International Standardization

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The European Standards Organizations

Journal
Defense Standardization Program

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Departments

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Director's Forum

The Value of Lessons Learned in Multinational Force Operations

The United States continues to reinforce its commitment to multinational coalition partnerships and alliances as the means to address military conflicts, as well as peace-keeping and humanitarian missions around the world.

Let's face it, it's too expensive to go it alone. However, as the number of coalition partners and alliance members increases, it is more important than ever to ensure interoperability through standardization solutions. The ability of two or more nations to work effectively together requires them to create a common ground or to have agreed-upon standardized doctrine, tactics, equipment, communication mechanisms, practices, and procedures. Fundamentally, standardization is one of the key enablers to interoperability among coalition partners and allies. But I also believe that interoperability requires more than agreed-upon standardization documents.

In general, interoperability requirements should be established prior to the development of any standardization document—from the leadership (top down) or field level (bottom up)—and should be provided to a team of subject matter experts to begin working on an operational or materiel solution. Once the standardization document has been developed and distributed for use, care must be taken in following its implementation. We must realize that not every standardization solution will provide its intended users with the desired capability, and there may be times when a new requirement must be accommodated quickly, making it difficult to gather a team of subject matter experts to address the shortfall. There also are

times when a standardization solution is developed and has all the markers for success, but when it's used during an actual multinational force operation, it may not deliver what the warfighter needs. Therefore, it is important that we take the necessary steps to send and receive feedback to ensure standardization successes are recorded and interoperability shortfalls are accommodated. Achieving the highest level of interoperability requires materiel and operational standardization solutions. But, let's not forget the importance of feedback. Objective and frequent feedback allows for sharing lessons learned.

If you ask five people how they view lessons learned, you may get a variety of responses, but at least one may imply something along the lines of "learning from past mistakes." The term

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"lessons learned" tends to yield a negative connotation, because some people may believe that a mistake or failure has occurred. But, in fact, lessons learned are valuable, as experience provides the required feedback to assess our capabilities. As noted by Henry Brook Adams, "all experience is an arch to build upon." If history has taught us anything, it has emphasized the importance of and challenges associated with preparing for unexpected multinational force operations. Also, it has taught us that our successes are closely tied with the ability of our coalition partners and allies to change and to shape lessons learned into interoperability solutions.

Documenting lessons learned and forwarding them as feedback for appropriate action provide us with an opportunity to pause and evaluate our experiences. Efforts to document lessons learned must be more than an act of recording an outcome, but should be focused more on the value of the lesson itself. Whether the outcome of an operation or exercise is successful or not, there is great value in knowing what happened and in relaying the information back to leaders and subject matter experts so that something can be done to further refine processes or procedures. In order for coalition partners and allies to meet the demands of a changing global environment, there must be adequate standardization solutions to interoperability requirements, and most important, nations participating in multinational force operations on the ground must provide feedback that is essential to refining standardization solutions.

An admiral speaking at a conference I attended years ago used two slides that have stuck in my mind. The first said, "There are no permanent victories; to win one must stay alert and maneuver." The second said, "If we don't change direction we'll end up where we're headed." Gathering, studying, analyzing, and acting on lessons learned both from failure and success is the "stay alert" part of the equation. Being ready, able, and willing to actually learn and change behavior based on the lessons is the "maneuver" part of the equation. We don't do as well as we could in acting on the lessons we've learned, and that is symptomatic of the second slide. This edition of the journal outlines several approaches used by coalition partners and allies to satisfy interoperability requirements, as well as to capture lessons learned and to apply them to develop best practices and further refine standardization solutions. Doing so will enable them to continue meeting their interoperability requirements in the future. We must, as the admiral said, stay alert and maneuver.

The NATO Standardization Agency—
A Continuing Success Story

By Cihangir Aksit

This year is the 60th anniversary of the establishment of the NATO Standardization Agency (NSA). The creation of the NSA (originally named the Military Agency for Standardization) just 2 years after the North Atlantic Treaty was signed in 1949 indicates the fundamental importance of multinational standardization to NATO's ability to conduct operations. The NSA is a continuing success story.

Effect of Standardization on Operations

On May 13, 2010, 14 American soldiers made history by becoming the first foreigners to receive Germany's Gold Cross medal, one of its highest awards for valor. They were medical evacuation crewmen honored for risking their lives to rescue critically injured German soldiers ambushed during a patrol north of Kunduz, Afghanistan. A true success story, but what impact did standardization make? As usual, when things go well, standardization is taken for granted. However, it is only because of a number of NATO standardization agreements (STANAGs) that troops of different nations could work together at all. In this instance, three STANAGs were key: one covering the medical evacuation message, another (Allied Joint Medical Support Doctrine) describing how to conduct medical evaluations, and the third addressing the procedures for classifying injuries and transporting patients to medical installations.

Standardization also facilitates radical changes. For example, Turkey, which entered NATO together with Greece in 1953, changed its 630-year-old military map symbols and the colors used to denote friendly and opposing forces through the implementation of STANAGs. Indeed, many nations use only NATO operational STANAGs and no longer produce their own.

Examples of the contribution of standardization to military operations are innumerable. In fact, without standardization, multinational interoperability could not be achieved, and NATO operations would not be possible.

NATO's Standardization Structure and Process

The NSA is the key element in the NATO Standardization Organization (NSO), which has overall responsibility for NATO standardization activities. The NSO is led by the Committee for Standardization (CS). As shown in Figure 1, the CS is one of several senior committees reporting to the North Atlantic Council (NAC), the highest committee in NATO. Those committees are the Civil Emergency Planning Committee, Logistics Committee (including the Petroleum Committee), Air Defense Committee, Military Committee, Conference of National Armament Directors, and Consultation, Command and Control Board. The senior committees are the tasking authorities authorized to develop standards in their respective domains.

Figure 1. Structure of the NATO Standardization Organization
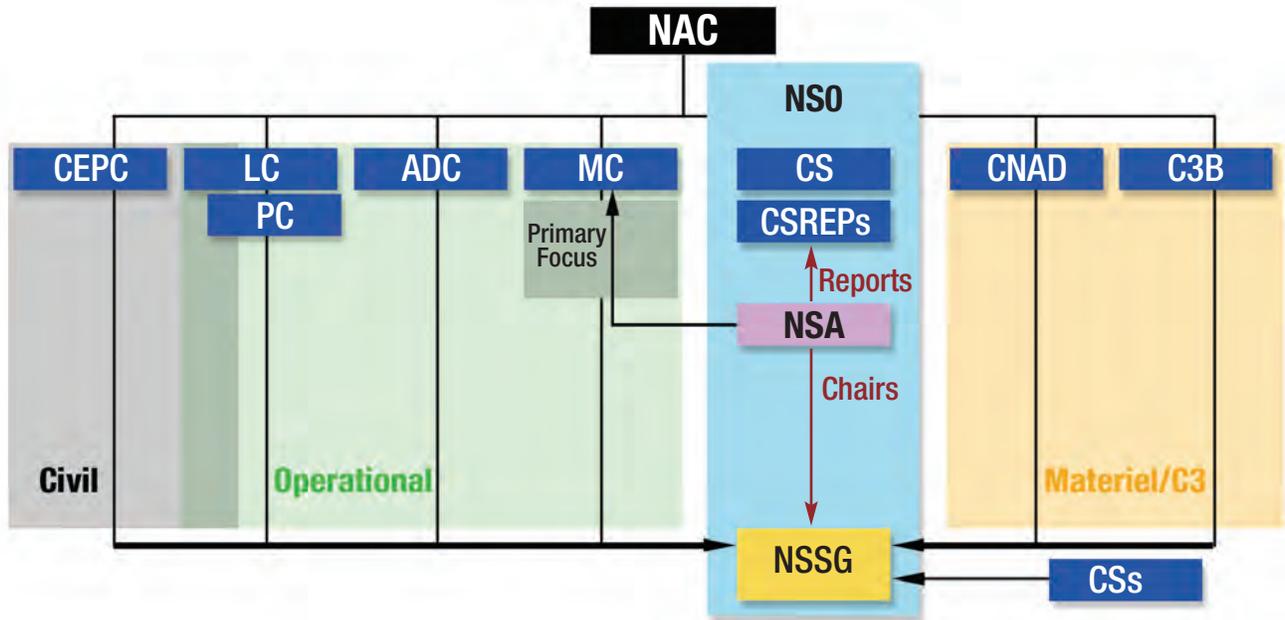
Notes: ADC = Air Defense Committee, C3 = Command, Control, and Communications, C3B = Consultation, Command and Control Board, CEPC = Civil Emergency Planning Committee, CNAD = Conference of National Armament Directors, CSREPs = CS Representatives, LC = Logistics Committee, MC = Military Committee, NSSG = NATO Standardization Staff Group, and PC = Petroleum Committee.

The role of the CS is to determine how nations can realize standardization. The NSA is the executive body supporting the CS and managing the process of developing standards and then promulgating them. NSA's primary focus is on standards affecting military operations. The NSA is supported by the NATO Standardization Staff Group, which addresses the operational, materiel, and administrative aspects of standardization.

As can be seen in Figure 2, the NSA comprises the Policy and Coordination Branch and four military branches. The Policy and Coordination Branch addresses terminology and partner cooperation, as well as crucial areas of operational standardization within NSA's military branches.

The NSO continues to follow standardized processes and procedures to develop standards. Standardization requirements are established in one of two ways:

■ Top-down process, in which standardization issues are addressed through the NATO Defense Planning Process (NDPP). The process is initiated when the strategic commands identify standardization requirements, along with interoperability requirements that are part of the capability requirements for nations. The NSO then staffs the so-called "targets" to be refined into concrete standardization tasks to be fulfilled.

Figure 2. Current NSA Structure
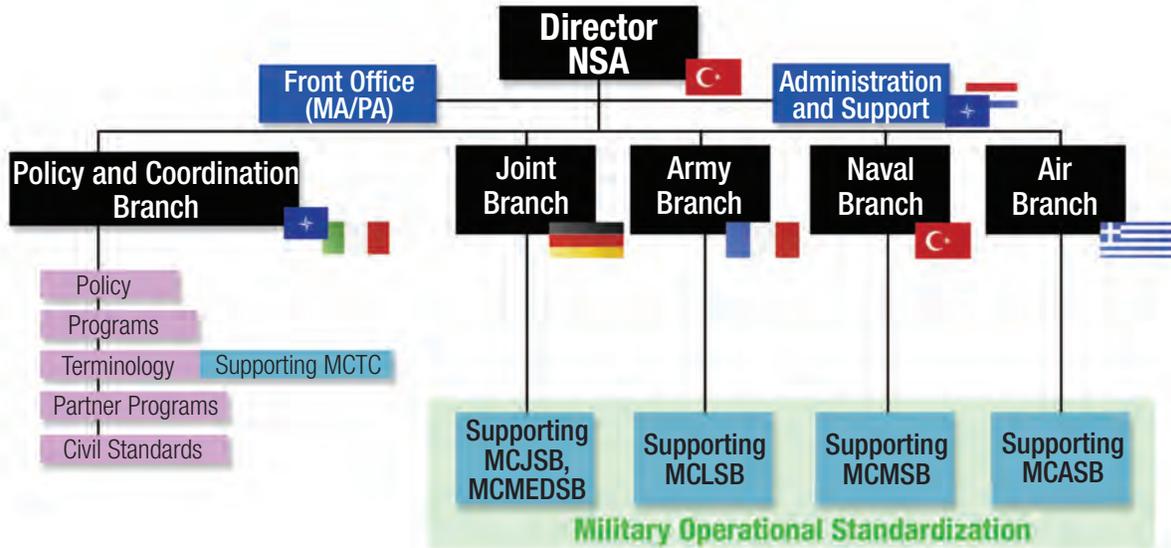
Notes: MA/PA = Military/Personal Assistant, MCASB = Military Committee Air Standardization Board, MCJSB = Military Committee Joint Standardization Board, MCLSB = Military Committee Land Standardization Board, MCMEDSB = Military Committee Medical Standardization Board, MCMSB = Military Committee Maritime Standardization Board, and MCTC = Military Committee Terminology Conference.

▌ Bottom-up process, in which nations or NATO commands report a standardization need that is validated by the appropriate tasking authority. Historically, most NATO standardization has been, and continues to be, through the bottom-up process.

The resulting standards are produced at the lowest classification possible by national subject matter experts who attend the subordinate working groups. These are then agreed to by nations' ministries of defense.

The NSA provides the framework for facilitation and coordination and, crucially, the focal point for the promulgation of agreed-to standards. The NATO Standardization Documents Database is the most significant element in making 2,000+ STANAGs plus supporting Allied Publications (8,000+ documents) available for all NATO nations and partners. An unclassified mirror of the database provides many standards openly on the Internet or through a password-protected website. The website also has 10,000+ definitions of NATO terminology and 13,000 members who, on an average day, download 800 documents and send 600 e-mails.

NATO Standardization Challenges

Winston Churchill commented: "It has been said that democracy is the worst form of government except all the others that have been tried." NATO was established on the democratic fundamentals of its founding nations. This approach is naturally reflected in the decision-making processes within the organization, including standardization. Therefore, making decisions about standardization takes longer than many would like and

often requires compromises. However, the process delivers an important result—enduring interoperability among the 28 NATO member nations (and many partners).

Because standardization is the main enabler for interoperability, NATO determined that the interoperability requirements need to be identified. The process for doing so is being developed as part of the implementation of the NDPP. Identifying sound interoperability requirements is going to be challenging and will make new demands of the NSO and NSA. To address the challenge, the NSA and the strategic commands are forming a new Interoperability Task Force to ensure effective coordination.

