



# GROUND VEHICLE STANDARDS NEWSLETTER

Creating global, harmonized consensus-based solutions.  
Moving the on- and off-road vehicle industry forward.

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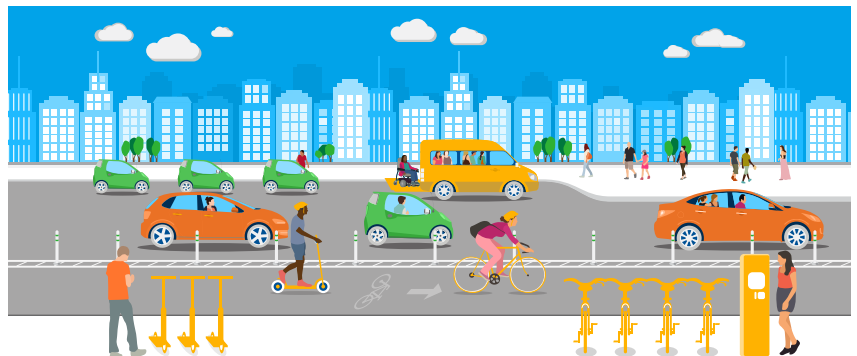
## FIRST SHARED MOBILITY STANDARD – DEFINITIONS FOR SHARED MOBILITY TERMS

[Published by SAE]

SAE International has published its first shared, globally-developed mobility standard. J3163™, “Taxonomy and Definitions for Terms Related to Shared Mobility and Enabling Technologies,” issued by the Shared and Digital Mobility Committee in September, addresses the lack of standardized terms and definitions of shared mobility services.



The lack of consensus on shared mobility terms and definitions often created ambiguity and confusion for policymakers, regulatory agencies, and the broader public. J3163™ brings together a taxonomy and definitions for this rapidly evolving area. The standard includes definitions for shared modes (e.g., carsharing, bikesharing, ridesourcing, etc.) and enabling technologies.



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“A common set of definitions, which crosses business models and international boundaries, is needed,” said document co-sponsor Susan Shaheen, PhD, Co-Director, Transportation Sustainability Research Center and Adjunct Professor, UC Berkeley.

“Taxonomy and Definitions for Terms Related to Shared Mobility and Enabling Technologies” organizes taxonomy into six categories:

- Travel modes (e.g. carsharing and bikesharing)
- Mobility applications (e.g. mobility tracker apps)
- Service models (e.g. peer-to-peer service model)
- Operational models (e.g. station-based roundtrip)
- Business models (e.g. business-to-business roundtrip)
- Deprecated terms (e.g. ridesharing)

Responding to the immediate need for common definitions, this standard was developed in only ten months. From the members of the Shared and Digital Mobility Committee, an Expert Panel, consisting of a dozen global experts who represented different aspects of the shared mobility industry, was formed. That panel moved quickly to deliver the final draft of the standard to the full committee.

“As shared mobility continues to gain momentum and increase popularity, we need to be prepared for addressing common issues resulting from the growth of this new mobility segment,”



said Jack Pokrzywa, Director of Ground Vehicle Standards at SAE. “We’re delighted to be leading this new standardization initiative, as shared mobility is an integral part of what we do.”

SAE J3163™ can be downloaded for free at [sae.org/standards/content/j3163\\_201809/](https://www.sae.org/standards/content/j3163_201809/). For more information on SAE International’s Shared and Digital Mobility efforts, please visit [sae.org/shared-mobility](https://www.sae.org/shared-mobility).

## NEW US DOT PUBLICATION RECOGNIZES SAE’S AUTOMATION STANDARDS

Numerous SAE International standards are referenced in the recently-released United States Department of Transportation (U.S. DOT) publication “Preparing for the Future of Transportation: Automated Vehicles 3.0.”

Released in October, the report, a new federal guidance for automated vehicles, outlines how automation will be safely integrated across passenger vehicles, commercial vehicles, on-road transit, and the roadways on which they operate.

“Supporting voluntary technical standards” is one of the U.S. DOT’s five core automation implementation strategies noted in the document, which states: “The Department will continue our cooperative, coordinated approach to supporting development of stakeholder-driven, voluntary technical standards and similar documents across internal modal partners.”

Dozens of SAE standards are cited throughout the publication, including multiple mentions of SAE J3016\_201806™ (“Taxonomy and Definitions for Terms Related to On-Road Motor Vehicle Automated Driving Systems.” That standard’s “SAE Automation Levels” are highlighted early in the DOT report.

An appendix to the report contains a listing of voluntary technical standards for automation, which includes many standards which have been published, or are currently in development, by SAE’s standards committees.

