

Aerospace Standards

Newsletter

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SAE International

Creating globally harmonized standards. Moving industry forward.

Message from the SAE Aerospace Council

Dear Standards Volunteers:

As we look back on a challenging year for both our industry and the world economy, we can still celebrate much success in 2009. International participation on our Technical Committees grew by another 9%, nearly twice what we'd set out to achieve through our globalization initiative. And we will once again be focusing our efforts into having SAE's Aerospace Standards Committees better reflect the global industry it serves.

In 2009, the SAE Aerospace Standards Program supported the aerospace industry in a variety of new and exciting ways – including developing a Counterfeit Electronic Parts Standard, launching a next generation Air Traffic Management Steering Group, and marshalling SAE's resources to address the growing field of Integrated Vehicle Health Management (IVHM). We also began rolling out a revision to the classification of our standards, based on direction from the Technical Standards Board, which should ease our committees' workload and facilitate access to SAE standards for users. Full implementation of these changes will occur during the first quarter of next year.

Our 2010 initiatives will continue to include a focus on the harmonization of policies and voting rules for committees and creating a mechanism for identifying emerging technologies and related standardization issues... I welcome your thoughts on these issues. In addition, SAE will explore ways to improve our Aerospace Standards committee meetings – including looking at regional SAE International subcommittees that will be globally harmonized within SAE. This could potentially reduce travel costs while building required diversity in the standards dialog. Finally, we will be holding a Committee Leader Workshop at SAE International World Headquarters on 22-23 June 2010 where Aerospace Standard Committee Leaders will share best practices and engage in a dialog with Aerospace Council Leaders on new initiatives for the Aerospace Standards program.

Our success will depend on our collective ability to understand and act strategically upon those things that are fundamental to our continued health as a consensus aerospace standards development organization. In that future I will—as I do today and have for many years—be confident in our Council and all its committees as you, our members, bring to the table some of the very best thinking in our business. As we continue on our successful SAE standards development journey, my very best to each of you in 2010!

Best regards,

Laura Hitchcock

External Standards Management, Strategy and Policy
The Boeing Company
Aerospace Council Chair, SAE International

2009 in review

Document Publication Status	Number Published
New/Issued	51
Revised	329
Reaffirmed	128
Non-Current	13
Cancelled	38
Amended	35

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New era in aviation calls for formation of air traffic management steering committee

The industry is entering a new era in aviation—the “Global Satellite Navigation Age”—in which the universal application of Global Navigation Satellite Systems (GNSS) and Automotive Dependent Surveillance-Broadcast (ADS-B) will trigger changes in global air traffic management (ATM) on a scale surpassing even that which was seen during the introduction of radar more, more than fifty years ago.

With SAE’s legacy of standards development, administration, and harmonization, and direct as well as peripheral experience in air traffic management, it is uniquely positioned to support industry in this new generation of satellite-intensive ATM systems and emerging standardization needs especially in the area of human factors and cockpit interface.

To address the changes this era will usher in and to meet the evolving standardization needs, a SAE Air Traffic Management Steering Committee has been formed the focus of which will be on identifying opportunities to collaborate and/or develop standards.

SAE’s current works-in-progress related to NextGen and SESAR include the following aerospace recommended practices (ARPs):

- *ARP6024: Flight Deck Based Merging and Spacing*
Issuing SAE Committee - **Flight Deck Handling Qualities Standards for Trans Aircraft (S-7)**
- *ARP5740: Cockpit Display of Data Linked Weather Information*
Issuing SAE Committee – **Weather Information Systems (G10-W)**
- *ARP5760: Measurement Procedures for Enhanced Vision Systems*
Issuing SAE Committee - **Heads-Up Display Subcommittee (A-4HUD)**
- *ARP6032: Synthetic & Enhanced Vision Systems*
Issuing SAE Committee - **Flight Deck Handling Qualities Standards for Trans Aircraft (S-7)**

If you are interested in learning more about SAE and its standards development in the field of ATM or if in the future, you would like to lend your expertise to an SAE ATM-related standards development committee, contact Laura Feix, SAE Aerospace Standards Engineering at +1.724.799.9198 or lfeix@sae.org

Call for volunteers

The following SAE Technical Standards Development committees are currently seeking volunteer participants:

Aerospace Behavioral Engineering Technology	Aerospace Electrical Power & Equipment
Aerospace Fuel, Oil & Oxidizer Systems	Aircraft Instruments
Electromagnetic Compatibility	Flight Deck & Handling Qualities Standards for Transport Aircraft
Aircraft Maintenance Chemicals & Materials	Vehicle Maintenance & Aircraft Servicing
Aerospace Propulsion Systems Support Equipment	Packaging, Handling & Transportability
Commercial Aircraft Composite Repair	

If you possess the expertise in any of the listed areas—or you know of a colleague who may be interested in being involved—contact Senior Standards Specialist Becky DeGutis at bdegutis@sae.org

Mark your calendars: The next AeroTech Congress & Exhibition is planned for Toulouse, France in 2011.

New standard thwarts problem of counterfeit aerospace electronics; U.S. DoD adopts

According to a study by the U.S. Department of Commerce Bureau of Industry & Security, the number of counterfeit incidents reported by 387 participants climbed from 3,868 in 2005 to 9,356 in 2008, an increase of more than 140 percent. About nine percent of the companies documented cases related to government applications.

The globalization of the aerospace industry and the resulting diversity of regional and national requirements have complicated the problem. Assuring the quality and integration of products purchased from suppliers throughout the world, and at all levels within the supply chain, has become increasingly difficult.

SAE International recently responded to the problem, completing this past fall a new standard designed to mitigate the risks of receiving and installing counterfeit electronic parts. The SAE standard, **AS5553: Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition**, which was created by the **Counterfeit Electronic Parts Committee (G-19)**, standardizes the requirements, practices, and methods related to parts management, supplier management, procurement, inspection, test/evaluation, and response strategies when suspected or confirmed counterfeit parts are discovered.

The standard was recently adopted by the U.S. Department of Defense.

How do counterfeit parts get into the supply chain of the aviation industry, which has a reputation for thoroughness and security? It begins with simple economics - supply and demand. The volume of electronics used by the military and the airline industry is miniscule compared to the public's use, which includes cell phones, computers and entertainment systems. Chip manufacturers focus on meeting these large volume needs and subsequently stop producing the less-profitable aerospace components.

When original equipment manufacturers can no longer buy from an original component manufacturer, they must go to the open market and find a broker who can supply the equipment. Counterfeiters are aware of the shortages and begin approaching brokers with the bogus goods. Brokers must rely on the word of the suppliers and have no way of determining if the electronic parts are bogus.

The control plan includes processes to specifically address counterfeit part risk mitigation methods in electronic design and parts management, supplier management, procurement, part verification, material control and response strategies when suspect or confirmed counterfeit parts are discovered.

The standard calls for maximized availability of authentic parts; procurement of parts from reliable sources; assuring authenticity and conformance of procured parts; control of parts identified as counterfeit; and reporting counterfeit parts to other potential users and government investigative authorities.

The Counterfeit Electronic Parts Committee has recently begun work on a new related document, AS6081, Counterfeit Electronic Parts; Avoidance Protocol, Distributors.

SAE seminar introduces industry to counterfeit electronic part standard and mitigation methods

To help introduce *AS5553: Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition*, SAE developed a seminar that specifically addresses counterfeit part risk mitigation methods in electronic design and parts management, supplier management, procurement, part verification, material control, and response strategies when suspect or confirmed counterfeit parts are discovered. First offered at the 2009 SAE AeroTech Congress in Seattle, WA this past November, the one-day course provides information and guidance in each of the before mentioned key requirement areas. The latter part of the course highlights counterfeit detection techniques and part compliance verification methods. The course concludes with a hands-on learning exercise in identifying, under a microscope, characteristics that can be found in counterfeit electronic parts.

Phil Zulueta and **Katherine Whittington** instructed the course titled *Introduction to AS5553 and Counterfeit Electronic Parts Avoidance Training*. Zulueta manages the Hardware Technology Assurance Group at the Jet Propulsion Laboratory and facilitates the Counterfeit Parts Working Group meetings at JPL. He is the chair of the SAE G-19 Counterfeit Electronic Parts Committee. Whittington is a Staff Engineer in the Electrical Parts Engineering organization at the Jet Propulsion Laboratory. She has been a member of JPL's Counterfeit Parts Working Group (CPWG) since 2007.

