SAE Cooperative Research Project focuses on RESS test procedures

SAE International’s Cooperative Research Project (CRP) to Develop Repeatable Safety Performance Test Procedures for Rechargeable Energy Storage Systems (RESS) is progressing toward its objective of developing test methods and performance-based safety metrics for Li-Ion-based RESS.

Awarded a contract from the U.S. Department of Transportation (DOT) and the National Highway Traffic Safety Administration (NHTSA), this federally-funded research project – in which SAE is partnering with five major automotive OEMs actively working on RESS – is identifying and documenting appropriate test conditions, boundary limitations, and performance criteria that can be applied to vehicle level testing when possible, and component level testing when necessary.

This CRP is also developing objective test methods and metrics for analyzing RESS safety performance with and without loss of the control system. The end result of this cooperative two-year effort will be the development of safer processes and practices by the industry, which is expected to help mitigate safety risks from rechargeable energy storage systems.

SAE International Ground Vehicle Standards staff members are providing project leadership, fiscal administration and facilitation for the CRP, with Jack Pokrzywa, SAE Ground Vehicle Standards Manager, serving as Project Director and SAE Technical Project Managers Peter Byk and Keith Wilson, providing overall project management. RESS CRP OEM partners are General Motors Company, Mercedes Benz R&D North America, Toyota Motor Corporation, Honda Motor Company, and Nissan Motor Company. Galen Ressler of General Motors is Task Force Technical Director/Chair. Since the October 1, 2011 project kick-off, the task force members and consultants collaborative work effort has totaled over 1600 hours.

The development of the safety test procedures was Phase 1 of a four phase approach. In Phase 2, which began in April and is expected to be completed by the end of 2012, the OEM partners will conduct testing in their respective facilities with their HEVs, PHEVs, EVs and battery systems to collect data for use in the refinement of the safety test methodologies and procedures.

Later this year, in Phase 3 of the project, SAE will contract with Sandia National Laboratory and an undetermined independent test laboratory to retest OEM project partner vehicle models using the refined associated test. Following that, SAE will finalize and document industry Li-Ion RESS safety test procedures and recommend industry metrics for HEVs, PEVs and EVs.

The CRPs final report is slated to be released to NHTSA in October 2013.

For further information on the SAE Cooperative Research Project (CRP) to Develop Repeatable Safety Performance Test Procedures for Rechargeable Energy Storage Systems (RESS), contact Project Managers Peter Byk (peterbyk@sae.org) and Keith Wilson (kwilson@sae.org).
New Crash Data committee, other committees, seeking experts

The recently created Crash Data Collection and Analysis (CDCA) Committee is actively seeking members. The CDCA committee is responsible for developing and maintaining SAE recommended practices, and information reports related to safety-relevant data across or within SAE domains, including pre-crash, crash, and post-crash phases of impact.

The committee under the CDCA will consider methods that define, develop, and evaluate real-world crash data that relates to passenger and heavy motor vehicles that travel on public roads. Data sources include epidemiological databases (e.g., NASS/GES, FARS), field investigations (e.g., scene, vehicle, witness), vehicle data archives (e.g., Controller Area Network bus (CAN), event data recorders (EDR), naturalistic driving recorders), and infrastructure data archives (e.g., cellular, Wi-Fi, Wi-Max, dedicated short-range communications (DSRC)).

The CDCA committees consider traditional and advanced data collection methods and operational definitions as well as robust analytic methods based on either a single data source or fusion of data types (e.g., epidemiological, field investigation, naturalistic, experimental). The committees may also facilitate applicable discussion and develop work products (SAE standards, recommended practices, information reports) relating to the collection and analysis of crash data in areas such as policy issues (e.g., privacy), harmonization, or other data-related issues that may support the development and enhancement of crash avoidance and crashworthiness countermeasures.

The CDCA is seeking active members interested in serving within three initial committees including: Data Collection & Archiving, Data Analysis, and Cross-Cutting Issues. Members will contribute to the committee’s mission to develop consensus documents with the ultimate goal of improving driver safety through ensuring crash data is collected and analyzed using robust methods. For additional information and to become a member, please contact Nikki Ameredes, SAE Standards Specialist at nameredes@sae.org.

