

SHRP 2 Safety Data, Update 11

This is number eleven in a series of updates about Phase 1 of the implementation of the SHRP 2 Safety Data by TRB in collaboration with its partners, Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO), and the National Highway Traffic Safety Administration (NHTSA). As was noted in the first of these updates, “Phase 1” is governed by a Safety Data Oversight Committee (SDOC). “Phase 1” is an experimental program designed to make the safety data as widely available as possible to researchers and to gather information needed to lay the foundation for use of the data beyond the first four to five years. This edition of the update provides an update on how the SHRP 2 safety data are being used by researchers to address highway safety and, as it turns out, other transportation issues.

InDepth Data Use Licenses

InDepth is the category of use of the SHRP 2 naturalistic driving data in which a dataset is custom-built for a specific research purpose. InDepth projects require the submission and approval of a Data Use License (DUL) by a qualified research team in order to make sure that the privacy and confidentiality of the SHRP 2 NDS volunteer participants is protected and that other provisions of the research protocol are followed.

As of September 30, 2015, there were 10 completed, 73 active, and 7 pending InDepth DULs for SHRP 2 naturalistic driving data. (These figures include projects initiated using the old format Data Sharing Agreements, or DSAs.) Most of the 10 completed projects were associated with pilot tests of the safety data completed during 2014 while the final databases were still being assembled. There are approximately 6 new InDepth data use license requests being submitted each month. As was expected, the pace of new DUL requests has stabilized and the number of pending requests has shrunk now that the initial backlog of research projects has been processed and has moved into their active phase.

As indicated in a previous Safety Data Update, most InDepth customers are organizations located in North America and in Europe. Types of organizations that have been or will be data users include universities, private consulting firms, automotive original equipment manufacturers (OEMs), state DOTs, national laboratories, Federal agencies including FHWA and NHTSA, public health organizations, non-profit research institutions, and the automobile insurance industry.

Research topics for the Pending Data Use Licenses continue to indicate the diversity of possible uses of the NDS data, including some interesting uses for non-safety related topics. Pending DUL topics include:

- Benefits of autonomous driving systems
- Driver swerving behavior to avoid conflicts
- Machine learning to identify driver impairment
- Anger and aggressive driving

- Vehicle fuel economy and operating costs
- Use of the SHRP 2 data to calibrate traffic simulation models

InSight Web Portal Usage

InSight is the public face of the SHRP 2 Safety Data. This web portal allows researchers to view and query selected data that are not potentially personally-identifying in terms of naturalistic driving data collection participants. About 1300 users have registered to use the InSight web portal to date. As might be expected, the pace of new InSight users being added has begun to stabilize after a big rush of new registrations and users at the beginning of the Safety Data implementation phase. There are around 30 new Qualified Researchers being approved each month. Qualified Researcher is the class of users which has demonstrated they have obtained human research subjects training; these users are given the broadest access to the web portal.

At present, there are 30 to 40 unique users on the InSight web site each day. There are around 2000 to 4000 page views on a typical weekday, which indicates that those users are making very intensive use of InSight. Intensity of use has increased greatly since Event Viewer functionality was restored in August, 2015. This functionality (which allows Qualified Researchers to view visualization of some time series data as well as forward video outside the vehicles) was suspended for a few months due several attempts by users to “scrape” and capture data. This sort of data capture is a violation of the InSight terms of use.

The great majority of registered InSight users—about 80 percent as of May 2015—are still from United States Internet domains. This may reflect the fact that all the data viewable via the web portal were collected at six sites in around the US. However, there is also a considerable international contingent of InSight users. Around 10 percent of all users are from European countries. The remaining 10 percent of users are from the rest of the world, with the lion’s share coming from China, Canada, Japan, and Australia.

Over half of the current InSight users come from academia—university faculty, staff, and graduate and undergraduate students. Another twenty percent are staff from Federal, state or local governments. Other significant groups of InSight users are from Internet domains associated with non-profit organizations, motor vehicle and subsystem manufacturers, and automobile insurance companies.

The InSight web portal may be found at the following URL:

<https://insight.shrp2nds.us/>

Roadway Information Data Usage

As of September 30, about 22 terms of use agreements for the Roadway Information Database (RID) were in place and four more were pending. The RID is a geospatial database that contains a large number of data attributes for roadways in the six SHRP 2 safety data collection sites. The RID is linkable to the NDS data; this allows researchers to address many issues, including the effect of various roadway geometric features on safety. As with the NDS data, the RID is being used to address a host of important research issues, including speeding, congestion related to incidents, intersection designs, and roadway departure.

General background on the RID may be found at:

<http://www.ctre.iastate.edu/shrp2-rid/>

Journal Articles of Note

The first scholarly journal articles reporting on use of the SHRP 2 safety data are beginning to appear. A notable example is the Journal of Safety Research, Volume 54 published in September 2015. This is a special edition dedicated to the topics of the safety data and the Fourth International Symposium on Naturalistic Driving Research which was held in Blacksburg, Virginia during August of 2014.

One feature of the special edition is articles detailing the results from two of the SHRP 2 S08 series of projects, which were pilot tests of the SHRP 2 data made prior to dataset completion. The research problem statements involved roadway departures on rural two lane roadways (research team led by Iowa State University) and the safety impact of offset left turn lanes (research team led by MRI Global).