The seminar benefits a wide range of individuals and experience levels across the electronics industry and supply chain including anyone who designs, specifies, buys, receives, assembles and tests electronic hardware.

For upcoming seminar dates, visit the SAE website at www.sae.org/pdevent/C0950

Workshop to be held for aerospace standards committee chairs

A workshop that will focus on standards committee leadership development and the sharing of best practices is planned for June 22-23, 2010 at SAE International World Headquarters in Warrendale, PA. Additionally, the workshop will provide attendees with opportunities to network and learn from each other as well as share ideas and problem solve. All standards committee leaders including division and committee chairs/vice chairs are invited to attend. More details will be announced in the months ahead.

A-21 committee report clarifies aircraft emissions testing procedures

Ambiguity and unclear language in literature explaining aircraft emissions modeling procedures can often lead to inaccuracy in reporting aircraft pollutant emissions.

A new report by SAE International's **Aircraft Noise Measure and Noise Aviation Emission Modeling Committee (A-21)** – *AIR5715: Procedure for the Calculation of Aircraft Emissions* – has standardized language that will help clarify existing standards on aircraft emissions. The report, released this summer, is presented in an easy-to-understand language and will assist modelers in creating more consistent results.

"In the past, the descriptions of some methods were often not very clear," said **Brian Kim**, who chaired the SAE A-21 project work team for calculating aircraft emissions. "Under these previous conditions, two people could read the same descriptions and come up with completely different ideas of how the modeling should be conducted. Subsequently, you would get completely different results."

"Our committee has attempted to clarify the language and provide a clear, understandable framework for future testing."

The report covers both jet and turboprop aircraft through all modes of operation. In addition, the SAE International report:

- Presents different emissions modeling methods into a single document,
- Promotes consistent utilization of methods among different modelers, and
- Helps modelers implement consistent methods, creating clearer understanding of which methods to use for different pollutants and scenarios.

Kim said the report will have broad impact as it is expected to be used by the Federal Aviation Administration, Eurocontrol, the International Civil Aviation Organization, and numerous research institutions.

"We intend to update the document as various methods evolve and new information becomes available," Kim said.

Standard to enable Ethernet for critical embedded systems

The Embedded Computing Systems Committee (AS-2), part of **SAE's Avionic Systems Division**, is developing a new standard to establish Ethernet as a high-bandwidth network protocol for time-, mission-, and safety-critical systems. It is expected that broader use of Ethernet will reduce costs and enhance design of open and scalable electronics architectures for space, aerospace, defense, ground vehicles and other industry applications.

SAE AS6802: Time-Triggered Ethernet (TTEthernet) describes a set of powerful services to meet the requirements of reliable, hard real-time data delivery in advanced integrated systems. With TTEthernet, critical control systems, audio/video and standard LAN applications can safely coexist in one Ethernet network.

Initial supporters of SAE AS6802 standardization project are Lockheed Martin, Bombardier, Embraer, General Dynamics, Sikorsky Aircraft, Honeywell, BAE Systems, Ultra Electronics, GE Fanuc Intelligent Platforms, TTA-Group and TTEch. First production program that plans to use COTS components compliant with SAE AS6802 will be NASA's Orion crew exploration vehicle in the scope of the U.S. human spaceflight program. Lockheed Martin also works on several advanced integrated system programs using this technology.

Standard on quality management systems released; companion standard to follow

The **G-14 Americas Aerospace Quality Standards Committee** published *AS9100C: Quality Management Systems - Aerospace - Requirements*. They expect to release *AS9101D: Quality Management Systems - Audit Requirements for Aviation, Space, and Defense Organizations*, the companion checklist, shortly. This release will enable certification bodies and auditors to participate in the required training courses that will enable them to audit and certify suppliers to AS9100C.

To help aerospace/defense industry professionals or auditors understand the changes to the newly revised AS9100 and to ensure solid application of the new specifics for the revision, SAE developed a two-day seminar. Included in the training is a detailed review of AS9100-C requirements. Instructor **Buddy Cressionnie** of Lockheed Martin, currently the Americas IAQG 9100 Team Lead responsible for maintenance, revision, and clarification of the AS9100 standard, led the seminar held in conjunction with the 2009 SAE AeroTech Congress.