For most of NATO's history, military forces have been largely concerned with cooperation at the Army group level. NATO's more recent deployed operations, particularly in Afghanistan, have required interoperability at far lower levels than had previously been envisioned. Many issues have been reported and solved through standardization, for example, through the use of the "fast-track" process to produce allied joint doctrines on countering improvised explosive devices and on counter-insurgency. Nevertheless, operational commanders often are not able to find the time to report lessons learned on standardization shortfalls. The failure to report such lessons remains a key problem beyond the NSO's control. Therefore, individual nations must make the effort to raise standardization issues for the NSO to address.

NATO standardization continually faces new challenges such as the speed of technical innovations. The military needs to keep up with developments in technical fields, for example, the recent new high-priority field of cyberdefense.

Interoperability and, therefore, standardization become even more important as nations seek to reduce their armed forces due to the current economic climate. However, unless nations take the importance of interoperability into account when deciding whether to fill their standardization posts at home or in the NSA, NATO's ability to support the existing, let alone additional, standardization work may present insuperable challenges.

NSA Reform

In keeping with decisions made at the June 2011 ministerial meeting, the NSA is developing a plan to improve its cost-effectiveness. The plan is based on the methods of change management. As shown in Figure 3, the NSA staff, subject matter experts, and others involved in NATO standardization are analyzing options to improve their job efficiency. Among other things, those stakeholders conducted a SWOT (strengths, weaknesses, opportunities, threats) analysis to help identify practicable options. The selected options will constitute a consolidated view of NSA's short-term reform future. The NSA will provide that information to the CS and the Defense Policy and Planning Committee

Figure 3. Way Ahead for Agency Reform
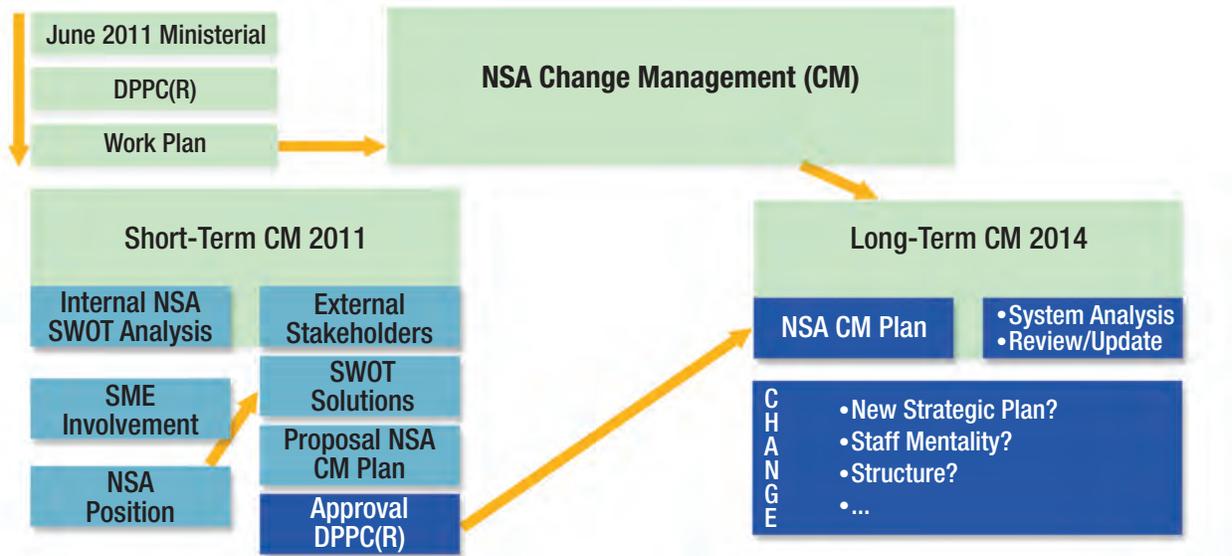
Notes: DPPC(R) = Defense Policy and Planning Committee (Reinenforced), and SME = subject matter expert.

for review. If the two committees agree, the results could be integral to shaping the future of the NSA and standardization management in NATO.

The NSA planned to deliver a final short-term product (quick wins) to the senior committees by November 2011. The long-term change management plan will follow and should be implemented at the beginning of 2014.

What will reform mean for NATO standardization and the NSA? It will enable NSA to realize its vision, which is twofold: be a "one-stop shop" for standardization support management for all ongoing NATO operations and be the point of contact for standardization entities within and outside NATO through increased cooperation with other civil standard developing organizations, thus enhancing overall interoperability.

For the last 60 years, collaboration among NATO nations and partners has been supported by the low-key but effective endeavors of the NSA, fostering interoperability with the aim to deliver readiness to our military forces through common standards. With this in mind, and looking forward to new challenges, there's no better opportunity to emphasize this point: "Be wise, standardize."

About the Author

Cihangir Aksit has been director of the NSA since June 2010. Previously, he was assigned to the President's Defense Consultant in 2010 and then to the Consultant Expert at the permanent Mission of Turkey to NATO in Brussels. Mr. Aksit spent most of his career in the Turkish Armed Forces where, among other things, he played a major role in the establishment of total quality management and change management. He retired in 2008 as a Turkish Army Major General.

ABCA Coalition Interoperability

A Cold War Program Can Evolve

By Richard Kurasiewicz

The American, British, Canadian, Australian, and New Zealand Armies' Program (ABCA) addresses interoperability—the ability to train, exercise, and operate together—of all its members' land forces. ABCA seeks to achieve the highest possible degree of interoperability through materiel and non-materiel standardization. Established in 1947, ABCA continues building on its legacy of cooperation during World War II and remains a dynamic and proactive program addressing coalition interoperability gaps.

ABCA demonstrates relevance in its current program plan, products, and exercises by identifying and mitigating interoperability gaps and promoting mutual understanding. These efforts underscore the commitment of member nations to coalition interoperability as well as the importance of interoperability to the member nations. The U.S. Army leadership is committed to ABCA, because the benefits derived from these international programs have proved invaluable. ABCA, a major U.S. Army security cooperation activity, is mature, cost-effective, and enduring.

Program Plan

In April 2011, ABCA delegates developed the annual work plan, called the Program Plan 2011, considering key recommendations from 2010 activities and national inputs for interoperability gap analysis. The plan to close identified gaps, approved by the ABCA National Directors (one-star level), is an aggressive effort designed to meet the prioritized needs of armies in accordance with Executive Council (Vice Chief of Staff of the Army equivalents) strategic direction.

The sample of tasks designed to address interoperability gaps and the associated ABCA products or deliverables are current and important. Among the many issues identified, two—transition planning guidance and stabilization support to achieve civil effect—are especially relevant, particularly as the NATO/International Security Assistance Force mission in Afghanistan winds down and responsibility for security is transferred to the Afghan security forces. Although interoperability at senior levels is considered adequate, it becomes more critical and problematic at the two-star Combined Joint Task Force level and below. Recognizing this, ABCA Capability Groups are examining interoperability gaps and methods on how best to mitigate them across full-spectrum operations.

ABCA History: ABCA Armies' Program Resulted from Close Allied Cooperation on Operations

1947	1963	1964	1965	2004	2006
American, British, and Canadian Armies (ABC Armies) reach formal agreement	Australian Army joins (ABCA Armies)	Basic Standardization Agreement (BSA 64) ratified	New Zealand Army granted observer status	U.S. Marine Corps participation formalized as an associate member	New Zealand Army granted full membership (but ABCA acronym maintained)

ABCA Program Plan 2011

Capability/support group	Lead nation	Topic areas	Products
Command	United States	Design and operations of two-star-level Combined Joint Task Force ABCA communications and information systems interoperability strategy Information management standard	Report Multiyear campaign plan Report Database Standard
Act	United Kingdom	Transition planning guidance Stabilization support to achieve civilian effect	Handbook (companion to ABCA *Security Force Capacity Building Handbook*) Report
Sense	Canada	Human terrain coordination and integration Electronic warfare operations	Report Report Section for *Coalition Operations Handbook* Chapter for ABCA *Coalition Intelligence Handbook*
Shield	United States	Incident site exploitation data template and exchange Chemical, biological, radiological, and nuclear campaign plan	Standard Report
Sustain	New Zealand	Transition to host nation of combat service and health service support	Update to the ABCA *Coalition Logistics Handbook*
Exercise and Experimentation	Australia	Lessons collection—Afghanistan Coalition Lessons Analysis Workshop 2011 ABCA Activity Allied Auroras 2011	Report Report Database Report
Futures	United Kingdom	ABCA strategic assessment Deterrence, prevention, and capacity building—implications for land forces	Report ABCA future concept development Report ABCA future concept development
Science and Technology	Canada	ABCA S&T priorities	—

Coalition Operations Handbook

The *Coalition Operations Handbook* (COH), updated in 2010, illustrates the quality and durability of ABCA products. The COH addresses topics such as forming effective coalitions, logistics, communications, and full-spectrum operations. It mitigates the ABCA nations' interoperability gaps, identified and addressed by all Capability Groups, by providing planning questions and integrating standard operating procedures (SOPs) to achieve interoperability. The U.S. Army has incorporated the COH and other ABCA findings into its doctrine and pushed ABCA recommendations into its curricula and unit SOPs:[1]

- In 2002, ABCA assembled a group of urban operations experts to draft coalition procedures prior to entering combat in Iraq. These procedures became a chapter in the COH.
- In 2004, NATO used the COH as the base document to produce the *NATO Handbook for Coalition Operations*.
- The U.S. Army's Battle Command Training Program uses the COH for mission rehearsal exercises, preparing units for deployments to Bosnia, Iraq, and Afghanistan.
- U.S. Army Field Manual 3-16, *The Army in Multinational Operations*, acknowledges that "much of the information in this manual is based on the ABCA *Coalition Operations Handbook*."
- The U.S. Army Command and General Staff College has incorporated the COH into its elective course curricula.

The ABCA library includes publications to assist with planning and preparation for coalition operations. For example, in addition to the COH, other ABCA products used by land force staffs in current operations include the *Coalition Logistics Handbook*, a guide to the planning and conduct of logistics support in an ABCA coalition, and the ABCA *Security Force Capacity Building Handbook*, a compendium of approaches—to operational-level design through to tactical-level execution—to assist coalition commanders and staff members with understanding and developing solution to building security force capacity.

Exercises and Workshops

ABCA strives to be forward looking in exercises and experimentation. The recently completed ABCA Activity Allied Auroras 2011 (AA11) and the Coalition Lessons Analysis Workshop (CLAW) 2011 indicate ABCA's proactive approach.

ALLIED AURORAS 11 AND MULTILATERAL INTEROPERABILITY PROGRAMME

AA11, a technical test, successfully evaluated a proof-of-concept of an ABCA distributed synthetic environment (DSE). A DSE is a network of remote locations of various member nations connected using a simulated scenario and linked together via the Multilateral

Interoperability Programme (MIP). The Allied Auroras DSE was designed to support pre-mission training by an ABCA brigade headquarters, identify ABCA simulation interoperability gaps, and inform national simulation programs.

The MIP is an information exchange requirement standard developed by a forum of 27 nations and NATO that was adopted by ABCA. The MIP protocol enables the exchange, between MIP-compliant nations, of graphics showing the common operational picture to enhance command and control (C2) interoperability. As a direct result of ABCA, Block 2 of MIP is being successfully used by coalition partners in Afghanistan to exchange position reports, graphics, tracks, and certain significant C2 activities. The recently developed Block 3 version of the MIP was used in AA11 to provide maneuver graphics and position location reports between national C2 systems.

AA11 demonstrated the ability to develop, build, and test a multilateral DSE, resulting in savings in both manpower and fiscal resources. More important, such modeling and simulation applications will allow leaders, without deploying to a common location, to become immersed in anticipated environments, analyze decision alternatives, prepare for operations throughout the spectrum of conflict, and develop a common understanding and coalition knowledge base. The way ahead is to further advance the DSE for future multinational command post activities and mission rehearsal exercises.

COALITION LESSONS ANALYSIS WORKSHOP 2011

The CLAW, first held in 2004, is now a biennial activity for the collection and analysis of coalition lessons learned in current conflicts and exercises. CLAW 2011, recently conducted at Fort Leavenworth by the Center for Army Lessons Learned, also included a lessons-collection deployment to Afghanistan in July 2011. CLAW confirmed such key issues as the need for the following: a doctrine and planning handbook on transition of responsibility from coalition military forces to host nation security forces; more coalition training at the division (two-star) headquarters and below; accelerated, timely, and focused distribution of ABCA products and lessons learned; increased information sharing; and more compatible communications and information systems.

The CLAW enables ABCA to identify and confirm current interoperability issues and focus efforts where most needed. A biennial CLAW report will be published to inform the ABCA National Directors and Executive Council in support of interoperability gap analyses and strategic direction.

Summary

Close allied cooperation and collaboration contribute immeasurably to ABCA's successes. The end of the Cold War and 9/11 were national watersheds and resulted in coalition

and ABCA transformation. Just as the U.S. Army and its coalition partners began a decade-long period of demanding combat operations and transformation, so too did ABCA, strategically transforming itself in 2002–2004 to focus on coalition interoperability. The resulting program transformation to a centralized, top-down approach to interoperability has proved remarkably effective and evolutionary. ABCA's approach promotes interoperability and understanding of each nation's approaches, allowing the members to work more effectively with ever-decreasing resources. Such a transformation within ABCA resulted in responsive, timely, and relevant research and products, and it also encouraged adaptation to maintain relevancy as evidenced by this year's program plan, products, activities, and exercises.

Is ABCA effective? The program is effective, as evidenced by the continued interest shown by the members and relevance of various products produced and periodically updated, such as the COH, which have been incorporated by the U.S. Army. ABCA will continue to prove its effectiveness and relevance as it addresses interoperability in an era of reduced defense funding and capacity.

Is interoperability still important? Although the nature of war and the methods of warfighting may change, the need for interoperable forces will remain high. Interoperability is enhanced through understanding, cooperation, and standardization. ABCA is not a relic of the 20th century; it remains an effective and relevant organization for the needs of 21st century military operations. The information and products are available and relevant. Increased awareness of these at all levels will further prevent reinventing the wheel.