“The scores of references to SAE activities and standards in ‘Preparing for the Future of Transportation: Automated Vehicles 3.0’ is an unsolicited testimonial regarding the scope, credibility, and value of technical products that the SAE membership delivers to advance motor vehicle safety technologies,” said Bill Gouse, Director, Federal Program Development, SAE International.

The report concludes by stating: “U.S. DOT sees a bright future for automation technology and great potential for transforming our surface transportation system for the better, toward a future with enhanced safety, mobility, and economic competitiveness across all transportation modes.”

## SAE BATTERY TECHNOLOGY WORKSHOP FOCUSES ON ELECTRIFICATION



The SAE Workshop “Electrification: Evolution or Revolution?: The Future of Battery Technology” was held in Brussels, Belgium on September 18th.

Consistent with SAE’s mission of bringing together stakeholders to advance knowledge in a neutral forum, the workshop brought together experts from three technology regions – Europe, North America, and Asia. The event provided technical and regulatory updates to policy-makers, researchers, and industry leaders on the state of battery developments. Participants discussed the strength and weaknesses of lithium battery technology and potential alternative battery technologies.

The workshop’s opening and closing remarks were presented by Bob Galyen, CTO, CATL, and Chairman of the SAE International Battery Standards Committee. In his opening comments, Galyen talked about the evolutionary timeline for the adoption of lithium ion batteries, and the trends in electrification adoption by governments. He cited four electrification adoption success factors: technology, governmental support, new infrastructures, and consumer acceptance.

In his closing remarks, Galyen looked to the future and discussed factors which can lead to electrification adoption, including regulatory pressure, governmental support, new technologies that increase electric vehicle performance, and decreasing battery costs.

The workshop also featured two panel sessions: “Can Lithium Be the New Oil?” and “Beyond Lithium: The Search for a Better Battery.”



## SAE, ISO TECHNICAL COMMITTEE TO LIAISON ON ITS

The ISO technical committee ISO/TC 204 Intelligent Transport Systems has resolved to establish a Category A liaison with SAE International.

This liaison will enable the two organizations to explore areas of potential common interest to collaborate in international standards in ITS and road vehicles, and to support harmonization of international standards in these fields. In the short term, the liaison will enable the two organizations to be fully informed of each other's standardization activities and initiatives to minimize the duplication of efforts.

SAE International is currently ISO/TC 204's Category C liaison with Working Groups 10, 14, 16, 17, and 18. Additionally, SAE International has a Partnership Standards Development Organization (PSDO) agreement with ISO/TC 204 in co-developing international standards. The establishment of the more encompassing Category A liaison with ISO/TC 204 to its entire technical committee will further foster the collaboration

of standardization in the fields of ITS and road vehicles in greater breadth.

SAE International is the Secretariat of ISO/TC 204, and Adrian Guan, International Standards Engineer, Global Ground Vehicle Standards, SAE International, is Secretary of ISO/TC 204.

At the 52nd ISO/TC 204 Plenary meeting in September, Guan delivered an "SAE Liaison Report," discussed the work of numerous SAE committees, including the On-Road Automated Driving (ORAD) Committee, the EV/Hybrid Vehicles Steering Committee, and the Shared and Digital Mobility Committee.

"Establishing the liaison with all working groups of ISO/TC 204 is part of SAE's continuing effort to cultivate the mobility ecosystem by working together with other leading standards organizations, extending our reach to various stakeholders in the ground vehicle and transportation infrastructure all over the world," Guan said.

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## USDOT'S FEDERAL HIGHWAY ADMINISTRATION AWARDS SAE INTERNATIONAL CONTRACT TO DEVELOP CONNECTED VEHICLE AND AUTOMATED DRIVING SYSTEM STANDARDS

SAE International's ground vehicle standards program has been awarded a contract by the U.S. Department of Transportation's Federal Highway Administration ITS Joint Program Office (<https://www.standards.its.dot.gov/>) to provide program support services to the Intelligent Transportation Systems (ITS) architecture and standards programs and foster the development of non-proprietary, industry based, consensus ITS and automated driving system (ADS) standards.

The three-year project will focus on the following six subtasks:

1. Development of taxonomy for Cooperative ADS
2. Defining a high-level set of factors suitable for standardization to support interoperable integration of ADS with the infrastructure
3. Conduct an ADS and infrastructure standards gap analysis and develop an ADS standardization roadmap
4. Defining engagement activities with stakeholders (SDOs, USDOT, technology developers, other government entities, NGOs, etc.)