A webinar of Understanding AS9100-C Quality Management System Standard took place early December. For future scheduled webinars visit the SAE website at <http://www.sae.org/pdevent/WB0958>

New work coming to Avionic Systems and Subsystems Committee (AS-1C) at the request of US Navy

At the request of the NAVAIR 4.5.6 SPIES (Sensor/Platform Interface and Engineering Standards) program, the SAE Aerospace's **Aircraft Systems and Systems Integration Committee (AS-1)** formed a technical assessment panel to review the range of sensor/platform interfaces in EO/IR airborne systems and identify those interfaces which would benefit from standardization. Four main categories were identified from the initial brainstorming session: 1) Data (imagery, metadata, and command and control); 2) Communications/Networking (intra-structure to move data, not the data itself); 3) Mechanical; and 4) Support equipment.

The following Task Groups were then formed:

- AS-1C1 Task Group EO/IR Signal Sets
- AS-1C2 Task Group EO/IR Ground Support Equipment Port
- AS-1C3 Task Group EO/IR Mission Avionics Data Exchange
- AS-1C4 Task Group EO/IR Mechanical Interfaces

In an August 2009 letter to the Sensor/Platform Interface and Engineering Standards (SPIES) Government Overview Committee, Navy Program Executive Officer S.R. Eastburg thanked **David Neel**, Chairman of the SAE Aircraft Systems and Systems Integration Committee (AS-1) for his leadership of this effort to date.

Aircraft Store Integration Committee (As-1b) issues AS42701

Published this October, AS42701 establishes techniques for validating that a mission store complies with the interface requirements contained in MIL-STD-1760 Revision D. Its purpose is to provide methods for validating that a mission store's electrical interface complies with the mission store interface (MSI) requirements of MIL-STD-1760. The document provides a set of modular, independent methods covering each of the requirements placed on the store by MIL-STD-1760. Methods contained apply to both the primary and auxiliary interfaces of MIL-STD-1760.

Consensus Based Standards and More from SAE

In addition to its world renowned consensus based and globally adopted technical standards SAE provides a full complement of standards capabilities:

- Consensus Standards
- Committee Management
- Standards Consortium Administration
- Database Creation and Management
- Accreditation and Certification

Volunteer spotlight: **SAE Aerospace Awards**

2009 Technical Standards Board Outstanding Contribution

Recognizes individuals for outstanding service in the technical committee activities of the Society; 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.

Stefano A. M. Lassini, Chief Engineer, MMS, GE Aviation Systems, LLC (AS-1 Committee)

Carlos Blohm, Senior Engineer, Lufthansa Technik AG (AMS CARC Committee)

Bruce A. Lewis, Experimental Developer, U.S. Army (AS-2 Committee)

Billy Martin, Engineer Principal, Cessna (AE-2 Committee)

Susan A. Rogers, Product Manager, Sensata Technologies Inc. (AE-8 Committee)

Robert Steffen, Process Engineering Metallurgist, Principal Fellow, Raytheon (AMS Metals Committees)

2009 SAE Aerospace Chair Award

Recognizes outstanding leadership demonstrated by chairs of committees under the Aerospace Council and Air & Space Group; may be presented in recognition of performance over an extended period of time or for a singular accomplishment.

Ralph "Woody" English, President, DeVivo AST, Inc. (AS-4 Committee)

Franklin W. Kolk Air Transportation Progress Award

Recognizes an individual for contributing to air transportation and/or the work of the SAE aerospace technical committees; commemorates the late Franklin W. Kolk and his contributions to the advancement of civil air transportation and SAE International. The award is funded through the SAE Foundation.

2007 Recipient **Sharanpal Sikand**, a Technical Fellow at Boeing Integrated Defense Systems

2008 Recipient **Sham S. Hariram**, a Technical Fellow at The Boeing Company

Both recipients were presented the award during the SAE 2009 AeroTech Congress and Exhibition in Seattle, Nov. 10-12.

Marvin Whitlock Award

Recognizes an individual for significant technical contributions related to the operational availability of aircraft. Operational availability includes areas such as repair design, tooling, maintenance practices, logistics, inspection, modification and safety. The award commemorates the late Marvin Whitlock, former Senior Vice President of Maintenance and member of the Board of Directors for United Airlines. The award is funded through the SAE Foundation.