Conclusion

ABCA promotes coalition interoperability, understanding, predictability, and cooperation and is one of the most effective U.S. Army security cooperation activities. As Winston Churchill pragmatically noted, "There is only one thing worse than fighting with allies; and that is fighting without them."[2] The U.S. Army is more than ever likely to prosecute conflicts with allies and partners. That approach saves lives and money.

[1]Richard A. Cody and Robert L. Maginnis, "Coalition Interoperability: ABCA's New Focus," *Military Review* (http://findarticles.com/p/articles/mi_m0PBZ/is_6_86/ai_n17093422/).
[2]See http://www.military-quotes.com/Churchill.htm.

About the Author

Richard Kurasiewicz, a U.S. Army civilian and retired officer, is a program analyst for the Deputy Chief of Staff, G-3, Pentagon, and the ABCA Deputy U.S. National Coordinator. While on active duty, he served as a field artillery and foreign area officer in a variety of command and staff positions and later worked as a contractor on the international affairs staffs in Army G-3 and then the Joint Improvised Explosive Device Defeat Organization.✹

The MSHT—Advancing Standardization Management Cooperation

By Dave Wilkinson

In these days of shrinking resources, it is important to maximize defense standardization management cooperation wherever possible. Such cooperation by ministries of defense (MODs), civil standards bodies, and industry can provide benefits on a national, regional, and international scale. Among those benefits are improved interfacing among stakeholders; defense standards development and application; greater use of civil standards; access to standards; and sharing of knowledge, expertise, and laboratory resources.

One body at the forefront of this cooperation is the Materiel Standardization Harmonization Team (MSHT), primarily a body of governmental defense standardization management experts. The MSHT originally consisted of experts who participated in the Western European Armaments Group before the creation of the European Defense Agency (EDA). However, the team's membership is not restricted to European Union nations. Participating nations include Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Germany, Hungary, Italy, Latvia, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Turkey, United Kingdom (UK), and United States. The team's membership is supplemented by regional organizations that have a vested interest in defense standardization, such as the European Commission (EC), EDA, NATO, and European Committees for Standardization and Electrotechnical Standardization (CEN-CENELEC). Other stakeholders are invited to some meetings as needed to contribute to the MSHT's efforts.

Possibly the only defense group of its size and type, the MSHT focuses on nations assisting each other with standardization problems and standardization management. The willingness of the members to share knowledge, expertise, resources, and so on, has led to many successes.

Development of Tools

MSHT successes include the development, by a minimum of two nations for use by many nations, of bilateral standards considered as best practice standards and open to adoption by the European Committee for Standardization (CEN) or NATO. Each standard is published in the format used by the nation leading the development of the standard; for example, when the United Kingdom is the lead, the standard is issued as a UK Defense Standard. A prime example is Defense Standard 61-23, "Generic Fuel Cells," which has been published through extensive cooperation between Germany and the UK.

The MSHT's Best Practice Defense Standardization Management Model is another important tool with many benefits. For example, the model provides nations

▊ a catalyst for rethinking their standardization management strategy,

- a framework for developing their standardization management organizations,

- an incentive to explore standardization management best practices in greater depth,

- opportunities to consider centralizing standardization functions on an international basis, and

- a source of reference for taking best practices a step further through international cooperation.

The model, shown in Figure 1, addresses seven areas of standardization management: defense standards management, stakeholder management strategy and representation, advice and guidance, standardization management training, civil and defense standardization cooperation, communication management, and NATO standardization agreement (STANAG) ratification and implementation management. Each of these areas has been thoroughly investigated, and a number of key best practice processes have been identified.

Figure 1. Best Practice Defense Standardization Management Model

Defense Standards Management
- Bi/multilateral development
- Controlled use
- Periodic maintenance
- Stakeholder participation and feedback
- Easy access

Advice and Guidance
- Throughout the project life cycle
- Use of standards in contracts

Standardization Management Training
- Staff training program
- Stakeholder training services

Communication Management
- Communications strategy
- Dedicated Internet and intranet sites
- Help desk

Defense Standardization Organization

Stakeholder Management Strategy and Representation
- Top-down standardization management
- Bottom-up standardization management
- Corporate message communicated
- International connectivity

Civil and Defense Standardization Cooperation
- Influence on civil standardization policy
- Formal recognition of national civil standards organization
- Development and modification of civil standards
- Adoption of defense standards
- Coordination of MOD input to civil standards

NATO STANAG Ratification and Implementation Management
- One authoritative organization
- Formal delegation of ratification authority
- Implementation monitoring process

Another success story is EDA's European Defense Standardization Management Information System (EDSIS), the brainchild of the MSHT, which is advising on its structure and information population. EDSIS is still under development but already contains lists of defense standards projects that nations are offering up as candidate bilateral standards. Other EDSIS areas under consideration or development include the listing of standardization management problems, experts, policies, procedures, publications, and training.

Implementation of Best Practices

The MSHT recently undertook a health check by evaluating nations' current status with regard to implementing best practices as identified in the Best Practice Defense Standardization Management Model. The following are among the strengths identified: communication of national standardization management positions, formalized delegation of NATO ratification authority, development and maintenance of stakeholder networks, defense standard feedback mechanisms, easy access to defense standards, and stakeholder involvement in defense standards development. These strengths are not true for all nations but apply to many.

The health check also highlighted activities resulting from the identification, development, and implementation of best practices. The following are examples:

❚ Inclusion, on EDSIS, of information about proposed CEN-CENELEC standards that could affect the defense environment

❚ Consideration of the establishment of processes that provide visibility of STANAG implementation

❚ Development of standardization management communication strategies and plans, or reviews of the effectiveness of current strategies and plans

❚ Use of fuel cells in battlefield operations

❚ An ongoing study by EDA on the provision of central access to standards used in defense acquisition

❚ Further development of the European Defence Standards Reference System, referred to as EDSTAR, which provides project managers with a list of MOD and industry best practice standards and advice on their application

❚ Improved standardization training by some nations, with an ongoing MSHT activity to compile and review available standardization training and the decision to develop a training element on EDSIS

❚ Further development and population of EDSIS.

In addition to identifying strengths and best practices, the health check identified improvement opportunities. MSHT plans to concentrate its effort on three such opportunities: development and modification of civil standards to meet defense requirements,

standardization communication strategy, and prevention of the use of canceled and obsolete standards. MSHT chose those particular standards because they were also raised by industry during a recent EDA study. Among the other improvement opportunities identified in the health check are cooperation, at a senior level, among MOD, industry, and civil standards organizations; adoption of defense standards as civil standards; coordination of MOD inputs to civil standards; and provision of dedicated help-desk services and standardization management advice to project managers.

Cooperation with Regional Organizations

MSHT regularly works with EC, EDA, NATO, and CEN-CENELEC to assist with and advance standardization management. Below are some examples:

▌ Assisted EC and EDA with reviewing the 1999 Sussex Study report, *Standardization Systems in the Defense Industries of the European Union and the United States*. As a consequence of that review, MSHT introduced a number of standardization management initiatives. All of the study's recommendations that could be pursued by MSHT are ongoing, completed, or surpassed by standardization management tools such as EDSIS, EDSTAR, bilateral defense standards, and greater standardization management cooperation with NATO, defense standardization bodies, civil standards bodies, etc.

▌ Worked with EDA and its contractor on assessing *The Role of European Industry in the Development and Application of Standards*. MSHT scoped the study, evaluated the contractor's 85 recommendations, and identified mitigating actions along with action owners. Much of MSHT's output satisfied many of the concerns expressed by industry.

▌ Helped EDA and its contractor identify potential solutions to problems experienced by nations in accessing standards.

▌ Worked with NATO to provide solutions to problems experienced by nations monitoring the implementation of NATO STANAGs.

▌ Assisted CEN-CENELEC with developing the Stakeholder Forum for Defense Procurement Standardization and with pursuing a fast-track procedure for preparing a European standard for "selection of standards and standard-like documents for defense products and services—order of preference."

The Way Forward

It makes good business sense for nations to continue to work collectively toward improving standardization management internationally and projecting those improvements into national processes. Therefore, it is anticipated that multilateral cooperation will continue in key areas such as the development of EDSTAR, EDSIS, and bilateral defense standards and the improvement of working relationships with industry and civil standards bodies. The MSHT is uniquely positioned to play a major part in this cooperation.

Through standardization management cooperation, nations will reap many benefits: cost savings; higher quality standards; enhanced standards selection guidance for project managers; greater awareness, visibility, and resolution of standardization problems, some of which affect battlefield operations; greater use of civil standards, with a resulting reduction in defense standards; improved MOD/industry partnerships in the development and application of standards; joint equipment collaboration; reduction of barriers to trade; enhanced battlefield interoperability; and reduced risks to the battlefield operatives and the sustainability of their equipment.

About the Author

Dave Wilkinson is the UK MOD's international standardization manager and represents the UK at the senior NATO and EDA standardization committees for whom standardization in support of interoperability is of prime importance. He also chairs the MSHT and has a leading role in the development of bilateral defense standards and the EDSIS, whose long-term aim is to provide a portal for all defense standardization management issues. ✳

EU Defense Procurement Directive

Directive

27 Teams Under One League?

By Isabelle Maelcamp

H How can the European Union (EU) teach 27 teams to play together? New, innovative rules for armaments acquisition sets a challenging tone across the EU.

The 27 member countries of the EU are taking steps to improve the European defense marketplace, which is currently fragmented into a patchwork of 27 national rules and regulations and marked by different procurement practices. In 2009, the EU member states approved a new law (Directive 2009/81 on defense procurement[1]) aimed at providing more transparency and competitiveness in supplies, services, and works contracts for the procurement of defense and security items. As guardian of the EU Treaty, the European Commission is now enjoying an enhanced enforcement role in supervising the defense contracts of member states. The provisions related to the choice of defense standards have raised concern among industry and non-European government stakeholders. The rationale behind the European acquisition reform process is linked to the desire by European institution authorities to extend to the defense area the aspects of the EU single market and, in this way, to bring defense products under EU Community law.

EU Defense Procurement Law

Directive 2009/81 will regulate how contracting authorities in EU member states purchase defense and security equipment. The directive, proposed by the European Commission in 2007, was debated in the parliaments and administrations of the 27 member states and was finally approved in 2009. The deadline for transposition of the directive into national law was August 21, 2011. All EU defense and interior ministries will have to abide by the new law, even if they missed the August 21 deadline. Bidding procedures will be harmonized throughout the EU, and national preferences should be strongly reduced as a result of the EU directive. The directive addresses procurement procedures for armaments acquisition, as well as sensitive non-military security equipment. The directive sets specific rules for the defense and security sectors, an area that was, until recently, considered politically taboo and excluded from European integration. Directive 2009/81 is also expected to increase transparency by requiring publication of defense contracts in the EU official journal.[2] The aim of this directive is to increase competition and to prevent systematic sole-source procurement or non-competitive procurement from preferred national suppliers. With this new regulation, the European Commission intends to address protectionist trends in the European defense marketplace: most defense procurement contracts were excluded "almost automatically"[3] from EU law because the member states usually invoked an article in the EU Treaty to award contracts domestically. The exemption from EU Community law was based on the assumption that the use of EU procurement law would undermine their essential national security interests, a right enshrined in the EU Treaty under Article 346.

Although the EU directive does not include specific rules on industrial compensation schemes (offsets), it is actually making illegal, under EU law, all indirect offsets arrangements that do not pertain strictly to a specific defense contract. Industry and awarding authorities are still struggling to understand the limits between allowed and prohibited offsets under the new rules, but this area is certainly one of the most important consequences of Directive 2009/81. Through a series of innovative provisions, the European Commission intends to open up defense markets down the supply chain by boosting competition at the level of subcontractors.

No "Buy European" Preference

The directive does not contain a "Buy European" clause, and it leaves open to EU member states the decision to invite non-EU bidders into the procurement process. Fourteen EU member states (all major arms-producing and –purchasing countries) enjoy a bilateral Reciprocal Defense Procurement agreement with the U.S. government, ensuring that bidders will be treated equally in each other's procurement processes, without favoring domestic suppliers.

Decisions on the choice of the right standard are an important aspect of the procurement process, because there is no capability without interoperability and standardization is the main tool to achieve interoperability.

Contesting Award Decisions

Directive 2009/81 includes provisions for bidders to contest contract award decisions, providing U.S. companies a way to officially lodge a complaint to the European Commission if they believe the directive has been violated during the procurement procedure. The European Commission can launch investigations in defense contracts either on its own initiative or based on a complaint from an aggrieved bidder. The main legal challenge procedure can still be undertaken at the national court level, but defense contracts covered by the directive will come under the jurisdiction of the European Court of Justice. Decisions by the European Court supersede all national court judgments. This aspect will prove to be a reliable recourse if U.S. suppliers experience problems with proposing U.S. products with U.S. technical specifications when they bid on European contracts requiring European standards.

Standards Provisions in the EU Directive

Decisions on the choice of the right standard are an important aspect of the procurement process, because there is no capability without interoperability and standardization is the main tool to achieve interoperability. In the directive, the proposed order of preference[4] for the selection and use of standards is linked to the origin of the standard: national civil standards transposing European standards, then European technical approvals, followed by common civil technical specifications, national civil standards transposing international standards, and finally, other international civil standards. At first sight, this may seem in contradiction to the "NATO Framework for Civil Standards," which focuses on selection criteria based on transparency, accessibility, effectiveness, relevance, market acceptance, and development process, as opposed to geographic origin. But this order of preference has not been specifically designed for the defense sector; it is, in fact, derived from the EU directive that governs public procurement contracts in the general (civil) sector (EU Directive 2004/18) and utilizes the same language in its article on technical specifications.[5]

Equivalence?

