 Dev 1*, *Samsung S3 Dev 2*, *Samsung S4 Dev 1* and *Samsung S4 Dev 3)*. For each smartphone, there are four types of Phone Log files created each time the phone application is started: 1) Communication Log, 2) GPS History Log, 3) Alerts Log, 4) Keyhole Markup Language (KML) File. Phone Log file names begin with the device they came from.

Communication Log

The **Communication Log** files are titled only with a time-stamp header such as "2014-11-13_03-46-53-0641.txt" The records in these files are somewhat similar to the communication activity records from the Laptop Logs. The Communication Log file contain time-stamped descriptors of every communication activity conducted by the smartphones. The records log the messages exchanged over specific channels (e.g. Bluetooth, radio, etc.). along with status messages describing updates to various services being run on the smartphone, such as VehicleDiagnosticService, ObuBluetoothService, ApplicationMonitorService, etc. Each message begins with a character defining the type of message. There are five levels of logging v (Verbose), d (Debug), i (Informational), w (Warning) and e (Error). These levels are set in the source code. A time stamp is next followed by the message.

An example of a status message lines:

```
d       2014-11-11_10-43-50-0242        EasyBluetoothSocket|00:26:AD:05:0A:21  openSocket():
Connecting...
v       2014-11-11_10-43-50-0280        ObuBlutoothService        updateState() Connecting
v       2014-11-11_10-43-50-0281        EasyBluetoothSocket|00:26:AD:05:0A:21  updateState():
Connecting
e       2014-11-11_10-43-50-0853        EasyBluetoothSocket|00:26:AD:05:0A:27  openSocket(): Error
connecting to  bluetooth socket: read failed, socket might closed or timeout, read ret: -1
d       2014-11-11_10-43-50-0858        EasyBluetoothSocket|00:26:AD:05:0A:27  closeSocket() closing
socket
i       2014-11-11_10-43-52-0863        EasyBluetoothSocket|00:26:AD:05:0A:27  releaseResources()
Killing handler thread.
i       2014-11-11_10-43-53-0369        EasyBluetoothSocket|00:26:AD:05:0A:21  openSocket():
Connection Established
v       2014-11-11_10-43-53-0374        ObuBlutoothService        updateState() Connected
v       2014-11-11_10-43-53-0376        EasyBluetoothSocket|00:26:AD:05:0A:21  updateState():
Connected
v       2014-11-11_10-43-53-0389        ApplicationMonitorService         newNotification() Displayed a
new notification: Established Connection to DSRC Radio with flags: 16
i       2014-11-11_10-43-53-0392        NTripService      onCreate()
i       2014-11-11_10-43-53-0395        NTripService
        prefChangedListener.onSharedPreferenceChanged: Setting changed (setting_ntripEnabled_key).
i       2014-11-11_10-43-53-0396        NTripService
        prefChangedListener.onSharedPreferenceChanged: Setting changed (setting_ntripEndpoint_key).
i       2014-11-11_10-43-53-0397        NTripService
        prefChangedListener.onSharedPreferenceChanged: Setting changed
(setting_ntripEndpointPort_key).
i       2014-11-11_10-43-53-0398        NTripService
        prefChangedListener.onSharedPreferenceChanged: Setting changed
(setting_ntripUserName_key).
i       2014-11-11_10-43-53-0399        NTripService
        prefChangedListener.onSharedPreferenceChanged: Setting changed
(setting_ntripPassword_key).
d       2014-11-11_10-43-53-0400        EasyBluetoothSocket|00:26:AD:05:0A:21  openSocket():
Connecting...
```

Message Packets are logged communication packets from the DSRC radio to the Android Phone. The messages are formatted in Java Script Object Notation (JSON). The data for the message packages begin with "{" and end with "}". There are three types of messages that are sent from the DSRC radio to the Phone. The first is a Global Positioning System (GPS) message. This message contains a standard GPS National Marine Electronics Association (NMEA) fix information (GGA) message. This message is used by the Phone for position. The second message is an alert message that defines the current state of alerts. The contents of this message is defined in the Alerts Log section. The third type of message is the Diagnostic Information message that is displayed on a diagnostic page on the phone so the user can see the state of the system. The contents are described after the example messages.

An example of such a message block is as follows:

v   2014-11-11_10-43-55-0052   EasyBluetoothSocket|00:26:AD:05:0A:21 Received 102 bytes:
{"typeid":"NMEA","gga":"$GPGGA,154354.80,3922.54168,N,07656.68413,W,1,11,0.95,160.3,M,-
34.5,M,,*6D"}
i   2014-11-11_11-59-14-0291   ObuBluetoothService   receiveListener.onDataReceived():
Recieved data:
{"typeid":"ALRT","speedthreatlevel":0,"speedsigntype":0,"speed":45,"lanechangethreatlevel":1,"lanechang
esigntype":2,"lanecount":1,"isonleft":false}
v   2014-11-11_10-43-53-0710   EasyBluetoothSocket|00:26:AD:05:0A:21 Received 296 bytes:
{"typeid":"DIA","gpsfix":1,"heading":0,"speed":0.002500,"latitude":39.375695,"longitude":-
76.944736,"vdop":0,"hdop":0.950000,"satinuse":0,"vehicleid":"0x57cd95ec","vehicleidlock":0,"evacount":1,"
activetimid":"0x418b01e109a8587a","version":"1.0.0","versiondate":"20141106","versionrepo":"4850M"}

Attribute

Attribute Label: typeid
Attribute Definition: This field contains the type of the message. NMEA for GPS message, ALRT for an alert message or DIA for a Diagnostic Information message.
Attribute Domain Values: String