The Truck and Bus Wheel Committee (of the Truck and Bus Brake and Stability Control Combination) is looking for members in the User (OEM) Category. This 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. For information on participating on this committee, contact jwright@sae.org.

The Truck and Bus Corrosion Committee, which has previously developed “SAE J2721: Recommended Corrosion Test Methods for Commercial Vehicle Components,” is seeking general and OEM members. Contact jwright@sae.org for additional information.

The Capacitive Energy Storage Committee is seeking experts in the battery area from both OEMs and suppliers to become members. This committee will be involved in the creation of a performance specification for super-capacitors for use in automotive traction applications. For more information, contact pebejer@sae.org. If you are interested in participating in these or other SAE standards committees, you can also do so at http://www.sae.org/standardsdev/participateReq.htm.

SAE Ground Vehicle Standards staff adds liaison in China

A new member of SAE’s Ground Vehicle Standards staff team is working to develop relationships and cooperative efforts with standard organizations in China.

Based in Shanghai, Shawn Song, Senior Program Manager began work in the first quarter of 2012 to establish on-going communications with key personnel at the China Automotive Technical and Research Center (CATARC), the organization which develops automotive standards in China. He is also developing relationships and serving as a liaison between SAE and other organizations and companies in China, and promoting SAE’s certification programs in China.

“Shawn’s task is to serve as an SAE liaison to the technical standards program in China. Providing a bridge between SAE’s vast engineering knowledge base and the community of engineers in China will result in better understanding of technical positions and a quicker development of standards that are hopefully harmonized,” said Jack Pokrzywa, SAE Ground Vehicle Standards Manager.

Standard News in China

• The Ministry of Environmental Protection recently released “implementation of the announcement of the country’s IV-stage, heavy-duty vehicle gasoline engine and vehicle emission standards.” The August 1st announcement pointed out that “all production, import, sale and registration of heavy vehicles with gasoline engines must meet the standard since July 1, 2013.” The relevant enterprises should promptly adjust production, imports and sales plans.

• National standard “GB/T 28569-2012, Electric Vehicle Charging Pile Energy Metering” edited by China CEPR (China Electric Power Research Institute), was approved by AGSIQ General Administration of Quality Supervision; Inspection and Quarantine of the People’s Republic of China (PRC); SAC (Standardization Administration of the People’s Republic of China) and released on July 18th 2012. It will be formally implemented on November 1st.

• SAC proposed to establish the national standard of “Automotive Polyurethane Synthetic Leather Safety Technical Conditions.” The following standards were also published by SAC: “Automotive Engine Valve Technology Conditions;” “Car Engine Cylinder Head Airway Steady-state Flow Characteristics of the Test Method;” and Car with Metal Catalytic Converters, Platinum, Palladium, Rhodium Determination.” Public comment is being accepted through the end of August. http://www.caam.org.cn/biaozhudongtai/2012/07/30/14050760751.html


• GB7258-2012, Operation of Motor Vehicles Safety Technology Conditions* officially released and will be executed on September 1st, 2012.

Standards Consortium Administration

With over a century of experience providing the common engineering requirements for new mobility vehicles, SAE can be a key component in developing any consortium-based activity, providing the expertise and worldwide technological and human resources to help you turn your vision into a successful operating reality. Each client maintains its desired degree of autonomy, flexibility, and control. Client/project-tailored services include:

- A legal framework
- Fiscal oversight
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- Marketing and public relations activities

Engineering Aids from SAE

SAE provides products that support testing procedures set forth in SAE standards, Recommended Practices, Information Reports, and other SAE documents including the OSCAR H-Point Machine, which is used in the design of seating and interior packages and in conjunction with SAE J 826 (rev. 1995), FMVSS regulations, and ISO standards—making it the required design and auditing tool for current production.

Also available is the newly designed HPM II H-Point Machine, which includes enhancements over the OSCAR H-Point machine for use in advance design applications.