Directive 2009/81 obliges each reference to be followed by the term "or equivalent" and states that in order to guarantee interoperability, technical requirements should be drawn up either by a reference to such technical specification or in terms of performance or functional requirements. In practice, it means that bidders can propose a product with a standard they can present as being equivalent to the one required by the contracting authority. The directive includes a safeguard clause, which states that "the technical specifications cannot refer to a specific mark or source, a particular process, or trademarks, patents, types or a specific origin with the effect of favoring or eliminating certain undertakings or certain products." The language of this clause was also copied from the civil procurement Directive 2004/18 and, in the past, has successfully served as the basis for a number of contract award challenges. Directive 2009/81 further underlines that a contracting authority cannot reject a bid on the grounds that it does not comply with the technical specifications if the bidder offers an equivalent solution.

This order of preference has caused concern among American stakeholders, who feared their bids may not be considered. But once the transposition of the EU directive into each national law is completed, it will remain to be seen how, in practice, those provisions will be implemented and applied, because EU directives offer some relative flexibility of interpretation.

The success of the European Commission's initiative will greatly depend on its political willingness to challenge the practices of member states that will be considered incompatible with Directive 2009/81. Ultimately, it will be up to the European Court of Justice to determine the boundaries of what is acceptable under "essential security interests."

[1]Directive 2009/81 of the European Parliament and of the Council (on the coordination of procedures for the award of certain works contracts, supply contracts and service contracts by contracting authorities or entities in the fields of defense and security), July 13, 2009, http://ec.europa.eu/internal_market/publicprocurement/rules/defence_procurement/index_en.htm.

[2]*Tenders Electronic Daily* (online version of *Supplement to the Official Journal of the European Union*), http://ted.europa.eu.

[3]EC Staff Working Document, "Annex to the Proposal for a Directive," p.13, http://ec.europa.eu/internal_market/publicprocurement/docs/defence/impact_assessment_en.pdf.

[4]See Article18 of Directive 2009/81.

[5]See Article 23 of Directive 2004/18 (on the coordination of procedures for the award of public works, supply and services contracts), http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:134:0114:0240:EN:PDF.

About the Author

Isabelle Maelcamp is senior commercial specialist at the United States Mission to the EU in Brussels, Belgium. She is the U.S. Department of Commerce's expert on EU public procurement issues and EU regulatory developments in the area of defense. She counsels U.S. government officials and U.S. defense associations and companies, both in Washington and in Brussels. Since 2006, she has been leading the U.S. government interagency effort to develop a coherent response to defense-related regulatory developments of the European Commission. This work, in particular, has focused on Directive 2009/81 and European reforms in arms transfer licensing processes.
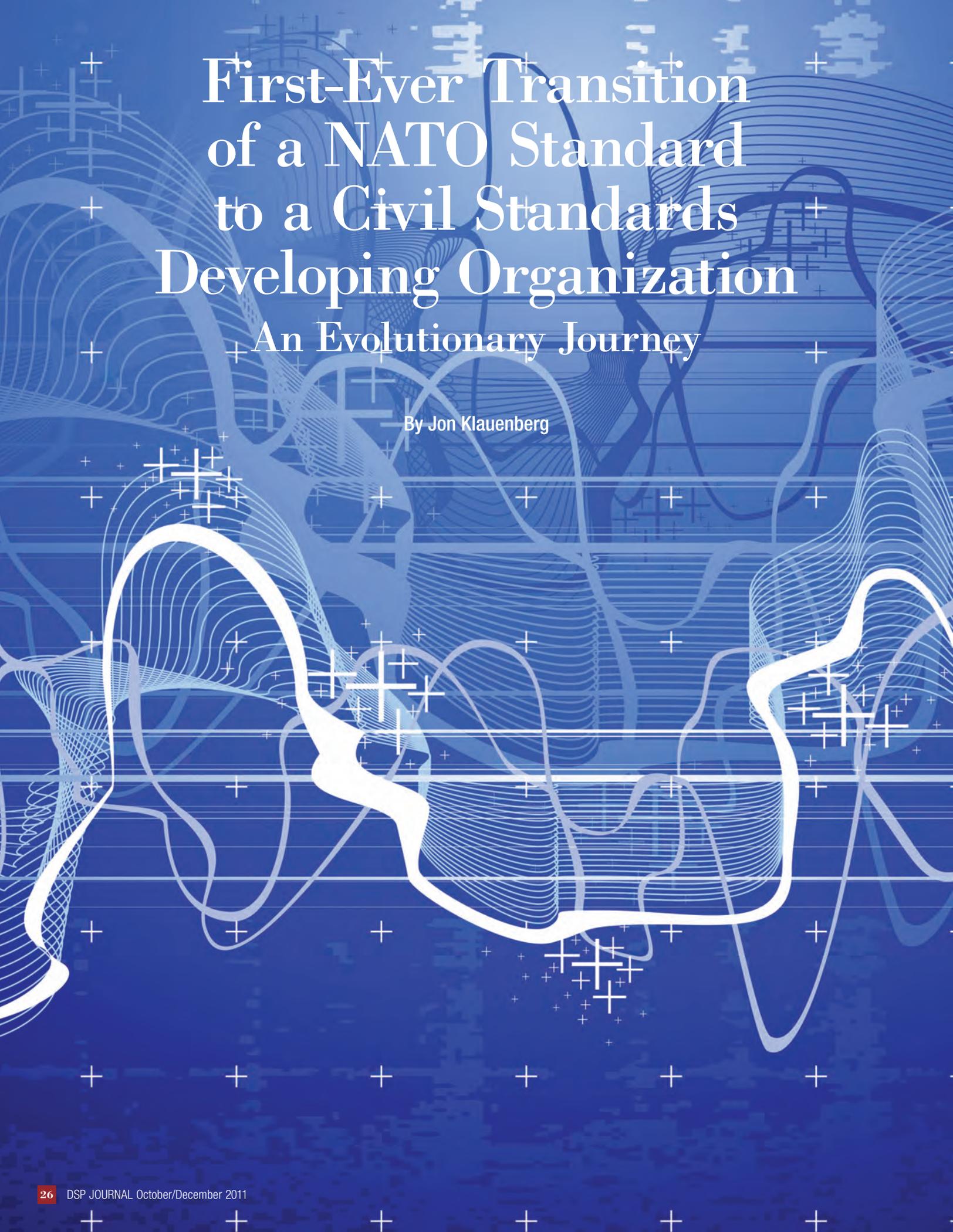
First-Ever Transition of a NATO Standard to a Civil Standards Developing Organization

An Evolutionary Journey

By Jon Klauenberg

"I am very glad to establish this new relationship with IEEE, which constitutes the basis for the very first transfer of a NATO STANAG to a civil Standards Developing Organization….For the first time in NATO's 60 year-old history, a STANAG will be converted into a civil standard that will meet civil and military requirements."

—Vice Admiral Juan A. Moreno, Director, NSA

"It will benefit the international community through the use of our proven and trusted development methodology that is open to participation from all corners of the globe."

—Judith Gorman, Managing Director, IEEE-SA

Readers of the *Defense Standardization Program Journal* are familiar with the standardization of operational policies, materiel, systems specifications, and performance measures. Another important area is standardization of safety and occupational health (SOH) practices. Standards for protecting personnel from hazards due to overexposure to chemical, biological, or physical agents are key elements of military force protection and should be key elements of any acquisition. SOH standards enable safe fielding of new technologies and are essential to interoperability. This article describes the evolutionary process that led to the first-ever transition of responsibility for a NATO SOH standard covered by a standardization agreement (STANAG) to a civil standards developing organization (SDO). That standard addresses the protection of personnel from the hazards of electromagnetic (EM) energy.

Limiting Exposure to Electromagnetic Energy

One would be hard pressed to find military equipment that does not use some form of EM energy. Standardization of personnel exposure limits to EM energy within DoD has been a tri-services effort for over 50 years. The services combine research, medical, operational, and standardization expertise at the Transmitted Electromagnetic Radiation Protection (TERP) Working Group (WG), which reports to the Deputy Under Secretary of Defense for Installations and Environment through the DoD SOH Committee. Although some standards define individual characteristics of single parts, the EM SOH standards span the entire EM spectrum. Essentially, within the overarching safety standard are multiple standards limits differentiated by characteristics of frequency, emitted and absorbed power, pulse shape, and duration of personnel exposure. Each of the exposure limits is continually reassessed and revised as new bioeffects data become available. EM exposure standards are living documents and, in a sense, the "size, shape, and substance" of EM safety standard components evolve as science and technology advance. Revisions are major actions taking several years to evaluate hundreds of new peer-reviewed scientific articles. New review committees are at work well before the last edition is published.

Transitioning a DoD Standard to an International Civil Standard

One of the TERP WG's products was DoD Instruction (DoDI) 6055.11, "Protecting Personnel from Electromagnetic Fields" (August 2009). When the previous editions of the instruction had been developed, the TERP WG relied heavily on the C95.1 series of standards developed by the Institute of Electrical and Electronics Engineers (IEEE) International Committee on Electromagnetic Safety (ICES). Similarly, for the 2009 edition of the instruction, the TERP WG recognized that the increased complexity of bioeffects data required the participation of subject matter experts (SMEs) beyond DoD. Multinational involvement was critical to acceptance and harmonization with allied nations. The 2009 edition of DoDI 6055.11 adopted, by reference, the IEEE/ICES C95 series of non-government standards (NGSs). This first-time use of an NGS for DoDI 6055.11 conforms to the Office of Management and Budget Circular A-119 revised guideline for federal agency implementation of the National Technology Transfer and Advancement Act of 1995 (Public Law 104-113). The act directs all federal government agencies to use, wherever feasible, standards and conformity assessment solutions developed or adopted by voluntary consensus standards bodies in lieu of developing government-unique standards or regulations.

The IEEE/ICES is an international SDO within more than 125 participants—from government agencies, universities, industry, and the public and from 14 disciplines, including medicine, epidemiology, biology, biophysics, physics, electrical engineering, and risk management—from 25 countries. IEEE/ICES leverages international resources, bringing the world's leading EM research, technical, and standardization experts into the development process. Furthermore, the IEEE C95 series of standards have been approved by the American National Standards Institute, which accredits SDOs that follow the principles of balance, openness, due process, and consensus among a diverse range of stakeholders.

Setting the Stage for a NATO Transition to Civil Standards

DoD's adoption of the IEEE standard for DoDI 6055.11 set the stage for several far-reaching steps in international standardization through the NATO Standardization Agency (NSA). NATO STANAGs are to be reviewed every 3 years and revised, reaffirmed, or canceled. Usually the revision/update is a relatively uncomplicated endeavor bringing SMEs together for no more than four drafting meetings. STANAG 2345 Edition 3, "Evaluation and Control of Personnel Exposure to Radio Frequency Fields— 3 kHz to 300 GHz," was last promulgated in February 2003 and should have been reassessed by 2006. However, the review of STANAG 2345 was delayed due to the publication, by the European Commission (EC) on Worker Safety, of "Proposed Directive of the European Parliament and of the Council on the minimum health and safety require-

ments regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields) (XXth individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC)." That directive was slated to become European Union (EU) law in April 2008.

EU member nations of the NATO Electromagnetic Environmental Effects Radiation Hazards Working Group (E3-RADHAZ WG) noted that their militaries would be required to follow the new directive instead of NATO STANAG 2345. Non-EU NATO members indicated that they would not adopt the proposed directive due to several operational impacts of the overly restrictive limits. Other stakeholders such as NATO operational experts, SOH standards setters, industry, and the medical community (with regard to magnetic resonance imaging) also expressed concern that several exposure limit values proposed in the directive were unnecessarily restrictive and would have a negative effect on operations and interoperability, curtail use of valued medical procedures, and potentially create other safety risks. In response to stakeholders' concerns, the deadline for transposing the directive into EU legislation was delayed from April 2008 to April 2012.

Opening the Door to the European Commission

The 4-year delay in transposing the EC directive opened a window of opportunity for NATO to gain access to the EC on Worker Safety as a stakeholder in the ongoing review. The NSA director gained that access by contacting the director of the EC Directorate-General for Employment, Social Affairs and Equal Opportunities. The SME designated to serve as the NATO stakeholder representative has participated in numerous meetings of the advisory group briefing the EC on the effects on military operations of several exposure limits proposed in the directive. Several operational experts from NATO nations have shown that unnecessarily restrictive limits will increase risk to personnel due to degradation or shutdown of necessary systems. For example, the Netherlands Head of Delegation to the E3-RADHAZ WG demonstrated that one proposed reduction in allowed limits would put the entire deck of a frigate off limits. That, of course, would have been a huge new risk to safety.

Eventually, the issue had to be elevated. At a meeting between the NSA deputy director and the EC director of Employment, Social Affairs and Inclusion, the custodian of STANAG 2345 explained the problem and the proposed solutions. Ultimately, the EC director agreed to include a derogation (waiver) stating that the directive

> shall not apply to the armed forces in Member States where an equivalent and more specific protection system such as NATO standard STANAG 2345 is already in place and implemented. Member States shall inform the Commission of the existence and effective implementation of such protection systems when notifying the

transposition of the provisions of this Directive into national legislation in accordance with Article 14.

The waiver is expected to remove the legal obstacle to acceptance of a NATO STANAG and facilitate ratification and continued interoperability.

Transitioning NATO Standards to Civil SDOs

NSA had begun a formalized effort to coordinate with civil SDOs, and the NSA Civil Standards (CS) Coordinator was looking for a suitable STANAG to transition from NATO to a civil SDO. STANAG 2345 was selected. The next step was obtaining approval for the transfer from the NSA Medical Standardization Working Group (MedSTD WG), which had responsibility for the STANAG. After being briefed on the planned process for the transfer (now part of Allied Administrative Publication 3-J, "Production, Maintenance and Management of NATO Standardization Documents") and discussing concerns about the loss of NATO control, the working group was assured that final approval for adoption of the civil standards would be with NATO and that the STANAG 2345 custodian and any interested NATO EM SMEs could participate in the standard's development.

