FMCSA Data Repository

TRB Truck and Bus Safety Mid-Year Meeting September 14, 2017

Rebecca Hammond Virginia Tech Transportation Institute Center for Truck and Bus Safety





Project Overview

- Develop, maintain, and operate a data repository.
 - Include public-use datasets and complete raw study data.
- Develop web infrastructure for data access.
- Develop data access and management that includes oversight, support, and tracking.
- ☐ Provide ongoing support.





User Website

Query Data FAQs

Dataverse

Contact Us

Rebecca Hammond +



What's Available on This Website

Driver Descriptions and Assessments

Summary graphs and detailed records of driver assessments are provided addressing driver demographic information.

Summary of Data Collected

Graphs and detailed records describe data collection progress and characteristics of trips collected during the studies.

Vehicle Descriptions

Summary graphs and detailed records describe the types of vehicles involved in the studies.

Custom Query Capability

Build custom gueries to search for records matching criteria that span multiple datasets.

Public Use Datasets

Deidentified public use datasets available for download.

Study Background Information

Access an overview of the FMCSA Research Data Repository and data collection procedures

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What's New

05/01/2017 - Commercial Motor Vehicle Driver Restart Study Data added



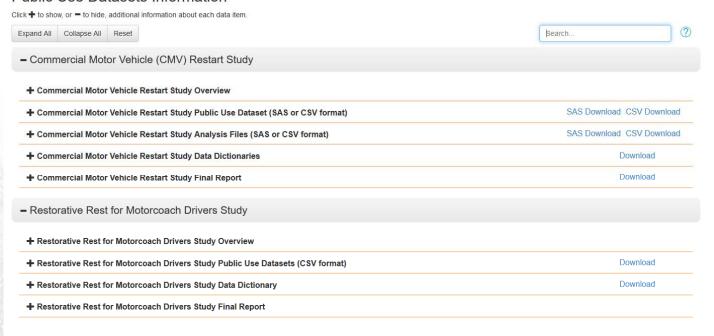






Public Use Datasets

Public Use Datasets Information



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Query Builder

Vehicles

- Vehicle types (car, truck, van, etc.)
- · Vehicle ages and condition
- · Amount of data collected per vehicle
- · Quantities of vehicles installed
- · Vehicle technologies and equipment

View.

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Query Builder



- · Submit query, assess results
- · Build cross tabulations
- · View graphs of output
- · View table of individual records

View..

Trips

- · Summary measures describing trips
- . Trip length, duration, start time, stop time
- Min, max, mean for speed, acceleration
- . Trip summary record table
- · Trip density maps

View..

Events



- · Crashes, near crash, and baseline event
- . Events by type and severity
- · Event viewer

Drivers



- · Numbers of participating drivers
- · Amount of data collected per driver
- · Driver demographics and driving history
- · Driver physical and psychological state
- · Driver participation experience

View.



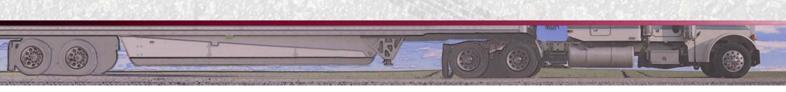
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Access Control

- Security Levels vary for Levels 1, 2, 3
- □Login Account
 - Basic login email address required only, no proof of IRB training; grants access to Level 1 (de-identified data).
 - Qualified Researcher login proof of IRB training required; grants access to Level 2 and Level 3.
- □ Data Use License Specifies which datasets a researcher has access to, the period of time over which the data can be used, and requirements for protecting PII. A data-use license will not be required for access to Level 1 datasets, but will be required for access to Level 2 and Level 3 data.





Data Access – Level 1: Open Access

- Provide de-identified, public-use datasets developed at the end of each study.
- □ Data may include reduced event and baseline characteristics, subsets of kinematic data from vehicles, Actigraph data, psychomotor vigilance task (PVT) data, and questionnaire data without PII.
- ☐ Users required to obtain basic login (no proof of IRB training required).
- ■VTTI will track all download activity from the website.





Data Access – Level 2: Identifiable Data with Secured Access

- □ Provide raw data for each study, except those data that require access from a secure data enclave.
- □ Users will be able to query data on the website within a single dataset, or across multiple datasets. Results of data will be displayed on the website, but not available for download. Users must request desired dataset from VTTI for research use.
 - PII will not be displayed via the website. Certain PII (e.g., GPS coordinates) may be requested under certain conditions.
- □ Users required to obtain FMCSA approval and qualified researcher login (requires proof of IRB training).
- ☐ Funding may be required depending on data request.
- □VTTI will track all data requests and exports.





Data Access – Level 3: Identifiable Data Requiring Enclave Support

- Provide access to identifiable data that can only be accessed in a secure data enclave.
 - Video, GPS coordinates, date/time of SCE.
- □ Data not permitted to leave secure enclave at any time.
- □ Users required to obtain FMCSA approval and qualified researcher login (requires proof of IRB training).
- ☐ Funding required to cover cost of supporting the enclave visit and providing any de-identified data after the visit.
- ■VTTI will track all data requests and exports.





IRB and Data Tracking Considerations

- ■VTTI will complete an IRB and tracking assessment for each dataset to be included in the repository.
 - Did the participants agree that data could be used for additional research and by researchers not part of the original study team?
 - When must the study data be deleted? Are there differences in deletion times for PII and non-PII data?
 - What types of PII data were collected?
 - Given the study context, what types of other public-use datasets are available that might allow for re-identification if combined with the study data?
- VTTI will apply its existing data-use license and data tracking processes.





Commercial Vehicle Datasets – Completed or Ongoing

Set	Dataset Title	Collection Dates	Trucks	Busses	Operation Type	Drivers	Miles	Data Collection System	Status/ Reference
1	Drowsy Driver Warning System Field Operational Test (FOT)	05/04 – 09/05	46	0	Line/Long Haul	103	2,300,000	100-Car	See Hanowski et al.
2	Naturalistic Truck Driving Study	11/05 – 05/07	9	0	Line/Long Haul	100	735,000	100-Car	See Blanco et al.
3	Heavy Vehicle Camera/Video Imaging System FOT	07/09 - 09/10	6	0	Long Haul	12	275,000	100-Car	See Fitch et al.
4	Advance System Testing Utilizing a Data Acquisition System on the Highways (FAST DASH) 1	09/11 - 08/12	19	0	Long Haul	21	1,335,000	NextGen	See Schaudt et al.
5	Winter Maintenance	01/13 - 04/13	2	0	Snowplow	4	Not available	NextGen	See Camden et al.
6	FAST DASH 2	09/13 - 08/14	17	0	Long Haul	27	1,450,000	NextGen	See Krum et al.
7	Onboard Monitoring System (OBMS): Motorcoach	05/13 - 07/15	0	44	Motor Coach	73	1,142,000	NextGen	Data reduction in progress
7a	Onboard Monitoring System (OBMS): Truck	02/12 - 03/13	206	0	Line/Long Haul	167	2,516,000	NextGen	Data reduction in progress
8	Crash Avoidance System (CAS) FOT	11/13 - 06/15	150	0	Line/Long Haul	180	3,245,000	MiniDAS	See Grove et al.
9	Canadian Truck Study	12/14 - 01/16	26	0	Long Haul	26	800,000 (est)	NextGen	Data collection complete, no reduction
10	Oil & Gas Operations	07/14 - 10/14	4	0	Maintenance/Service (Medium-Duty Pickup)	4	45,000	MiniDAS	Data collection and reduction complete





Questions?

rhammond@vtti.vt.edu