5. Development of new and augmenting existing standards to support ADS integration
6. Development of new and augmenting existing standards to support ITS connected vehicle integration including, interfaces between vehicles, infrastructure, pedestrians and traveler devices

"SAE has a long history of helping the automotive community move toward a common goal that serves the public, government, and industry," Keith Wilson, Director, Technical Programs, Ground Vehicle Standards explained. "We will use our extensive experience leading collaborative teams, and the open, consensus-based SAE Standards Development Process throughout this project lifecycle. In addition, standard project management processes and a systems engineering approach will be applied. An important objective of the FHWA contract is to ensure that all appropriate stakeholders are involved in the standards development process."



## NEW COMMITTEES, NEW COMMITTEE CHAIRS

Welcome, New Chairs! Thank you and know that your volunteer efforts are greatly appreciated.

### Newly-formed committees

- Truck and Bus Powertrain Committee
- Air Brake-- Parking Brake Component Test Procedure Task Force
- Refueling Interface Task Force
- Lines and Connectors Task Force
- Tanks Task Force
- Fuels and Materials Task Force
- Interior Exhaust Gas Committee
- Particle Measurement Task Force
- Shared Mobility in Household Travel Surveys Task Force
- Low Speed Mobility Devices Committee
- **Mark Polster**, Interior Exhaust Gas Committee
- **Michael Traver**, Particle Measurement Task Force
- **Michael Zitkovic**, Refueling Interface Task Force
- **Aaron Bradford**, Truck and Bus Brake Actuator Committee
- **Al Cohn**, Truck and Bus Tire Committee
- **Chris Douglas**, Truck and Bus Powertrain Testing Task Force
- **Dave Engelbert**, Truck and Bus Brake and Adv Driver Assistance Systems SC
- **William Kendrick**, Truck and Bus Powertrain Committee
- **Jason Malarkey**, J1939-81™ Network Management Task Force
- **Brian McAuliffe**, Truck and Bus Aerodynamics and Fuel Economy Committee
- **Brian McAuliffe**, Truck and Bus Coastdown Task Force
- **Gerald Paoletti**, Truck and Bus Brake Supply and Control Components Committee
- **Marius-Dorin Surcel**, Truck and Bus J1321™ Type II Fuel Consumption Task Force
- **Roy Zeitlow**, Air Brake--Parking Brake Component Test Procedure Task Force

### New chairs

- **Christopher Cherry**, Low Speed Mobility Devices Committee
- **Eric Frenz**, Drivetrain Standards Committee
- **Pamela Graham**, Tanks Task Force

### SAE: A GLOBAL PARTNER IN STANDARDS DEVELOPMENT

In addition to the maintenance and development of its family of technical standards, SAE International is also an active partner with other standards development organizations, government agencies, and regulatory bodies to support the newest, most robust, and comprehensive standards products for a changing global marketplace.

- US Department of Transportation
- Society of Automotive Engineers of Japan (JSAE)
- German Electrical and Electronic Manufacturers Association (ZVEI)
- US Federal Highway Administration
- China Automotive Technology & Research Center (CATARC)
- National Highway Traffic Safety Administration
- Korean Agency for Technology and Standards (KATS)
- US Department of Energy
- Japan Automobile Research Institute (JARI)
- US Environmental Protection Agency
- Brazilian National Standards Organization (ABNT)
- American National Standards Institute (ANSI)
- Automotive Electronics Council (AEC)
- International Organization for Standardization (ISO); US representative
- The European Telecommunications Standards Institute (ETSI)



## CALL FOR EXPERTS: TRUCK AND BUS BRAKE COMMITTEES

SAE's Truck and Bus Brake committees develop and revise standards, recommended practices and information reports related to medium and heavy duty trucks, truck-tractors, trailers, and buses with Gross Vehicle Weight Ratings greater than 4,536 Kilogram (10,000 lbs.) designed primarily for highway use.

The committees oversee a variety of topics including:

**Active Safety:** Vehicle / Operator Warning Systems and Proactive Safety Systems

**Foundation Brakes:** Brake lining friction materials, manual and automatic brake adjusters and their interfacing

**Brake Actuator:** Air brake actuators and their interfacing

**Brake Systems**

**Brake Supply and Control Components:** Air-braked vehicles supply and components and their interfacing

**Hydraulic Brake:** Brake systems on hydraulically braked trucks and buses

If you are interested in participating on these committees, please contact Jana Light at [jana.light@sae.org](mailto:jana.light@sae.org).

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## CALL FOR EXPERTS: TRUCK AND BUS WHEEL COMMITTEE

The SAE Truck and Bus Wheel Committee is looking for experts to serve on the committee, and work on the development of SAE J2803™, "Dimensional Compatibility for Commercial Vehicle Wheels to Air Disc Brake Calipers—Truck and Bus."