NATO Framework for Civil Standards Requirements

■ Develop standards that are widely recognized and used in NATO and Partnership for Peace nations.

■ Use open, transparent consensus procedures in development of standards and due process in adjudication of comments or complaints from materially affected parties.

■ Develop standards that are relevant to NATO standardization requirements.

■ Be recognized as developing standards of high technical quality and global relevance.

The European Committee for Standardization (CEN) contacted the NSA Civil Standards Management Working Group in October 2007 and recommended that the European Committee for Electrotechnical Standardization (CENELEC) function as the NGS body to receive STANAG 2345 and take responsibility for updates. However, in a marketing survey to identify European SDOs that could set voluntary consensus-based EM exposure standards and meet NATO CS requirements, CENELEC responded that under current parliamentary law, it was prohibited from setting exposure standards. This setback required a second marketing survey, which included the IEEE. The only SDOs that responded affirmatively were the International Electrotechnical Commission (IEC) and IEEE. However, IEC functions under the same prohibition against setting exposure limits that blocked CENELEC from responding and, therefore, was eliminated from consideration. The only responding SDO able to set voluntary, consensus-based EM exposure standards and meet NATO CS requirements was the IEEE.

An added benefit of working with IEEE was that members of ICES had participated in drafting previous editions of STANAG 2345 as well as in NATO Advanced Research Workshops on radio frequency safety standards. The STANAG 2345 custodian and the NATO CS Coordinator prepared a technical cooperation agreement between NATO and IEEE, which was signed on May 14, 2009. This was followed by a specific agreement between IEEE and NATO for IEEE/ICES to assume responsibility for and ownership of the development of a military workplace-specific SOH standard limiting personnel exposure to electromagnetic fields. The standard will be covered by NATO STANAG 2345.

Managing the Cost of Doing Business with Civil SDOs

Adopting civil standards comes with a price. Unlike the freely available DoD standards, civil standards must be purchased. This was problematic for NATO nations that would now be required to buy multiple IEEE-NATO C95 standards. STANAG 2345 was one of the first STANAGs to be placed on the NATO public access site, but that would end with the publication of the new IEEE-NATO standard, which would carry the regular IEEE prices. European developers and users of EM exposure standards indicated that they would not consider using the costly IEEE standards. Leaders of the TERP WG negotiated for, and the services funded sponsorship of, the first-ever release of the ICES C95 standards on the IEEE "Get Program" public website (http://standards.ieee.org/about/get/). The IEEE/ICES chair estimated that making the standards freely available worldwide will save military, industry, commercial, and public users an estimated $4.5 million during the 5-year performance period (May 2011–May 2016). The potential for unlimited access facilitating harmonization toward a global standard is expected to enhance interoperability.

Summary

Going civil in an international standardization environment requires agreements to be drawn, competing regulations and standards to be addressed, costs to be managed, and accessibility to be assured. Entrusting the development of EM safety standards to the leading SDO leverages the expertise of the standards setters, maintains currency, reduces costs, and ensures force readiness and force protection. These actions will ensure safe operations guidance that minimize operational impacts, advance international harmonization, and facilitate ratification of NATO STANAG 2345 under revision by the IEEE.

About the Author

Dr. Jon Klauenberg is a member of the Radio Frequency Radiation Branch, 711th Human Performance Wing, Air Force Research Laboratory. He served as the custodian of STANAG 2345 for 18 years. He has directed several NATO Advanced Research Workshops and chaired NATO Research Technology Organization task groups on EM energy bioeffects and standards. He is a member and previous chair of the DoD TERP WG and has been a member of IEEE/ICES for more than 20 years.

NATO Revises Configuration Management Guidelines

By NATO Configuration Management Action Team

Smart defense is about building security for less money by working together and being more flexible. In NATO, it applies also to configuration management (CM), one of the key management processes during the life cycle of all systems. CM is also one of the oldest management processes known to man. After all, the pyramids could not have been built without the five pillars of CM: planning, identification, change control, status accounting, and audit. All those blocks of stones, cut upstream and brought down the Nile, had to fit. CM had to be used to make them fit.

Because CM is such an ancient process, almost everything smart that is to be said about CM has already been said many times, in many languages, and in many ways, but always covering the same core process attributes. In the United States, we have had MIL-STD-973, "Configuration Management," and MIL-HBK-61, *Configuration Management Guide*, and we currently have GEIA-649, "National Consensus Standard for Configuration Management." In NATO, CM regulatory documents consist of two standardization agreements (STANAGs) and seven Allied Configuration Management Publications (ACMPs), which contain CM requirements for multinational joint contracts. The overlap in the content of these and other documents is huge; the differences often verge on "angels dancing on the head of a pin."

In 2010, the NATO Life Cycle Management Group, Allied Committee 327 (AC/327) assembled a group of CM subject matter experts from nations and NATO organizations to review and revise the STANAGs and ACMPs. The group—the Configuration Management Action Team (CMAT)—was given two major assignments: make the NATO guidance useful and extend the guidance through the full project life cycle.

The seven ACMPs were intended to be invoked in contracts and, like MIL-STD-973 in DoD, were expected to ensure that suppliers executed CM in a standard way. When the CMAT surveyed the nations about their use of the ACMPs in contracts, the results were disappointing. But in essence, the results also mirrored the current post-acquisition reform pattern in DoD, a pattern that allows programs to do "what made sense" rather than mandating one-size-fits-all boilerplate in contracts.

The CMAT undertook a lengthy, challenging effort to compare the ACMPs to the major CM publications, both civil and military. In the significant discussions, and even heated debates, that followed this foundational work, the team hammered out several key concepts. The first, and most critical, was that the current emphasis on "contractual CM" was wrong. The emphasis needs to be on enterprise-wide life-cycle CM—which is the acquirer's job. In essence, the most important step is for a program to define its own through-life CM process. This notion quickly got named the life-cycle configuration management plan, or LCMP. (Figure 1 depicts the NATO business model for configuration management.) Without an LCMP, suppliers, who come and go over time, need not

Figure 1. NATO Business Model for Configuration Management
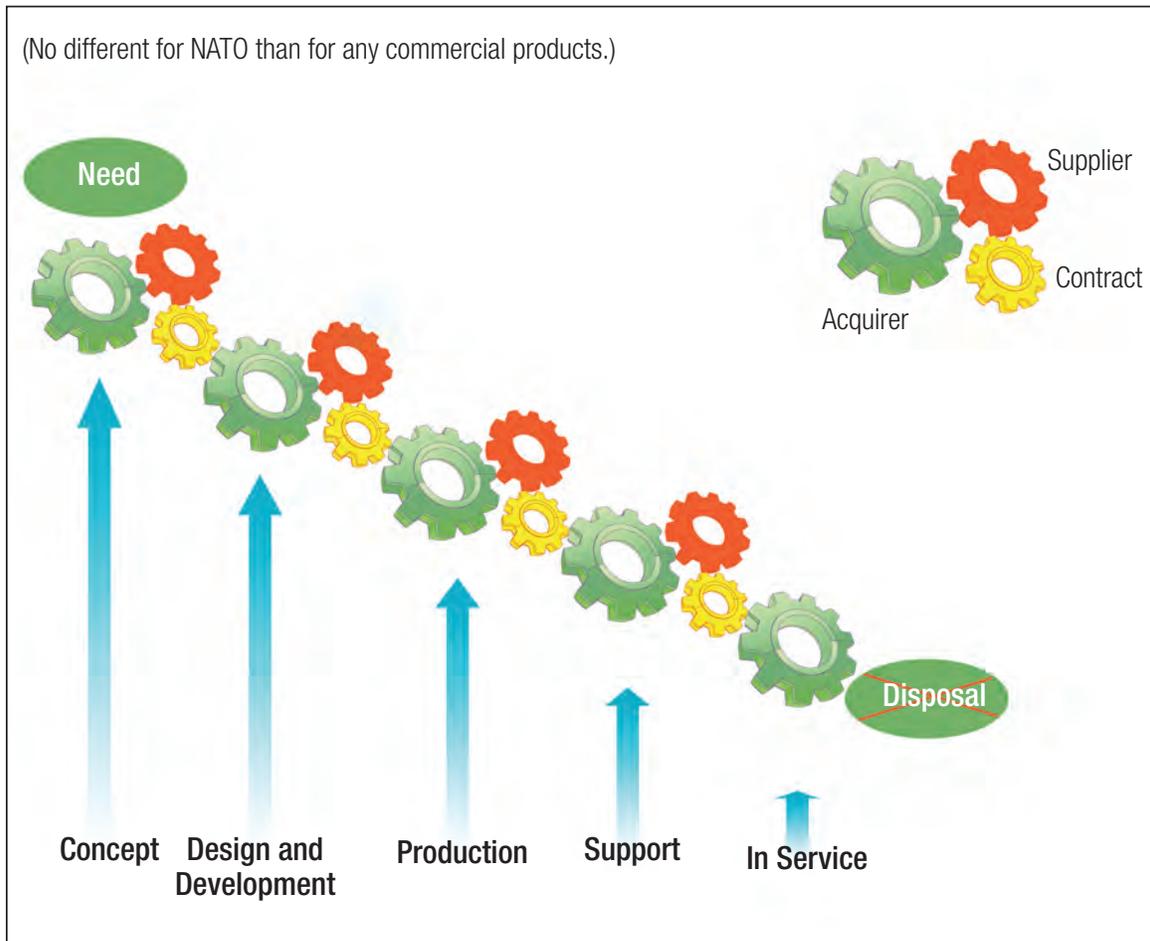
conform to any restrictive contract requirements. Compliance to boilerplate require-ments, which are disconnected from the program, would add zero value, at a huge cost. The team agreed that absent an LCMP, the contractual requirements should come from the simplest, most concise guidance on CM that would apply to any player through the life cycle. The team also agreed that contractual requirements should be built up, on the basis of program-specific life-cycle needs, rather than following the old, and failed, style of tailoring massive sets of boilerplate.

The second key concept was that CM is the process of managing blocks of information that define the system of interest at any given time in the life cycle. This is crucial in un-derstanding the way the CMAT now looks at such topics as software, electronic data in-terchange, and even status accounting. Every additional constraint on a supplier that needs to be in the contract is, essentially, program specific. For example, the CM process itself need not care whether something is a computer software configuration item (CSCI), only that it is a configuration item (CI). The program, in its architecture, realiza-

tion, and subsequent life-cycle management steps, may need to differentiate CSCIs. It may even need certain specific ways of recording CSCIs for future in-service upgrades. But all of those reasons, and all of those specific requirements, are driven by the LCMP and should be based on LCMP specifics. Data exchange protocols should similarly be driven by the life-cycle product data environment defined in the LCMP, as should change control, status accounting, and other traceability functions. The generic, universally needed CM process is not about the contents of the information blocks.

The third key concept agreed to was that NATO's singularly most important message to the supplier, and needed in the clearest contract language, was about delegation of authorities. The team's review of current standards revealed a consistent confusion of roles in the CM process. With the exception of GEIA-649, most standards are weak on separating acquirer and supplier functions. For example, a functional configuration audit must be the responsibility of the acquirer, because only the acquirer can validate the design against the end user's requirements. A supplier can be asked only to provide support (resources/facilities); it cannot be held responsible for the audit.

Other examples abound, such as in "rules" for the selection of CIs, when in fact, in real life, the supplier is generally asked to propose CIs, but the acquirer makes the decision on the basis of the system life-cycle needs (which may or may not always be reflected in the dozen rules of thumb listed in most standards).

With this foundation, the team proceeded to consider the path forward. One constraint was the NATO policy to use civil standards whenever possible. Another was that the "solution" needed to be applicable in all life-cycle stages and to all types of contracts. Finally, the architecture of any new NATO STANAG on CM needed to be consistent with the key concepts developed earlier.

To carry out its charge, the CMAT determined that it needed to develop two new ACMPs: ACMP 2100, to make the NATO guidance useful, and ACMP 2009, to provide guidance for government program/project managers on life-cycle CM and on building the contractual requirements for a project on the basis of the LCMP. Both ACMPs will clearly separate the roles of the acquirer and the supplier. In addition, in accordance with the newest NATO procedures for publications, the team needed to prepare a new STANAG to record the agreement by nations to use the new ACMPs.

For ACMP 2100, the CMAT selected ISO 10007 as the civil standard that would be the "platform" for contractual language. The team chose that standard for several reasons. First, ISO 10007 describes the CM process in basic, universal terms, without any embedded project-specific details or subject matter expert biases. To put it another way, the CM functions and roles defined in ISO 10007 are independent of life-cycle phase or role. Second, ISO 10007 describes the CM process in a way that any player—regardless of life-cycle stage, industry sector, or contract size—can carry out. Third, ISO is a best practices source in the global marketplace and is automatically available in the native languages of member nations.

The team faced a minor challenge in the way ISO 10007 is worded, but a global change in ACMP 2100 makes the advisory "should and could" into contractual "shall and must." In addition, the team replaced the ISO 10007 references to "life cycle of the product" with "contract." The logic is simple enough. The supplier cannot be held responsible for the indeterminate lifetime of the product, only for outcomes during the period of the contract.

Revision of the NATO CM guidelines has been, and continues to be, a challenging, serious effort. The rationale that the CMAT used to develop the architecture and the planned products can be summed up in a few words:

❙ ISO 10007 is the global language for CM in a global market.
❙ The CM problem is organic to defense organizations, not industry. If standardization is lacking, it is in defense, not individual contractors. Defense organizations drive organic costs via the program-to-program variability in our own CM process and via too many contractual requirements.
❙ Tailoring boilerplate requirements has been tried, and failed. If we do not know what we want, we cannot tailor the requirements. If we do not have our own house in order, we cannot expect results through contract compliance.