Available at http://store.sae.org/ea/
Initial document from On-road Autonomous Vehicle Standards Committee in progress

Established in 2011, the SAE On-road Autonomous Vehicle Standards Committee has its first document in progress. “SAE J3016: Taxonomy and Definitions for Terms Related to On-road Autonomous Vehicles” will establish a set of industry-accepted definitions relevant to autonomous vehicles that will be operated on existing public roadways in mixed traffic.

The committee has established a new subcommittee, the Safety Test Working Group, which is beginning work on developing a standard for test protocols for autonomous vehicles. This document, “Guidelines for Safe On-Road Testing of Autonomous Vehicles,” will provide general safety-relevant guidelines for performing tests of prototype autonomous vehicles in mixed traffic environments. Guidelines will address only the safety-related prerequisites for and conduct of such tests.

Consisting of industry experts on autonomous vehicles, the On-road Autonomous Vehicle Standards Committee is chaired by Paul Perrone, founder of Perrone Robotics. With its fielding of two autonomous vehicles into the DARPA Grand Challenge and DARPA Urban Challenge, the company established itself as an early player in this emerging technology.

Committee Vice Chair is Steve Underwood, Director of Transportation and Information, University of Michigan.

Alternative mobile air conditioning refrigerants are investigated

An ongoing SAE Cooperative Research Program (CRP) project is investigating additional alternative refrigerants. The MRB CRP “Mobile Air Conditioning (MAC) Refrigerant Blend” features participation from 15 industry partners, including OEMs and suppliers from North America, Europe and Asia.

The project started in 2011 to explore low-gwp (Global Warming Potential) refrigerants which could be possible options to HFO1234yf which was investigated in an earlier SAE CRP project, CRP1234. Work on the project’s current scope is tentatively scheduled to be completed by the end of 2012.

The scope of the MRB CRP project includes conducting a risk assessment on issues such as safety and toxicity of the alternate refrigerants, and an investigation into the refrigerants’ performance in air conditioning systems. The project is also looking at all material compatibility issues (such as how the refrigerant reacts with required lubricants and how well it works with hoses, seals, etc.) and service and handling considerations.

If the CRP determines alternate refrigerant candidates to be promising, there is the possibility that the development of new SAE standards that address the use of new refrigerants may be initiated.

SAE’s Cooperative Research Program services are available to any industry group with a common technical interest and ability to provide shared funding to conduct the project. Please contact Gary Poljak, SAE CRP Program Manager, to discuss opportunities to formulate new projects at gary@saeg.org or call +1-724-776-7196.

SAE updates trailer towing standard

SAE International has updated its trailer towing standard, "J2807: Performance Requirements for Determining Tow-Vehicle Gross Combination Weight Rating and Trailer Weight Rating." The guidelines require vehicles to be tested under consistent conditions and parameters, giving consumers accurate information when comparing the trailer-towing capacities of similar models.

Updates include revision of standard trailer weight range descriptions and clarification of test setup, ballast procedures, and test requirements in several areas. The standard can be applied to passenger cars, multipurpose passenger vehicles, and trucks with a gross vehicle weight rating of up to 13,000 lb.

“We have a great committee with representatives from all over the auto and trailer industries who have put a lot of time and effort into developing standards for trailer weight ratings,” said Robert J. Krouse, General Motors North America Trailering Engineer, BFO – Trailering, and SAE Tow Vehicle Trailer Rating Committee Chairman. “I think trailer customers will really benefit from this effort.”

The standard is available at http://standards.sae.org/J2807_201005.

Green Technology Steering Committee proposes information report on landfill free attainment; task force members sought

The SAE Green Technology Steering Committee (GTSC) has drafted a proposal for the development of an SAE Best Practices Information Report on Landfill Free Attainment.

The automotive industry has developed a wide variety of practices to recycle and reuse materials across its operations, including manufacturing and administrative activities. Those individual company practices have not been widely disseminated across the industry. The goal of the information report will be to share these practices among the SAE community and industry members.

The information report will provide definitions, establish criteria for determining value of waste and by-products, and establish procedures for achieving the goal of landfill free attainment. Draft definitions and procedures are provided in the draft proposal for initial discussions.

