



SOUTHWEST RESEARCH INSTITUTE



# Connected Vehicle Test Tools and Services

Southwest Research Institute® (SwRI®) has over 10 years of experience developing, deploying, and testing connected vehicle (CV) technologies. SwRI has also been involved in CV standards development, and has supported the establishment of a certification environment to qualify CV devices against those standards. As part of this, SwRI has developed a comprehensive test tool suite to verify conformance to the SAE J2945/1 standard (On-Board System Requirements for V2V Safety Communications).

The SwRI CV Test Tool includes data collection, data analysis, and reporting software tools, as well as all required hardware in a simple, portable package. The tool enables full test coverage of all vehicle-level J2945/1 requirements. Recording and analysis are

designed around established data collection procedures, so testing and analysis can be performed for all requirements or a subset. The tool generates an easy-to-follow summary report with conformance status for each requirement tested, while also providing detailed testing artifacts including plots, logs, and raw data.



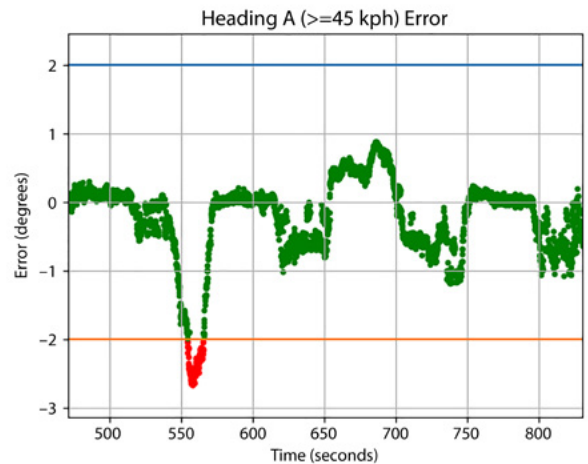
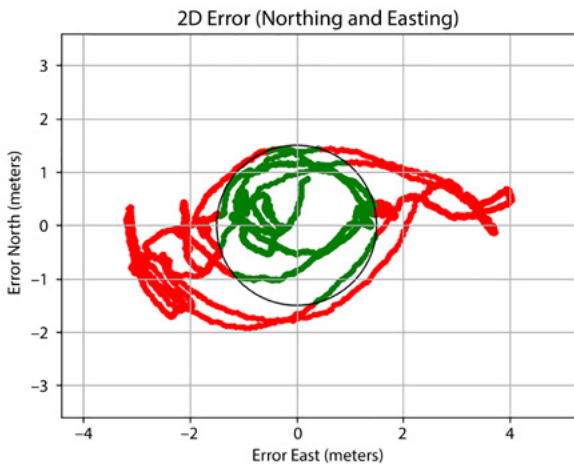
Connected vehicle test tool kit

## Test Tool Features

- SAE J2945/1 requirements verification
- Basic Safety Message (BSM) Part II analyzer
- Automated report generation
- Options for ground truth position system

## Testing Supported

- Base
- Power
- Event
- Accuracy
- CDA (controlled deceleration and acceleration)
- Security and privacy
- Path prediction



## SAE J2945/1 Items Tested

- Position determination
- Coordinated system and reference
- System time coordination
- BSM contents
- Channel and data rate
- Data element accuracy
- BSM scheduling and congestion control
- Identification randomizing

## Benefits

### Clear

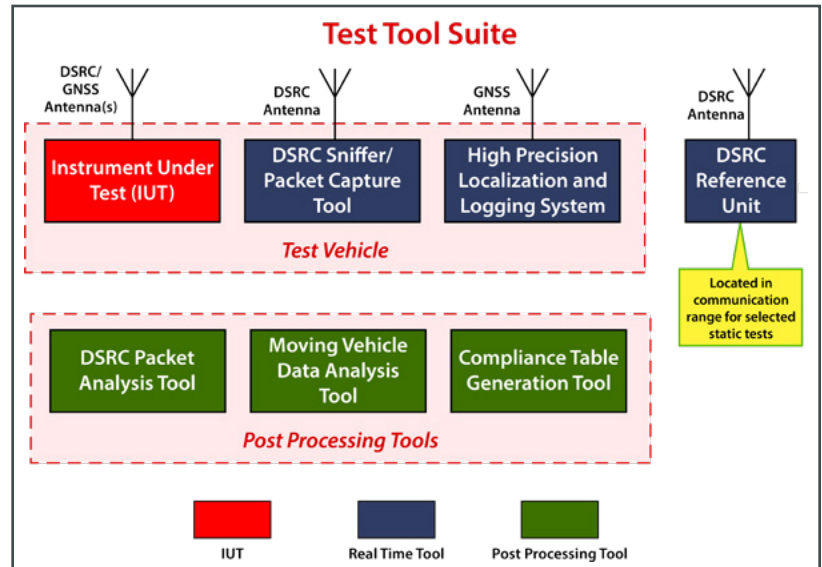
- Automatic report generation with pass/fail status for each vehicle-level J2945/1 requirement
- Informative data plots for all major J2945/1 requirements

### Comprehensive

- Detailed logs including .csv output for BSM and ground truth data
- BSM parser/viewer and path history analysis tools included
- MPR (maximum performance requirements) data collection procedures included
- Hardware included
- Software updates included for one year

### Configurable

- Test few or all vehicle-level J2945/1 requirements as desired



**We welcome your inquiries.**

For more information, please contact:

**Eric Thorn, PhD**

Manager R&D, Cooperative Systems

210.522.3915

[ethorn@swri.org](mailto:ethorn@swri.org)

**Purchase/Lease options are available**

[connectedvehicle.swri.org](http://connectedvehicle.swri.org)



## SOUTHWEST RESEARCH INSTITUTE®

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[swri.org](http://swri.org)

SwRI Business Inquiries  
PO Drawer 28510  
San Antonio, Texas 78228-0510 USA

[ask@swri.org](mailto:ask@swri.org) • 210.522.2122



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