- In the absence of "smarts," acquirers should require only the minimum from suppliers to avoid wasting resources.
- CM is the management and control of information. A configuration is defined by information (not by forms).
- CM is not system engineering, logistics, testing, or quality assurance.
- The LCMP must form the basis of what is needed (to be given to the supplier at the beginning of the contract) and to be returned to the acquirer (at the end of the contract).

ACMP 2100 is in its 7th draft revision and nearing completion. Copies are available from the CMAT, and requests and comments are welcome.

The difficult task of compiling ACMP 2009, the guidance to government program/project managers, will be started soon. Our work also will include, of course, formal coordination and approval of the STANAG and the two ACMPs throughout NATO. Completion is planned for December 2012.

The team has made every effort to stay connected to other CM initiatives, such as a possible TechAmerica resurrection of MIL-STD-973 and a CM survey in cooperation with the P3 Ingenieurgesellschaft (Technische Hochschule Aachen and Fraunhofer Institut), and has even established a LinkedIn group forum on the web. Interested experts are invited to contact the CMAT chairman, their National Delegates to AC/327, or their representatives to the NATO Industrial Advisory Group.

About the Authors

The Configuration Management Action Team is chaired by Ronny Grønvold. Its members, who collectively have well over 100 years of experience, are national and NATO agency subject matter experts in CM and defense acquisition. Due to national regulations, not all members of the CMAT can be named, so we have named only the chairman. The contributions of the CMAT members to both this article and NATO's progress in improving the CM process are appreciated. ✷

NATO Adopts ISO/IEC 15288

By Steve Platovskiy
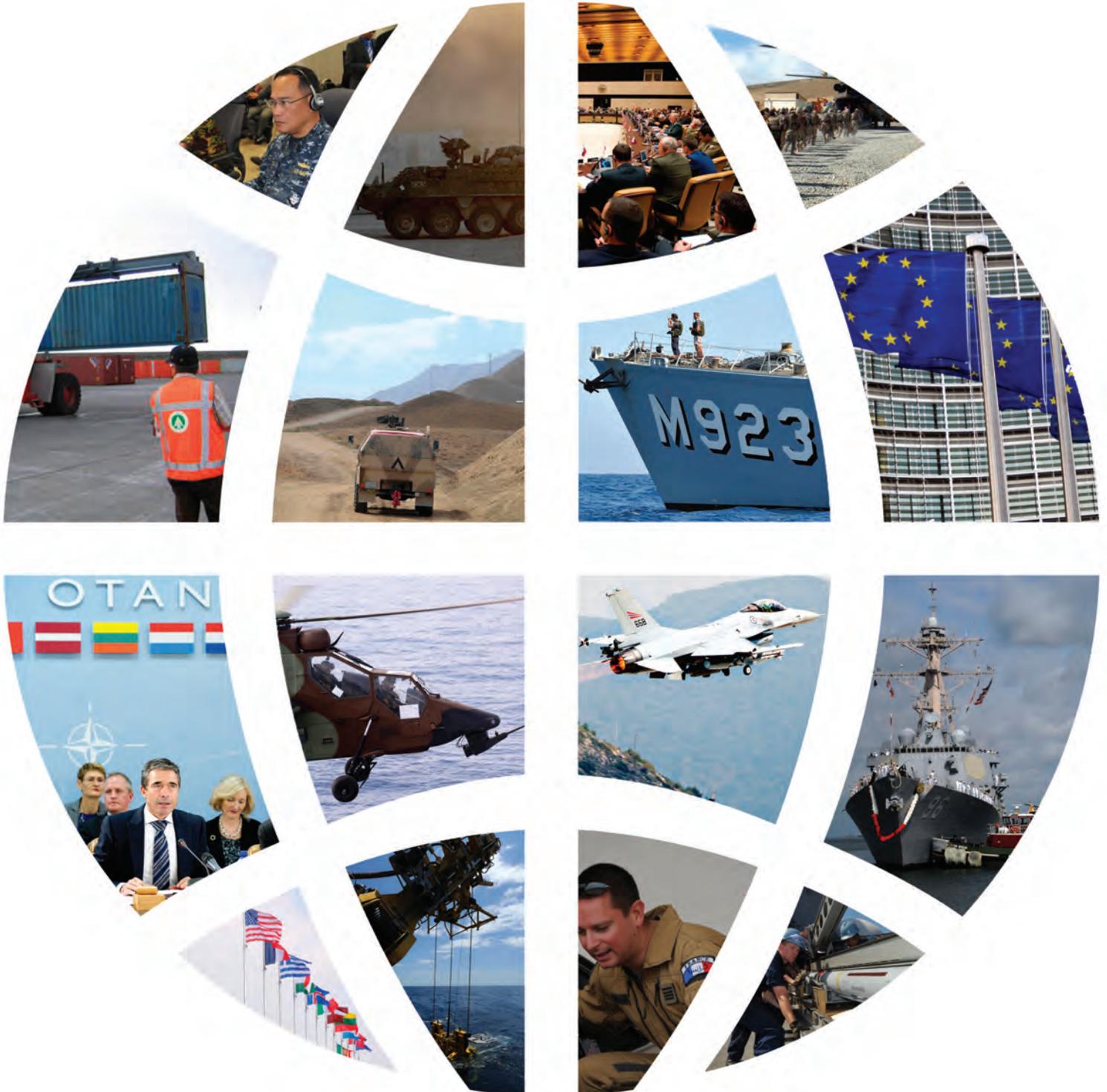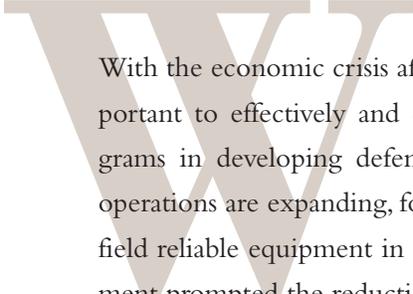
With the economic crisis affecting almost all nations, it is becoming more and more important to effectively and efficiently execute NATO, multinational, and bilateral programs in developing defense capabilities. Defense budgets are shrinking, yet NATO operations are expanding, forcing NATO to explore innovative and creative solutions to field reliable equipment in a timely manner within budgetary constraints. This environment prompted the reduction of NATO armament groups by 60 percent, which necessitated a restructuring and creation of the NATO Life Cycle Management Group, Allied Committee 327 (AC/327). The committee was specifically chartered to address life-cycle management issues within NATO and NATO nations.

In 2006, NATO approved the policy for systems life-cycle management (SLCM) to achieve an integrated approach of delivering defense capabilities for NATO operations. The aim of the policy is to optimize defense capabilities over the life cycle of a system by taking into account performance, cost, schedule, quality, operational environments, integrated logistics support, and obsolescence. It ensures that all of the through-life requirements of a system are formulated and taken into account at the outset to avoid surprises later in the life cycle. In addition, the NATO policy for standardization calls for the use of civil standards to the maximum practicable extent.

In accordance with the SLCM policy and the policy to use civil standards, NATO decided to use ISO/IEC 15288, "Systems and Software Engineering–System Life Cycle Processes," as the basis for implementing SLCM in the realization of NATO capabilities. NATO's way of implementing the policy was to adopt ISO/IEC 15288 using Allied Administrative Publication (AAP) 48, *NATO System Life Cycle Stages and Processes*. AAP-48 Version 1.0 was a NATO rewrite of ISO/IEC 15288:2002 and contained the ISO/IEC 15288 discussions about processes (agreement, organizational project-enabling, project, and technical), life-cycle stages, and system life-cycle models. The rewrite, however, was very time-consuming and did not add significant value over the original standard.

AAP-48 Version 2.0 will fully adopt ISO/IEC 15288:2008 as is, describing all of the processes, while adding applicable NATO-specific processes, notes, or reference documents to enhance the application of SLCM on NATO, multinational, and bilateral programs. One of the most essential additions to AAP-48 are the NATO publications, guidance, and tools to help armaments systems, services, and equipment meet NATO life-cycle, quality, and interoperability requirements. These documents have been developed by AC/327 working groups and represent lessons learned and best practices of NATO national experts in their specific fields. Currently, the two NATO processes that will be added to AAP-48 are the through-life traceability management process and the supportability process. These two processes are sporadically covered in ISO/IEC 15288:2008, but are important enough to highlight in AAP-48.

AAP-48 is enhanced by AAP-20, *Phased Armaments Programming System (PAPS)*, which focuses on the formulation of armaments systems' requirements and the management of an armament program throughout the system life cycle, including accelerated fielding (rapid acquisition) and technology insertion. AAP-20 describes the evolution of a NATO program in terms of stages, decision gates, stages' entry/exit criteria, and milestones. It also describes the creation of system life-cycle models by assembling and combining various stages, defining the appropriate decision gate elements (entry and exit criteria) required to control the transition between stages, and selecting the various processes for all stages. Finally, the document contains an "information toolbox" to assist program/project managers with implementing SLCM. One of the main components of the toolbox is the project management plan template, which provides managers with a consistent method for planning, executing, monitoring, controlling, and closing out programs and projects. Figure 1 illustrates the process for tailoring SLCM to a specific NATO program. It shows how a program uses the NATO-developed guidance documents, life-cycle stages, life-cycle processes, life-cycle models, PAPS management framework, and other enabling frameworks to formulate a plan of execution for the program.

Figure 1. NATO Conceptual Framework
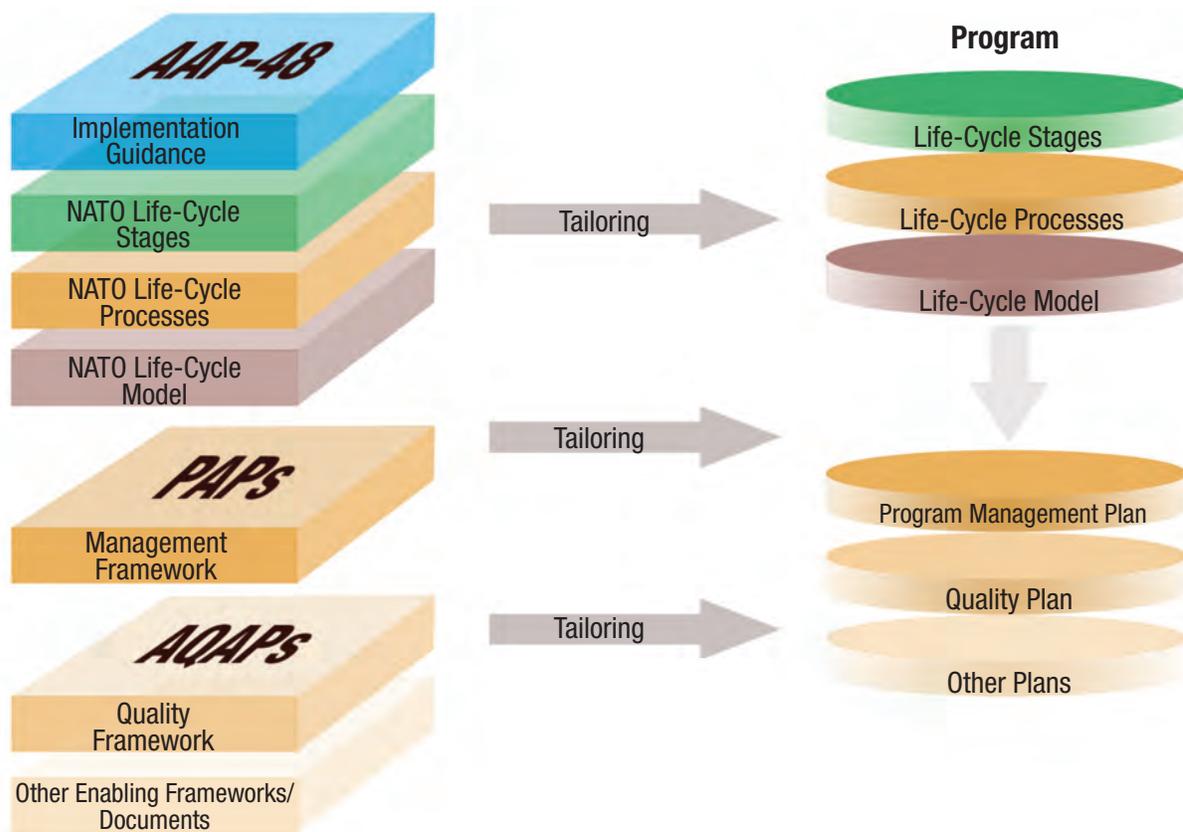
Notes: AQAP = Allied Quality Assurance Publication.

According to the results of an AC/327 survey, NATO nations are using most of the concepts of ISO/IEC 15288 for their SLCM processes. However, they are not using the AAP-48 and AAP-20 processes directly to implement SLCM. Therefore, AC/327 developed, and is in the process of ratifying, an SLCM implementation standardization agreement (STANAG) to ensure that NATO nations agree to apply the common set of system life-cycle management processes in armaments projects and programs supporting NATO's interoperability needs. The set of processes are the ISO/IEC 15288:2008 processes, at a minimum, plus the additional NATO-specific processes enumerated in AAP-48. AC/327 will ensure that the NATO life-cycle management policy implementation documents are useful and effective by soliciting feedback from all appropriate stakeholders, including NATO nations, agencies, and programs.

The current effort to reform and streamline NATO agencies offers a unique opportunity for AC/327 to standardize life-cycle management across NATO. AC/327 is positioning itself to develop an interface with the new agencies and ensure that the life-cycle management procedures, best practices, and guidance documents from the 14 agencies are effectively and systematically captured.

AC/327 also has been inviting NATO agencies to participate in the development of NATO publications within the AC/327 working groups. This infuses realism and best practices into the guidance publications.