The draft proposal's definition of "landfill-free" takes into account all by-products (waste) generated from ongoing, day-to-day operations (including episodic/periodic events such as pit cleanouts). To qualify for landfill-free status, the draft proposal notes that facilities must disposition by-products by any other method except placement in a landfill.

The GTSC is looking for members for a task force to build upon the draft document, to further reflect the variety of landfill free attainment practices used in the industry. If you are interested in reviewing the draft proposal and participating in the task force, please contact Pat Ebejer at pebejer@sae.org.
Battery standards vital, says Committee Chair

“In order for the technical community to protect itself, and for it to flourish, it has to have documentation written by a large cross section of professionals,” said Bob Galyen, Chair of the SAE Battery Standards Steering Committee. Galyen, President of Magna E-Car Systems Battery Business Unit says SAE’s standards work is extremely important to the young electrification-off-the-automobile sector.

“There are a lot of people out there who do not understand batteries, who do not understand electrified systems,” he said, noting that without standards and the work of the nearly 500 members of SAE’s battery standards committees, there might be “a lot of people out there who don’t know what they’re doing or who can cause physical damage to themselves or others because they’re not designing safe and efficient systems.”

Aside from safety considerations, standards also make possible reductions in costs. If automakers can agree on a standard battery module or cell size, that would result in manufacturing economies of scale. No standardization results are imminent, as automakers want to retain as much packaging flexibility as possible, said Galyen, who is temporarily serving as Chair of the Battery Size Standardization Committee.

One imminent standard is “SAE J2936: Vehicle Battery Labeling Guidelines,” being developed by the Battery Standards Labeling Committee. This SAE Recommended Practice provides labeling guidelines for any electrical storage device at all levels of sub-component, component, subsystem, and system-level architectures describing content, placement, and durability requirements of labels. It addresses dimensional, positioning, and copy nomenclature, product description, voltage and manufacturing information, as well as end-of-life disposal, shipping, and electrical connection data.

Adapted from June 2012 issue of SAE International’s Vehicle Electrification magazine.

SAE launches new Global Technology Library - a complete database for electric vehicle technology

The SAE Global Technology Library—Electric Vehicle is a new, comprehensive resource from SAE International that covers the latest developments in vehicle electrification worldwide. Unique to the market, the library is designed specifically for professionals and businesses in the hybrid-electric and electric vehicle industry, and provides news and in-depth analysis on the competitive landscape; market performance; private and government research; intellectual property developments; and new and proposed regulations.

“Today’s development engineers are tasked with a formidable goal: converge mechanical, electrical and chemical knowledge into vehicles that are reliable, economical and fun to drive; and do it using a completely new propulsion technology” said Michael Thompson, Manager of Electronic Publishing at SAE International. “Our new Global Technology Library brings together all the right information in a database that is simple and meaningful.”

Content includes SAE International technical papers and standards, SAE International eBooks and SAE International magazine content. In addition, the Global Technology Library—Electric Vehicle contains data from sources outside of SAE International, including global regulations, patents and patent applications, news articles, and market forecasts and industry reports.

For the initial launch, much of the information is made available through content partnership agreements between SAE International and other publishers, including Bloomberg BNA, InterRegs, SupplierBusiness, Advanced Automotive Batteries, The Patent Board, the U.S. Department of Energy, Honda Corporation, Cars21.com and ABOUT Publishing. SAE has plans to continue adding content post-launch as well. Content from partners like IDTechEx and NASA Tech Briefs is already in the works.

Future Global Technology Libraries, information databases dedicated on very narrowly defined topics, will be produced based on customer demand and detailed market-gap analysis.

For more information about the product or to sign up for a free two-week trial, go to www.saegtl.org/ev.

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

For On- and Off-Road Harmonized Standards Solutions, All Roads Lead to SAE

Since 1905, SAE International has been providing the common engineering requirements for new mobility products, advanced technologies, and applications. It is uniquely positioned to provide innovative standards solutions to the global on- and off-road industries and their engineering challenges.

For automotive vehicles, SAE plays the central role in developing essential North American emissions and safety standards to meet some of the most stringent regulations in the world. Through SAE, it plays a key role in bringing standards forward from the United States market to the global level.