The committee is responsible for initiating, developing, reviewing and approving recommended practices, standards, and information reports related to hubs, wheels and the wheel mounting systems of buses, trucks and tractor-trailer combinations intended for highway use.

J2803™ defines the boundary line for establishing dimensional compatibility between air disc brake calipers and 22.5 inch

diameter disc wheels (including valve stem consideration). The line establishes the minimum wheel with valve stem envelope to allow interchangeability. This document addresses dimensional characteristics only and makes no reference to the performance, operational dynamic deflections or heat dissipation of the system. It is up to the system integrator to ensure sufficient clearance exists between the caliper, wheel and valve stem to provide safe operating conditions. Mounting systems as noted are referenced in SAE J694™.

If you are interested in participating, please contact Jana Light at [jana.light@sae.org](mailto:jana.light@sae.org).

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## VOLUNTEER RECOGNITION: DOCUMENT SPONSORS

The following individuals have recently served as active committee members and have dedicated their time and talent in guiding the development of standards documents from the preparation of all drafts through balloting and publication. THANK YOU.

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### THANK YOU.

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Carlos Agudelo  
Michael Berhan  
William Bortles  
Aaron Bradford  
Vern Caron  
Francis Duffey  
Greg Dvorchak  
Marco Enriquez  
Donald Floyd  
Lisa Fodale  
Clark Frederick  
Rob Frost  
Anand Gandhi  
Gregory Gillham  
Tom Golub

David Gonska  
John Hansen  
David Hartfelder  
David Howland  
Edward Jacques  
Robert Kado  
Steven Karamihas  
Ibrahim Khalil  
John Kohler  
Greg Kreczko  
Thomas Lockwood  
Michael Lyons  
Robert Mangan  
Rodney McGee  
Clive McKenzie

Bruce McKie  
Douglas Moore  
Kin Moy  
Sean Naughton  
Terry Nostrant  
Michael Piscitelli  
Mark Polster  
Thomas Poorman  
Eric Quillen  
Lawrence Rice  
Dan Richardson  
Glenn Scheffler  
Richard Scholer  
Susan Shaheen  
Craig Shankwitz

David Sims-Williams  
Jeffery Smith  
Matthew Srnec  
Daniel Stern  
Eric Swenson  
Paul Tuckner  
Michael Veenstra  
Robert Vit  
John Warner  
Barbara Wendling  
Bruce Wyer  
Mark Zachos  
Scott Ziolek

## **GAIN A COMPETITIVE ADVANTAGE. IMPACT YOUR BOTTOM LINE. INVEST IN STANDARDS.**

Standards. The workhorse documents that result in common practices, processes, and products throughout the ground vehicle industry are also paramount to the advancement of technology. Standards documents are more than the practices of today. They account for history and anticipate the future of technology, regulation, and business. The direct benefit of standards are simple in concept but extraordinary in their global impact toward ever-safer, cleaner, more efficient worldwide transportation.

### **Technical standards enable and enhance:**

- consistent and clear expectations for product performance and reliability
- regulatory compliance
- consistent product quality
- compatibility and interoperability
- more efficient procurement

### **Standardization also:**

- lowers trade barriers
- lowers purchasing costs
- decreases design time
- promotes innovation
- increases new technology speed to market

Because industry can rely on standards for globally harmonized solutions to common issues, individual companies can devote more time and resources to advance their proprietary technology. In this way, standards help foster competition, which advances the collective technology of industry and in turn, creates the need for new and revised standards. This has been the cycle for ground vehicle standards solutions.

And, at the heart of those solutions is SAE International, the recognized leader in mobility engineering for over 100 years. It plays the central role in developing global automotive standards and a key role in bringing US documents to the global standards table, working hand-in-hand with the global community to advance industry.

While participation in the standards development process helps the advancement of the industry it can also contribute to the advancement of your company and personal career.

### **Corporate Benefit**

- Input into the direction of the standards
- Competitive intelligence through advance knowledge of standard direction
- Advance warning of pending regulations and influence over the technical basis of the regulation
- Insight into the competitive environment
- Product liability protections
- Strong relationships with customers and suppliers
- Association with the leading society for advancing mobility technology

### **Individual Benefit**

- Professional development from continuous working contact with peers
- Peer recognition for advancing your industry's sectors technologies
- Excellent networking and learning opportunities from product developers/users around the world
- Discover emerging technologies
- Contribute to the industry's body of technical knowledge

To learn more about SAE Technical Standards Development—and for a schedule of Technical Committee meetings—visit us on the web at [sae.org/standards/](http://sae.org/standards/)

**Become a better you.  
Volunteer for an SAE Standards Development Committee.**