DoD has long embraced the ISO/IEC 15288 standard for system life-cycle processes—particularly systems engineering technical processes and technical management processes—and has implemented the standard's adoption in the *Defense Acquisition Guidebook*. These processes link directly to ISO 15288 and are fully harmonized with the NATO SLCM concept. A little less noticeably linked are the project-enabling and the agreement processes, which are more nation dependent, but nevertheless are still compatible. The United States plans on ratifying the SLCM implementation STANAG in a continued effort to standardize life-cycle management processes and improve NATO life-cycle, quality, and interoperability requirements.

About the Author

Steve Platovskiy is a senior systems engineer in charge of systems engineering/systems integration for the Ground Combat Vehicle Project Management Office at the U.S. Army Armaments Research Development and Engineering Center at Picatinny Arsenal, NJ. Currently, he is the U.S. action officer to the NATO AC/327, supporting the Director for Mission Assurance in the Office of the Assistant Secretary of Defense for Research and Engineering. He is also the U.S. delegate to the working group updating NATO's implementation guidance for ISO/IEC 15288:2008. ✹

The European Standards Organizations

An Update

By John Ketchell and Christine Tack

CEN, the European Committee for Standardization, and CENELEC, the European Committee for Electrotechnical Standardization, are two of the three European standards organizations officially recognized by the European Commission. (The third is ETSI, the European Telecommunications Standards Institute, which produces standards for telecommunications and related areas.) The members of CEN and CENELEC are national standards bodies (National Electrotechnical Committees in CENELEC) in 31 European countries. Through technical committees and other groups of interested stakeholders, the European standards organizations provide platforms for the development of European standards and other consensus-based publications.

The appointment of a joint common director general for both CEN and CENELEC as of January 1, 2010, consolidated the close collaboration of the two organizations in the interests of the efficiency of the European standardization system. The CEN-CENELEC Management Center, located in Brussels, is in charge of daily operations—the coordination and promotion of all CEN and CENELEC activities. It also facilitates closer contact and better collaboration among sectors of industry for which the boundaries of old are quickly disappearing.

CEN and CENELEC themselves remain separate and sovereign entities, reflecting the fact that as regards their respective standards subjects, ISO and the International Electrotechnical Commission are responsible for the global standards.

CEN and Defense Procurement

CEN has, for the best part of a decade, actively supported the creation of a *European Handbook for Defence Procurement* (EHDP). This handbook contains references to standards and standard-like specifications commonly used to support defense procurement contracts, as well as guidance on selection of standards specifications to optimize effectiveness, efficiency, and interoperability.

With the CEN workshop, CEN had the perfect tool to meet the challenge put before it. The main advantage of a workshop—as opposed to a formally structured technical committee drafting new standards—is that it offers a flexible working platform, open to all stakeholders worldwide and allowing for rapid consensus building. The initial CEN Workshop 10 had its kickoff meeting in May 2002. Experts selected a list of standards and standard-like documents that are considered most suitable for defense procurement in the following domains:

- Nuclear, biological, and chemical detection systems
- Energy-producing materials
- Fuels and lubricants
- Batteries

- Packaging
- Electrical interfaces
- Electromagnetic environment
- Environmental testing.

The results were made available on a dedicated EHDP website (www.defence-handbook.org), which included a search engine allowing searches for selected standards according to reference, date of publication, standardization body, keywords, and topic.

In a second phase, a number of additional areas were covered:

- Armored land vehicle technology
- Ammunition
- Paints and coatings
- Fluid handling systems
- Life-cycle management—service life management
- Life-cycle management—technical documentation
- Quality of electric power supply/portable electric power generators
- Methodology and terminology.

A third phase, just completed, has added three new key areas:

- Dependability and safety (originally, reliability and availability)
- Waste management
- Disposal of munitions.

This third phase is the final one under CEN "management." Ownership of the handbook was officially handed over to the European Defense Agency (EDA) on June 9, 2011. The results of phase three of CEN Workshop 10 are being incorporated in the handbook, and the EDA will make it available as EDSTAR (European Defence Standards Reference). The revamped website will soon be accessible from http://www.eda.europa.eu/edstar. The EDA will carry out the long-term maintenance of EDSTAR, though it is envisaged that CEN and CENELEC will contribute extensively by providing the relevant updating information.

During the lifetime of CEN Workshop 10, there was active participation from Belgium, Finland, France, Germany, Italy, Norway, Spain, Sweden, Poland, Turkey, and the United Kingdom, as well as from the NATO Standardization Agency (NSA), the EDA, the Organization for Joint Armament Cooperation (OCCAR), and the Aerospace and Defense Association of Europe (Product Standards and Technical Specifications).

The newly upgraded handbook, as EDSTAR, will become an indispensable tool for governmental project managers but also for contractors having to select the most applicable best practice standards in defense projects.

Collaboration of Civil and Military Standards Organizations

The military standards community's need to reduce procurement costs as well as improve performance has made cost-effective standardization of critical importance and led to efforts to improve stakeholder participation in the standards process, but also—from a CEN-CENELEC standpoint—to improved synergies between the military and civil standards communities.

Considering this general desire to improve coherence, a new platform for stakeholder strategic discussions has been created. The platform—the CEN-CENELEC Stakeholder Forum for Defense Procurement Standardization—seeks to improve interaction between the military and civil standards communities in Europe and to act as a place for consideration of new standardization management activities to help facilitate defense procurement in Europe. Its main objectives are to do the following:

▍ Help improve synergies between military and civil standardization.
▍ Advise the defense procurement community on suitable civil standards available (from the European standards organizations or other sources) to meet specific needs for products and services.
▍ When no suitable standards exist, define arrangements to provide them, preferably internationally but if necessary in Europe, and make recommendations accordingly.
▍ Identify and give due consideration to issues when the defense community requires improvements in civil standards.
▍ Advise on any specific proposals for transfer of military standards into the civil field.
▍ Consider and advise stakeholders on any other strategic issues concerning standardization within the forum's overall focus.

The core participants include representatives of CEN and CENELEC national members with an interest, EDA, NSA, OCCAR, national defense standardization management organizations in Europe, and observers from the European Commission.

The forum meets two or three times a year, under the chairmanship of Phil Scammell from SELEX Galileo, Ltd., in the United Kingdom.

European Commission Initiatives

Among the subjects to be considered by the forum in its meetings to come is the review of the European standardization system. In June 2011, Antonio Tajani, vice president of

the European Commission, released a much-awaited communication and draft regulation concerning European standardization. The European Commission has embarked on this initiative to strengthen the system of standards setting in Europe through the

- enhancement of its cooperation with the leading standardization organizations in Europe (CEN, CENELEC, and ETSI);
- drafting of European standards with the help of organizations representing those most affected, or most concerned (consumers, small businesses, environmental and social organizations);
- recognition of global information and communications technologies standards that will play a more prominent role in the European Union; and
- increase of the number of European standards for services if there is a demand from business.

CEN and CENELEC welcome this initiative as a means of updating and upgrading the framework under which we are operating. That said, it would not be surprising if we had some reservations on the detail of the measures, which will now be the subject of wide debate.

The draft regulation is a legal measure, setting the framework for standards making throughout the European Union. It will replace previous legislation last renewed in 1998, although its roots go back to 1983. The communication contains accompanying advice to stakeholders, including the European standards organizations and their members.

The draft regulation will be subject to approval by the European Union member states and the European Parliament prior to adoption, a process that will extend into 2012.

Copies of the draft regulation and communication are available on the Commission website (www.ec.europa.eu); the first reactions of CEN and CENELEC are also available online (www.cen.eu or www.cenelec.eu).

Generally speaking, the review recognizes the strengths of the European system, while also seeking to improve stakeholder participation; the links between standardization, innovation, and research; and Europe's contribution to the international standards environment.

CEN and CENELEC are actively contributing to the debate on the new framework and will, in 2012, work on a long-term common strategy for the end of the decade.

About the Authors

John Ketchell and Christine Tack are both members of the European Committee for Standardization.

Mr. Ketchell directs the Innovation Department in the CEN-CENELEC Management Center. The Innovation Department provides a focal point for business development in new areas for standards making, including policies on major issues such as service standardization and defense procurement standards. Before joining CEN in 1997, he was responsible for external coordination of ETSI activities. In addition, he has been secretary to the European Information and Communication Technologies Standards Board from its inception.

Ms. Tack is a program manager in the CEN-CENELEC Innovation Department. She supports the secretariat of the CEN-CENELEC Stakeholder Forum for Defense Procurement Standardization.

Aerial Refueling
Continuing the Legacy as a Force Enabler

By Dexter Kalt

Aerial refueling's history in the air forces around the world is a long and colorful one. From crude but creative early experiments, it has evolved to become today's routine operation, enabling nonstop flights to start on one side of the globe and terminate on the other side. General Arthur Lichte, former commander of the Air Mobility Command, aptly captured the essential role of aerial refueling to modern airpower:

Air refueling operations continue to be amazing aerial feats, especially for people who witness the process for the first time.

For Air Mobility Command Airmen, we consider it simply part of what we do but, in reality, it is quite remarkable to have two aircraft meeting less than 50 feet apart at more than 20,000 feet above the ground traveling at speeds close to 400 miles per hour while a tanker replenishes another aircraft with the fuel necessary to continue the mission.

The amazement is even greater when one considers the first major air refueling operation happened 80 years ago when the Question Mark, a tri-engined Fokker C-2 aircraft with a crew of five, climbed into the southern sky Jan. 1, 1929.

Over the next seven days, the crew kept the aircraft airborne through air refueling from two three-man crews operating Douglas C-1 single-engine transports that had been transformed into tankers with the addition of two 150-gallon tanks to off-load fuel.

Combined, those historic tankers made 43 takeoffs and landings to deliver 5,660 gallons of fuel, 245 gallons of engine oil, storage batteries, spare parts, tools, food, clothing and mail during the Question Mark's 150-hour and 40-minute operation.

Today's tanker fleet continues to play the vital role of sustaining operations. Tankers underwrite our nation's ability to project power. Aircraft extend our reach to deliver the clenched fist of power to our adversaries, or the open hand of assistance to people in need.

Without tankers, our combat aircraft cannot reach their targets. Without tankers, our resupply aircraft and humanitarian relief materials cannot always reach their destinations. Without tankers, we cannot move our wounded warrior's non-stop from the battlefield to the U.S. for the medical care they need.

Combat crews often credit aerial refueling with saving their aircraft and their lives. One example is a mission in Southeast Asia in which five F-105 aircraft were coming off target, heading home. Nearly out of fuel, they rendezvoused with a KC-135 tanker. If one of the F-105s had taken time to fill its tanks, the others would have been lost. In a quickly devised plan, each receiver, in rotation, connected to the tanker, took

on enough fuel—fifteen seconds' worth—to fly a few more minutes, then gave way to the next aircraft. This rotation continued, the F–105s following the KC–135 like ducklings trailing behind their mother, until all aircraft were safely back at their base.

An aerial refueling takes place every minute of every hour of every day somewhere around the world. These missions extend military airlift range and response timeliness to support our forces and allies. Some are routine training, and others are in direct support of combat and peacekeeping efforts with NATO and other allies. Aerial refueling, a magnificent part of the U.S. military force structure, virtually an air force unto itself, was for many years an "invisible" foundation for the nation's original nuclear deterrent under the Strategic Air Command. Since those days, it has been the backbone for our response to major conflicts and natural disasters, as well as contributing to multinational peacekeeping efforts around the globe.

Although more than 19 other nations are involved in aerial refueling, their combined efforts and capability are not nearly as large as the U.S. Air Force's global tanker fleet. Volumes would be needed to describe the impact of aerial refueling in modern military operations and warfare. The mission successes and the unprecedented humanitarian efforts are legends.

Tankers and receiver aircraft are being added to air force inventories around the world: new nations—new aircraft—new equipment. It is a time of aerial refueling milestones and challenges. Perhaps not since those early days of aerial refueling have so many demanding questions been asked in regard to operational and technical interoperability, aircraft clearances, maintenance, and training—all those vital aspects of aerial refueling that must work perfectly, every time.

The Aerial Refueling Systems Advisory Group (ARSAG) has been a key enabler of aerial refueling. ARSAG is an open forum for addressing aerial refueling issues with experts in their aerial refueling fields:

▌ Operational and training procedures

▌ New aerial refueling concepts and ideas

▌ New technology and development

▌ Lessons learned

▌ Standardization recommendations

▌ Guidance documents for aerial refueling boom/receptacle and probe/drogue tanker and receiver aircraft.

ARSAG has played a mammoth role in advancing aerial refueling.

ARSAG Background

ARSAG is a not-for-profit joint military-industry professional association dedicated to improving all aspects of aerial refueling worldwide. The group was chartered in 1978; today, its formal name is ARSAG International. It is the world's recognized workplace for technical and operational aerial refueling topics. ARSAG meetings have been held in Australia, Canada, Germany, Spain, the United Kingdom, and the United States.

ARSAG's international scope brings together the U.S. Air Force, Navy, Marine Corps, and Army with NATO and allies from around the world to promote the common good, ensure the safety of aerial refueling systems, and benefit joint military operations. Twenty nations' military and industry organizations participate in ARSAG.

ARSAG—A Lesson in Cooperation

ARSAG is committed to aerial refueling standardization through the cooperation of the world's operational and technical experts. ARSAG's annual conference assembles representatives of international military and industry organizations for 3-plus days of intense focus on aerial refueling.

The ARSAG annual conference, generally held in the spring, features distinguished keynote and guest speakers, up-to-the-minute briefings on global aerial refueling topics, and interactive focus groups. In addition, the NATO Air-to-Air Refueling Panel holds its meeting at the ARSAG conference.