Attribute

Attribute Label: gpsfix
Attribute Definition: Indicates the DSRC GPS has a fix
Attribute Domain Values: Boolean

Attribute

Attribute Label: heading
Attribute Definition: This field contains the heading of the vehicle the phone is in.
Attribute Domain Values: Degrees

Attribute

Attribute Label: speed
Attribute Definition: This field contains the speed of the vehicle the phone is in.
Attribute Domain Values: MPH

Attribute

Attribute Label: latitude
Attribute Definition: This field contains the latitudinal position of the phone.
Attribute Domain Values: Degrees

Attribute

Attribute Label: longitude
Attribute Definition: This field contains the longitudinal position of the phone.
Attribute Domain Values: Degrees

Attribute

Attribute Label: vdop
Attribute Definition: GPS vertical dilution of precision
Attribute Domain Values: Degrees

Attribute

Attribute Label: hdop
Attribute Definition: GPS horizontal dilution of precision
Attribute Domain Values: Degrees

Attribute

Attribute Label: satinuse
Attribute Definition: Number of satellites in use

Attribute Domain Values: Integer

Attribute

Attribute Label: vehicleid
Attribute Definition: Current id of vehicle in BSM messages
Attribute Domain Values: Hexidecimal

Attribute

Attribute Label: vehicleidlock
Attribute Definition: When the vehicle is receiving an EVA, the vehicle id is locked. This indicates if the vehicle id is currently locked
Attribute Domain Values: Boolean

Attribute

Attribute Label: evacount
Attribute Definition: Number of vehicle transmitting a EVA message
Attribute Domain Values: Integer

Attribute

Attribute Label: vehicleidlock
Attribute Definition: When the vehicle is receiving an EVA, the vehicle id is locked. This indicates if the vehicle id is currently locked
Attribute Domain Values: Boolean

Attribute

Attribute Label: activetimid
Attribute Definition: Id of any active TIM message
Attribute Domain Values: Integer

Attribute

Attribute Label: version
Attribute Definition: Version of the DSRC code
Attribute Domain Values: Integer

Attribute

Attribute Label: versiondate
Attribute Definition: Version date of the DSRC code
Attribute Domain Values: Date

Attribute

Attribute Label: versionrepo
Attribute Definition: Repository version of the DSRC code
Attribute Domain Values: Integer

GPS History Log

GPS History Log is a simple log of time-stamped GPS locations of the smartphone. The name of the file contains time stamped information indicating the start time of the log followed by gps-history. In the demonstration data, this log tracked the movement of the vehicles carrying the phones. An example of the record in GPS History Log file is as follows:

Timestamp	Latitude	Longitude	X1	X2
1.441	39.374009	-76.942778	0.0	0.004116

Attribute

Attribute Label: Timestamp
Attribute Definition: This field contains time in seconds since beginning of the particular GPS History Log file

Attribute Domain Values: Seconds

Attribute

Attribute Label: Latitude
Attribute Definition: This field contains the latitudinal position of the phone.
Attribute Domain Values: Degrees

Attribute

Attribute Label: Longitude
Attribute Definition: This field contains the longitudinal position of the phone.
Attribute Domain Values: Degrees

Attribute

Attribute Label: X1 (Heading)
Attribute Definition: This field contains the heading of the vehicle the phone is in.
Attribute Domain Values: Degrees

Attribute

Attribute Label: X2 (Speed)
Attribute Definition: This field contains the speed of the vehicle the phone is in.
Attribute Domain Values: MPH

Alerts Log

The **Alerts Log** file keeps a time-stamped record of the alerts generated on the phone. The filename follows the same format as the previous phone log files with the phone identifier, timestamp and an additional _alerts suffix. The file contains eight fields separated by a tab. A sample record from the Alert file looks like follows:

Timestamp	Lane Change Threat Level	Speed Threat Level	Lane Change Sign Type	Speed Sign Type	Reduced Speed Limit	Incident Is On Left	Lane Count
2014-11-13T07:57:23.524-05:00	1	0	2	0	45	false	0

Attribute

Attribute Label: Timestamp
Attribute Definition: This field contains the GMT time in ISO 8601 combined date and time format. It records the time when the specific alert was generated.
Attribute Domain Values: DateTime

Attribute

Attribute Label: Lane Change Threat Level
Attribute Definition: This data element logs the threat of a lane change maneuver.
Attribute Domain Values: Integer

Attribute

Attribute Label: Speed Threat Level
Attribute Definition: This data element logs the threat of unsafe vehicle speed.
Attribute Domain Values: Integer

Attribute

Attribute Label: Speed Sign Type
Attribute Definition: This data element denotes the speed sign type.
Attribute Domain Values: Integer

Attribute

Attribute Label: Reduced Speed Limit
Attribute Definition: This data element provides speed limit guidance in effect in the vicinity of the vehicle.
Attribute Domain Values: Integer

Attribute

Attribute Label: Incident Is On Left
Attribute Definition: This data element indicates if the incident has occurred on the left side.
Attribute Domain Values: Boolean

Attribute

Attribute Label: Lane Count
Attribute Definition: This data element records the affected lane count.
Attribute Domain Values: Integer

Detailed Description for Map Data set

The KML files are map files that trace the movement of the smartphone during the demonstration on a map. These are Phone Log files are created programmatically which can be opened using Google Earth or similar other packages. The KML reference documents can be found at the following website: https://developers.google.com/kml/documentation/kmlreference

Distribution Information

Distributor

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Metadata Reference Information

Metadata Date: 20160414
Metadata Review Date: 20160414
Metadata Future Review Date: not scheduled

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