2007 **Sham S. Hariram**, a Technical Fellow at The Boeing Company

2008 Recipient **Thomas T. Collipi**, Northrop Grumman

Both recipients were presented the award during the SAE 2009 AeroTech Congress and Exhibition in Seattle, Nov. 10-12.

Clarence L. (Kelly) Johnson Aerospace Vehicle Design and Development Award

Recognizes individuals who have distinguished themselves by making significant contributions during their career in the innovative design and development of advanced aircraft and/or spacecraft. It perpetuates recognition of Clarence L. (Kelly) Johnson's accomplishments and inspiration as the aeronautical genius who created Lockheed's famed Skunk Works and who played a leading role in the design and development of more than 40 of the world's most advanced aircraft. This award is made possible through a fund established by the Lockheed Advanced Development Company.

2007 **Robert Baumgartner**, Lockheed Martin Aeronautics

2008 Recipient **Harry A. Scott**, Chief Engineer (ret.), National Aerospace Plane of North American Aviation/Rockwell International; Executive Vice President (ret.), Space Access LLC

Both recipients were presented the award during the SAE 2009 AeroTech Congress and Exhibition in Seattle, Nov. 10-12.

E-31 committee working with European Aviation Safety Agency and CAEP

ICAO's committee on Aviation Environmental Protection (CAEP) is developing an aircraft engine particulate matter emissions certification methodology to evaluate particle emissions and their impact on air quality and climate change.

CAEP is coordinating with the SAE E-31 committee, which is responsible for establishing standard methods and recommended practices for sampling and measurement of aircraft exhaust emissions. E-31 previously developed the Aerospace Recommended Practice (ARP) on smoke that was adopted by ICAO in the first edition of its Annex 16 Volume II. This year, CAEP finalized and approved SAE's Aerospace Information Report (AIR) on the measurement of non-volatile particle emissions.

When published, this new ARP is expected to be used by ICAO and regulatory agencies to underpin the certification requirement on aircraft engine particle emissions.

The European Aviation Safety Agency (EASA) works within CAEP and last year, became a member of the SAE E-31 committee to closely participate in the development of the non-volatile particle emissions report. This past November, EASA hosted the SAE's particulate matter subcommittee meeting.

Aerospace Council activities--an update

The Council continues to focus on developing a more global membership to address international standardization issues. Current Council membership is composed of 27% non-US participants.

- Council is working to identify emerging technologies and related standardization issues.
- Over 20 standards were recommended for inclusion in the Aero Design Competition by the Council's Aero Design Competition Task Group. The standards were also offered as a Noise Testing Exercise.
- 2010 initiatives will include a focus on the harmonization of policies and voting rules for committees, increasing global participation in the SAE Standards Development Program and developing the Committee Chairs Workshop.

SAEInternational™

The Standard for Aerospace Innovation

SAE International knows that it is people who advance technology. Since 1916 it has worked hand-in-hand with the aerospace community to find solutions to its most common problems through such globally adopted technical documents as Aerospace Standards (AS), Aerospace Material Specifications (AMS), Aerospace Industry Reports (AIR), and Aerospace Recommended Practices (ARP)—becoming the world's largest, most respected aerospace standards development organization.

While its rich standards development history enables SAE International to offer an array of capabilities to serve industry's growing need for future harmonized solutions, a full suite of learning resources – including lifelong engineering education, technical publishing, and events – work to ensure the pipeline of future engineering talent and keep today's practitioners at the forefront of professional growth.

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Volunteer recognition: 2009 Document Sponsors

The SAE Standards Development Program thanks its Document Sponsors. These individuals have served not only as active committee members but have dedicated their time and talent in guiding the development of standards documents from the preparation of all drafts through balloting and publication.