For off-road vehicles, the SAE provides technical and educational programs, standards, and best practice solutions for the entire off-road equipment industry.

For more information, visit www.sae.org.
Volunteer recognition: document sponsors

These following individuals have 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 ballot ing and publication.

Thank you.

David Antanaitis, General Motors LLC
Ken Archibald, Independent Test Services
Daniel Arens, Baldwin Filters Inc
Paul Balluski, Ford Motor Co
Jerey Bauer, John Deere Dubuque Works
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Mark Zachos, DG Technologies

Volunteer spotlight: SAE Awards

Congratulations to the following SAE 2012 Technical Standards Board Outstanding Contribution Award winners recognized for outstanding service in the technical committee activities of the Society. This includes valuable contributions to the work of SAE technical committees, unusual leadership in the activities of an SAE technical committee, significant contributions as a representative of the Society to the accomplishments of technical committees of other organizations or of government agencies, and outstanding contributions to SAE technical committee work in the form of research, test methods and procedures, and/or development of standards.

Carlos Agudelo, Link Engineering Company, Specialized Vehicle and Equipment Council
Vern Caron, AvniMortor Inc, Truck and Bus Council
Paul Dicke, Holtech Energy Solutions LLC, Motor Vehicle Council
Gregory Felder, Michelin North America Inc., Truck and Bus Council
Rob Frost, Cummins Inc., Truck and Bus Council
David Gamble, John Deere & Co, Construction, Agricultural and Off-Road Machinery Council
Marth Kapanowski, Ford Motor Co, Motor Vehicle Council
Michael Larsen, General Motors LLC, Motor Vehicle Council
Raj Rajamanickam, Haldex Hydraulics Corp, Construction, Agricultural and Off-Road Machinery Council
Galen Ressler, General Motors LLC, Motor Vehicle Council
Jeffery Smith, Veo Engineering, Motor Vehicle Council
John Yurtin, Delphi Connection Systems, Motor Vehicle Council

Nominate a deserving individual for an SAE award

AE/InterRegs Standards and Regulations Award

Nomination deadline: September 30

This award recognizes a practicing engineer who has provided significant contributions to the standards, regulations, or conformity assessment systems for improved safety or reduced emissions in a ground vehicle mobility product. The individual can work on the standards/ regulations and/or product to comply with the standards/regulation. The award was established in 2000 by InterRegs Ltd. as a way to reward significant participation in standards, regulations or conformity assessment systems to engineers and to encourage increased participation in the future. Submit nominations at www.sae.org/awards or call 1-877-606-7323 (U.S. and Canada only) or 1-724-776-4870 (outside U.S. and Canada).

New chairs, committees, and task forces

Lisa Boran, Ford, Chair Automotive Security Guidelines and Risk Development Task Force (under the Vehicle Electrical System Security Committee)
Neil Borkowicz, Chrysler, Chair Vehicle Electrical Hardware Security Task Force (under the Vehicle Electrical System Security Committee)
Mike Larsen, General Motors, Chair, SAE Regulatory Cooperation Task Force (under the Lighting Coordinating Advisory Group)
- Cross-Cutting Standards Committee (under Crash Data Collection and Analysis Steering Committee) Currently seeking volunteers, contact Nikki Ameredes; nameoredes@sae.org
- Collection and Archiving Committee (under Crash Data Collection and Analysis Steering Committee) Currently seeking volunteers, contact Nikki Ameredes; nameoredes@sae.org
- Analysis Standards Committee (under Crash Data Collection and Analysis Steering Committee) Currently seeking volunteers, contact Nikki Ameredes; nameoredes@sae.org
- Truck Driver Distraction Task Force (under the Truck & Bus Human Factors Committee)

...continued on next page
Gain a competitive advantage. Impact your bottom line. Invest in standards.

Standards. The workhorse documents that commonize 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 benefits 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 North American 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 Benefits
- Input into the direction of the standards
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- Advance warning of pending regulations and influence over the technical basis of the regulation
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- Product liability protections
- Strong relationships with customers and suppliers

Association with the leading society for advancing mobility technology

Individual Benefits
- 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 http://www.sae.org/standards/.

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