

SAE INTERNATIONAL

SAE J3016 REVISIONS & SAE ADS/ADAS STANDARDS

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Global Ground Vehicle Standards

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SAE J3016 Overview

- SAE J3016_201401: Taxonomy and Definitions for Terms Related to On-Road Motor Vehicle Automated Driving Systems [Historical]

1st Revision:

- Clarifies and rationalizes taxonomical differentiators for lower levels (levels 0-2)
- Clarifies the scope of the J3016 driving automation taxonomy (i.e., explains to what it does and does not apply)
- Modifies existing, and adds new, supporting terms and definitions
- Adds more rationale, examples, and explanatory text throughout
- Title Changed
- SAE J3016_201609: Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles

Referenced in Declaration of Amsterdam (2016), US Policy documents, US Senate and House of Representatives legislation, various states' legislation and regulations

Substantive content revisions necessitated a 2nd ballot (concludes end of March)

SUMMARY:

- Levels are described for driving and fallback
- Clarifying Automated Driving System (ADS) – dedicated and dual mode vehicles to driving automation levels 4 and 5 (further discussion regarding level 3 / remote control)
- Dispatching entities ~ defining “dispatch”
- Dynamic Driving Task (DDT) – Fallback: level 3 to minimal risk condition / A variety of possibly use cases are illustrated with flow diagrams
- Editorial clarification of “monitor” for different uses: driver, driving environment, vehicle performance, ADS performance
- Added examples of Operational Design Domain (ODD) related to use cases

SAE Standards: Automated Driving Systems

- J3016™**: Taxonomy and Definitions for Terms Related to On-Road Motor Vehicle Automated Driving Systems (Currently in Ballot Till March 28th)
- J3134™**: ADS Equipped Vehicle Signal and Marking Lights (Work in Progress)
- J3114™**: Human Factors Definitions for Automated Driving and Related Research Topics
- J3018™**: Guidelines for Safe On-Road Testing of SAE Level 3, 4, and 5 Prototype Automated Driving Systems
- J2395™**: ITS In-Vehicle Message Priority
- J2831™**: Development of Design & Engineering Recommendations for In-Vehicle Alphanumeric Messages
- J2988™**: Guidelines for Speech Input & Audible Output in Driver Vehicle Interface
- J2944™**: Operational Definitions of Driving Performance Measures & Statistics
- J3061™**: Cybersecurity Guidebook for Cyber-Physical Systems
- J2735™**: Message Set Dictionary
- J2945/x**: Systems Engineering Process Documentation

SAE Standards: Advanced Driver Assistance Systems

ADAS Related Documents – Work In-Process & Published

J3087 WIP: Automatic Emergency Braking Performance Assessment Test Methods

J3122 WIP: Active Safety Test Target Correlation

J3157 WIP: Active Safety Bicyclist Test Targets Task Force – **New**

J3088™ : Active Safety Systems Sensors

J3063™ : Active Safety Systems Terms and Definitions

Safety and Human Factors Standards Related to ADAS

J3045™: Truck & Bus Lane Departure Warning Systems Test Procedure

J3048™: Driver-Vehicle Interface Considerations for Lane Keeping Assistance Systems

J2988™: Guidelines for Speech Input & Audible Output in Driver Vehicle Interface

J2400™: Human Factors in Forward Collision Warning Systems Operating Characteristics & User Interface

J2831™: Development of Design & Engineering Recommendations for In-Vehicle Alphanumeric Messages

J2972™: Definition of Hands-Free Operation of a Person to Person Wireless Communication System or Device

J2399™: Adaptive Cruise Control Operating Characteristics & User Interface

J2808™: Road/Lane Departure Warning Systems: Information for the Human Interface

J3077™: Definitions and Data Sources for the Driver Vehicle Interface (DVI)

Additional SAE Activities

National Highway Transportation Safety Administration (NHTSA) Letter of 15 September 2017 (*provided*):

- Standard Data Elements for Crash Reconstruction
- Clear and Concise Definitions of Parameters Regarding Operational Design Domain
- Performance Tests Suitable for Variable Performance ADS Testing

NHTSA Letter



U.S. Department of Transportation
National Highway Traffic Safety
Administration



September 15, 2017

Mr. Pokrzywa:

Thank you for your continued work in furtherance of the safe testing and deployment of Automated Driving Systems (ADS). SAE International has been a key stakeholder in this and other critical highway safety efforts. As NHTSA considers the safe integration of ADS into our transportation system, I am writing to highlight the vital importance of SAE International's role in helping to achieve this common goal.

Over the past year, NHTSA has evaluated public comments to the September 2016 Automated Vehicle Policy. Our analysis suggests that the ADS ecosystem would benefit greatly from the development by SAE International of validated standards establishing: 1) standard data elements for crash reconstruction purposes; 2) clear and concise definitions of parameters regarding operational design domain; and 3) performance tests suitable for variable performance ADS testing. As you know, NHTSA routinely considers and frequently adopts significant portions of SAE International's excellent standards in connection with its promulgation of Federal Motor Vehicle Safety Standards through the equitable and transparent mechanisms provided for in the Administrative Procedures Act.

I have great confidence in your organization's ability to facilitate a diverse group of stakeholders in a productive and transparent manner. I look forward to meeting with you to discuss this matter further. Ms. Debbie Sweet of my staff will contact you shortly for scheduling purposes. If you have any questions in the meantime, please feel free to contact Ms. Sweet or me at 202-366-7179 or 202-366-0938, respectively.

Sincerely,

Nathaniel Beuse
Associate Administrator for
Vehicle Safety Research

Cc: Mitch Bainwol, Alliance of Automobile Manufacturers
John Bozella, Global Automakers
Jed Mandel, Truck and Engine Manufacturers Association
Steve Handschuh, Motor and Equipment Manufacturers Association
Keith Wilson, SAE International

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Thank you

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