Chris Armellini, Defense Supply Center Philadelphia	David Flask, Honeywell Aerospace	Christopher Michael , Kopp Glass Inc
Jerry Brown, Lockheed Martin Aeronautics Co	Marc E Gage, Hamilton Sundstrand	Alan Miklos, Glenair
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Michael Brandt, Alcoa	Ron Grzeskiewicz, ATI Allvac	Thomas Parayil, ATI Allegheny Ludlum
Lisa Brasche, Iowa State Univ	Jack Hagelin, Boeing Co	Robert Parfitt, Rolls-Royce PLC
Earnest E Brown, Defense Supply Center Columbus	Daniel Harres, Boeing Company	Nilesh C Patel, Shur-Lok Corp
Gary Brown, Carpenter Technology Corp	Thomas Hague, Rolls-Royce Corp	A. W. Patterson, Lockheed Martin Aeronautics Co
Wes Brown, Science Applications Intl Corp	Bohdan Hasiuk, Defense Supply Center Philadelphia	Michael Peck, Dynamold Inc
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Roy Clarke	Ing Ejaz Buksh Ilahi, SPS Technologies	Brian Sova, Boeing
Jeffery Lee Clements	Daniel A Johnson PhD, Daniel A Johnson Inc	Ken R Sabo, Lockheed Martin Aeronautics Co
Robert Clements, BAE Systems	Daniel A Johnson	Gabriel Sampson, Averest Inc
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Brock R Crocker, Vestergaard Co Inc	Brian Kim	Roger B Sines, Honeywell Aerospace
Bobby H Crumb, Lockheed Martin Corp	Jeff N Kingsley, US Air Force	Allen M Sohlo, Dyneon LLC
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Kent DeFranco, Lockheed Martin Aeronautics Co	Richard G Kruse, Cenco Inc	John Michael Ster, General Services Administration
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Thomas A. Dwenger, Goodyear Technical Center	Kenneth Lefebvre, Performance Review Institute	Hans Van der Velden
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Norman Englund, Boeing Co	Jean-Jacques Machon , CEP Exempt Aerospace	Craig Willan, Omega Research & Engrg
Tony Esposito, Plymouth Eng	Bill Macy	Steven Williams, Rexnord Corp
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Peter Feiler, Software Engineering Institute	G A McLean PhD, Civil Aerospace Medical Institute	Dr Ronald E Zielinski, Polymod Technologies Inc
	Paul McMurtry, Hamilton Sundstrand	Phil Zulueta, Jet Propulsion Laboratory
	Leo Meredith	

Q1 Technical Committee meetings *Current as of December 11, 2009*

January 19-20	Registration Management Committee (RMC) Meeting, Redondo Beach, CA, USA
January 19-21	Aircraft Seat Committee, Daytona Beach, FL, USA
January 21	RMC Other Party Assessor Workshop , Redondo Beach, CA, USA
January 25-29	S-18 Safety Assessment For Airborne Systems & Equipment, Reno, NV, USA
January 27-29	AMEC, Aerospace Metals Engineering Committee Meeting , Pacific Grove (Asilomar), CA, USA
January 27-29	AE-2 Lightning Committee , Orlando, FL, USA
February 1-4	Pending AS-1 Aircraft Systems & Systems Integration Committees, Melbourne or Orlando, FL, USA
February 1-4	G-10 Aerospace Behavioral Engineering Technology (ABET) Committee, Melbourne, FL, USA
February 23-25	S-16, Turbine Engine Inlet Flow Distortion, Salt Lake City, UT, USA
March 2-3	AE-8 Executive Committee, Savannah, GA, USA
March 8-10,	RMC, AAQG & Team Meetings, Daytona Beach, FL, USA
March 8-10	G-3, Aerospace Couplings, Fittings, Hose & Tubing Assemblies, Wichita, KS, USA
March 16-18	E-36, Electronic Engine Controls (Hosted by Bombardier), Belfast, Ireland
March 16-18	S-15, Engine Performance Presentation for Electronic Digital Computers (at SAE AHO), Troy, MI, USA
March 22-26	S-18, Safety Assessment for Airborne Systems & Equipment Communication, Antalya, Turkey

Of note: More than 70 committee meetings are planned for 2010 with approximately 12 of these taking place outside the US.

2009 Committee Meeting Highlights

- AMS G-9 Aerospace Sealing Committee held its 60th meeting in Oklahoma City.
- The AE-8 Committee held the Aerospace Electrical Interconnect Systems Symposium (AEISS) in conjunction with its committee meeting in Portland, OR in October.
- Several committees took the opportunity to hold their meetings at SAE's World Headquarters Conference Center in Warrendale, PA. These groups were impressed with the state-of-the-art facilities available and enjoyed the convenience of numerous restaurants and hotels nearby.
- 38 committees held their meetings in conjunction with the SAE AeroTech Congress & Exhibition in Seattle, WA in November.
- A-21 Aircraft Noise Measure and Noise Aviation Emission Modeling Committee held a meeting in the SAE London Office.
- G-13 Human Modeling Technology Standards Committee held its first face-to-face meeting in several years where the Chair and attendees discussed revitalizing the committee work and taking the group in a new direction.

Standards Development Leader and Partner

SAE has become the world's largest standards development organization by partnering with industry for nearly 100 years to discover solutions to its common problems. Today, it works with companies – and other SDO's around the world—to create and harmonize standards for the advancement of the global aerospace industry.

- AeroSpace and Defence Industries Association of Europe (ASD)
- Society of Japanese Aerospace Companies (SJAC)
- NATO Standardization Agency (NSA)
- European Organization for Civil Aviation Equipment (EUROCAE)
- International Air Transport Association (IATA)
- National Center for Advanced Materials Performance (NCAMP)
- Federal Aviation Administration (FAA)
- European Aviation Safety Agency (EASA)
- International Civil Aviation Organization (ICAO).

Acknowledgement: 2009 Corporate Supports

SAE International wishes to acknowledge those companies who contributed to the funding of the 2009 SAE Standards Development Program. Thank you for helping write the future of the aerospace industry.

Adel Wiggins Group
Advanced Chemistry & Technology
Aero Mag 2000 Yul, Inc.
Aerofit, Inc.
Air Cruisers Company
Alcoa Fastening Systems
Amphenol Fiber Systems International
AMSAFE Aviation
Cessna Aircraft Company
Crissair, Inc.
Cryotech Deicing Technology
DME Corporation
European Aviation Safety Agency (EASA)
Electronics, Inc.
Emhart Fastening Teknologies
Faber Enterprises, Inc.
Federal Aviation Administration
GE Aircraft Engines
Glenair, Inc.
Global Ground Support
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Hamilton Sundstrand Aerospace
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Intertechnique
IPECO, Inc.
Israel Aircraft Industries, Ltd.
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Meggitt Aircraft Braking Systems
Mi-Tech Metals, Inc.
Moog Inc.
N*ICE Aircraft Services & Support GmbH
NASCO Aircraft Brake, Inc.
National Utilities Company/NUCO
Nexans
Northrop Grumman Corporation
Pacific Scientific Company
Pall Aeropower Corporation
Parker-Hannifin Corporation

Polymod Technologies, Inc.
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Pratt & Whitney Corporation
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Tiodize Company, Inc.
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Trelleborg Sealing Solutions US, Inc.
Tri-Star Electronics International, Inc.
Wesco Aircraft Hardware Corp
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Gain a competitive advantage. Impact your bottom line. Invest in standards.

Standards. The workhorse documents that commonize practices, processes, and products throughout the aerospace 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 advancing their proprietary technology. In this way, standards help foster competition. Competition advances the collective technology of industry which in turn creates the need for new and revised standards. This has been the cycle for nearly a century of aerospace standards solutions and at the heart of those solutions is SAE International, the world's largest more respected aerospace standards development organization (SDO). From design to build, operate, and maintain, SAE International works hand-in-hand with the global aerospace community advancing industry.

While participation in the standards development process helps the advancement of the industry it can also contribute to the advancement of your personal career as you:

- Network and interact with business associates, related contacts, and experts in your field
- Learn from product developers and users from around the world
- Discover emerging technologies
- Enhance your professional knowledge base
- Gain or enhance your skills in Change Management, Organizational Development, Facilitation, Conflict Resolution, Time/Project Management, Decision Making, Presentation Skills
- Contribute to the industry's body of technical knowledge
- Associate you and your company with the leading society for advancing mobility technology

To learn more about SAE Technical Standards Development—and for a schedule of Technical Committee meetings—visit us on the web at www.sae.org/standardsdev

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

SAE Aerospace Council Organization Chart

Match your expertise with the many SAE Technical Standards Development Committees that are writing the common engineering requirements for the advancement of the aerospace industry.