ARSAG Workshops/Joint Standardization Board for Aerial Refueling Systems

ARSAG has been chartered by the Office of the Under Secretary of Defense as a DoD Joint Standardization Board (JSB) for Aerial Refueling Systems under the DSP. As mandated by DoD, the JSB is charged with achieving common, mutually satisfactory solutions to shared requirements and problems.

In its official advisory capacity, ARSAG develops recommendations for aerial refueling standards, technical and operational procedures, military specifications, NATO standardization agreements (STANAGs), and designs for aerial refueling systems. Following a system of internal review and external coordination through affected agencies, ARSAG Recommendation Documents can go on to become inputs to a

- NATO document, such as a standardization recommendation, STANAG, or Allied Technical Publication (ATP);
- DoD standardization document, such as a military specification or military standard; or
- other DoD document, such as a joint service specific guide.

The three ARSAG workshops/JSB meetings held during the year are led by experts in each working group's field. Working groups may evolve as new topics/documents are introduced. ARSAG workshops/JSB meetings are "roll-up-the-sleeves" working sessions to solve problems and to shape recommendation documents on aerial refueling topics. Interested individuals or organizations may suggest topics for workshop consideration. Below are current working groups and their topics:

- Group 1: ARSAG Aerial Refueling Boom/Receptacle Guide

- Group 2: ARSAG Aerial Refueling Probe/Drogue Guide (Loads and Failure Modes Analysis) and recommendations for MIL-PRF-81975C, "Aerial Refueling Coupling Specification Revision"

- Group 3: Aerial Refueling Lighting, Markings, Formation Aids Guide and recommendations for STANAG 7218

- Group 4: Aerial Refueling Maintenance Guide, Aerial Refueling Procurement Matrix Guide, and Aerial Refueling Maintenance Training Guide

- Group 5: Aerial Refueling Tanker/Receiver Clearance Recommendations

- Group 6: ARSAG Aerial Refueling Test Methods Guide.

History of ARSAG Accomplishments

Below are some of ARSAG's accomplishments:

- Performance and interface survey

- U.S. Air Force/U.S. Navy memorandum of understanding

- KC-135 aerial refueling upgrades

- Revised STANAG 3447 (coupling insert and nozzle fix)

- ATP-56 procedures document support of NATO (1986–present)

- Multipoint drogue KC-135/KC-10 support

- Test and evaluation instrumentation guide

- Aerial refueling pressures definitions and terms guide

- U.S. and NATO/allied countries revision of ATP-56(B)

- ARSAG aerial refueling issue paper, "Availability of Technical Control Interface Data Used for Aerial Refueling (AR) Equipment Compatibility Assessments," forwarded to the U.S. Transportation Command J3

- Aerial refueling pressures definitions and terms (5-year review)

- Recommendations for STANAG 7191

- Recommendations for STANAG 3447, Edition 5

- Recommendations for STANAG 7215, "Air-to-Air Refueling Signal Lights in Hose and Drogue Systems," Revision.

Summary

Although aerial refueling remains an amazing feat, it is part of the daily airpower routine made possible by the ever-continuing work of the engineers, operators, designers, and manufacturers who are a part of ARSAG. Successful aerial refueling missions result from cooperative efforts between industry and military, often between different military services, and even between different nations. ARSAG, through its conferences and the ARSAG workshops/DoD JSB for Aerial Refueling Systems, offers the only open, working, multiservice, international forum dedicated exclusively to aerial refueling. ARSAG facilitates working relationships. Its recommendations promote enhanced aerial refueling safety and efficiency. ARSAG "spreads the word" about aerial refueling opportunities and innovations.

In a recent tribute, General Ray Johns, commander of the Air Mobility Command, told this story of the power of aerial refueling:

> On March 17th, 2011, when the United Nations Security Council Resolution established a No-Fly Zone and authorized all necessary measures for the protection of civilians in Libya, Mobility Airmen were ready.

> Within hours of the first call, the 313th Air Expeditionary Wing (AEW) stood up in Western Europe and began refueling the fight with KC-135s and KC-10s. Hundreds of Airmen from Active Duty, Guard and Reserve bases across the Continental U.S. and Europe came together to form a single team. Within days, Airmen assigned to the 313th AEW began calling themselves "The Calico Wing." When their commander, Brigadier General Roy Uptegraff from the Pennsylvania Air National Guard, looked out on the ramp, he saw tail flashes from so many different units, he remarked, "This wing looks like a calico cat." And it stuck.

> As of Sept. 1st, the Airmen of "The Calico Wing" have flown more than 20,000 hours and transferred more than 110 million pounds of fuel in support of Operations Odyssey Dawn and Unified Protector. This couldn't happen with just aircraft and aircrews, though. Airmen from every career field—maintenance, finance, contracting, security forces, personnel, intelligence, weather, civil engineering, medical, air traffic control, and more—formed an expeditionary team that ensured our grey tails were always available for thirsty fighters.

> I couldn't be prouder of how Mobility Airmen across the Total Force left at a moment's notice and became part of a mission greater than themselves. They knew it was more than just transferring fuel. This mission was about helping the Libyan people. Their unified effort kept a ruthless dictator from killing his own citizens. At the end of the day, this is exactly why we serve.

ARSAG truly is a joint military-industry professional group recognized throughout the international aerial refueling community. It is the go-to organization for jointly addressing all aspects of aerial refueling equipment, standards, specifications, operations, procedures, and interoperability. It is a positive, powerful force within aerial refueling.

About the Author

Dexter Kalt is the executive director of ARSAG International. Previously, he spent 32 years at Wright-Patterson Air Force Base, working on every aspect of aerial refueling. Among other things, he developed the Universal Aerial Refueling Receptacle Slipway Installation. In 1978, Mr. Kalt, recognizing the need to improve communication among the military services, industry, and other entities, including international aerial refueling users, cofounded ARSAG with Strategic Air Command Headquarters. ✳

Choosing Standards
Based on Merit

By Helen Delaney
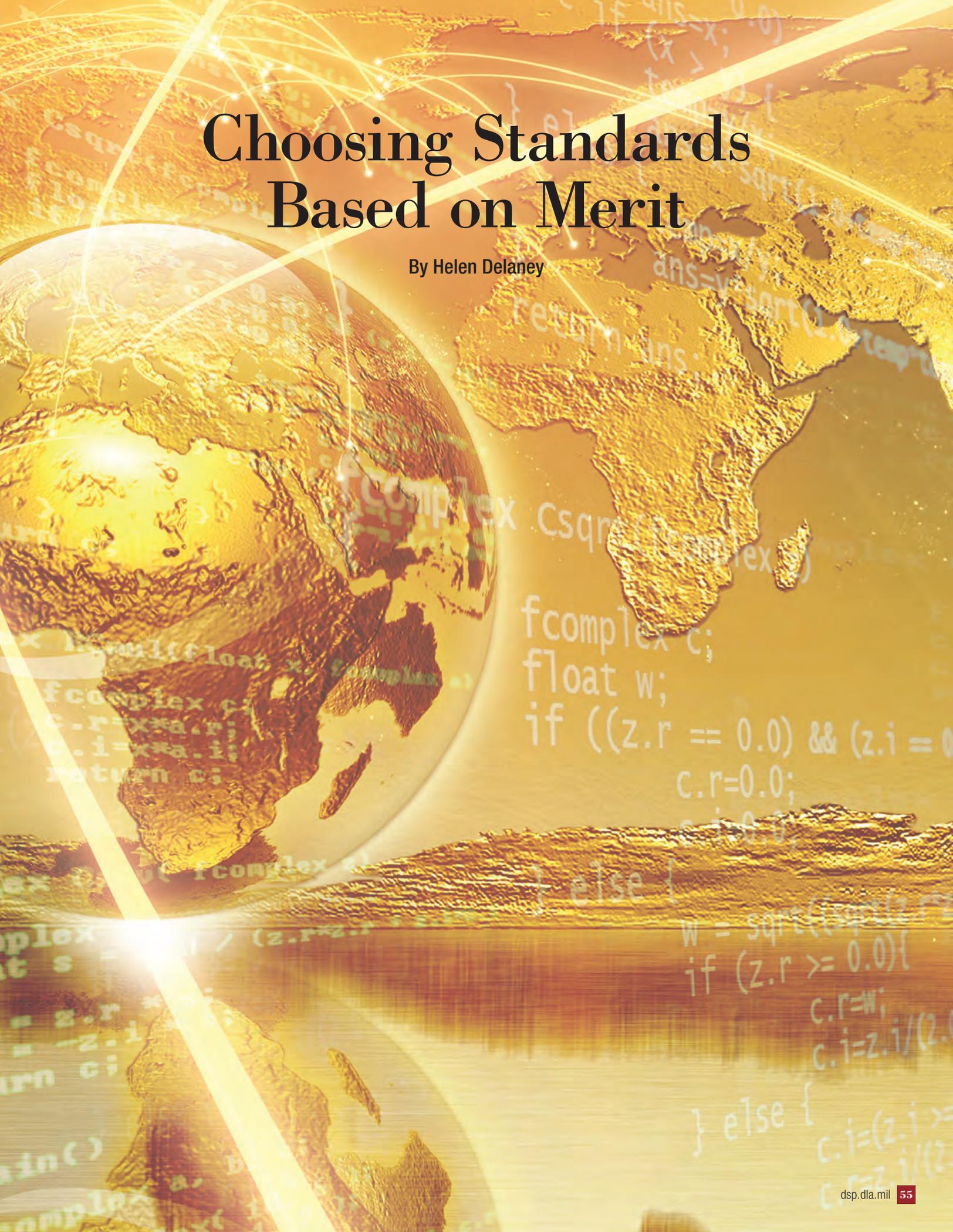
IThis article contains excerpts from *Choosing Standards Based on Merit: Liberalizing Regulation, Trade and Development* (available as a free download). It was published in the May/June 2011 issue of *ASTM Standardization News* and is reprinted here with the permission of ASTM International.

International standards are the cornerstones of a liberalized trading system. When used as the basis for technical regulations and developed according to principles recommended by the World Trade Organization (WTO) Committee on Technical Barriers to Trade (TBT),[1] they are less likely to create unnecessary barriers to trade. International standards can also increase efficiency, enhance the quality of life and transfer technology from developed to developing countries.

The TBT Agreement delegates certain responsibilities to international standards: (1) they must function effectively and appropriately; (2) they must fulfill legitimate objectives; and (3) they must be relevant. In this context, relevance is associated with regulatory and market needs as well as scientific and technological developments. In the global market, relevance is associated with a standard's ability to solve real problems in real time.

A standard's relevance is arguably related to the extent to which it is used. Technology that originates in standards developing organizations domiciled in the United States is used in countless measure by WTO members in the efficient production and testing of goods, in international trade and in technical regulations. The widespread application of these standards is plainly evident from the most cursory examination of the technical regulations of member countries, and it is clear that an ample supply of effective, relevant international standards has been produced by a network of standards developing organizations, i.e., standards used in regulation, trade and in building the capacity of developing countries around the world emanate from multiple sources.

Multiple sources of international standards are especially useful to WTO members. They provide regulators with choice and flexibility while reducing the need to base technical regulations on national standards. One of the most important features of the U.S.–based standardization system is that it is open to every nationality; its technical committees abound with experts from around the globe. No less important is its commitment to the TBT principles for the development of international standards[2] and the Code of Good Practice.[3]

The U.S.–based standardization system produces many international standards that do not exist elsewhere. It produces standards and test methods that are unique and standards that have given rise and safety to many of civilization's best endeavors,

from the construction of basic infrastructures to the exploration of space. These standards have become so deeply rooted in the texture of the world's economies that their absence or the lack of ongoing revisions to their technology would destabilize large areas of international trade and significantly reduce the quality of life on this planet.

This is a guide to a deeper understanding of this system, and the opportunities it offers regulators and exporters to use standards that are best suited to perform specified tasks, whether they are local or universal. A comprehensive map of the immense flow of technology from this system into the world at large is not practical; indeed it is not possible. This paper offers only a representational view of that flow, using examples taken from a large, diverse network of stakeholders.

The significance of the global usage of standards, whatever their origin, must be acknowledged, viewed and weighed alongside the notion that the form taken by standardization models must take precedence over universal acceptance and relevance. The more pertinent question(s), in terms of a liberalized trading system, are (1) whether or not a standard facilitates or poses an obstacle to trade, and (2) whether or not a standard is effective and relevant to market needs and conditions.

What Is Merit?

Merit used as a noun is defined as "worth or excellence; high quality"; defined as a verb, merit means "to earn as a reward or punishment; deserve."[4]

Assigning worth, or merit, to a standard is precarious at best, for what constitutes merit in the eyes of one may not constitute it in the eyes of another. In the case of merit, one size does not fit all.

That being said, there are general, or horizontal, positive attributes that can be assigned to a standard, whatever its technical objective. The assignment of merit can begin with the process that creates it. Here, there are accepted guidelines, such as the TBT Committee's Decision on Principles for the Development of International Standards.[5]

Other primary tests can be applied to a standard, also taken from accepted principles: the TBT Agreement, for example, requires that a standard be effective and relevant, and that it not act as a barrier to trade.

It can be argued that use is a benchmark of merit; that is, the standard has earned the confidence of a wide range of users. Users apply their own tests: Is the technology advanced? Does the standard produce highly reproducible results? Does it bring

about the desired level of change or increase in quality? Is it current and updated regularly? Does it meet the user's expectations? Will it open markets? Is it doable? A regulator might require that a standard carry a reasonable expectation of compliance or a credible rationale for its application. While some of these values may be anticipatory or subjective, a standard, in the most practical sense, is only as good as its user deems it to be. For the user, that can only be determined when the standard is applied and the results are calculated. Merit is an attribute, therefore, that is earned after the standard is in play.

While the concept of merit is important in the context of this paper, and while the direct or implied merits of standards are imbedded in the examples herein, the freedom to choose a standard based on performance, suitability, effects, i.e., its merits, is the key to liberalized regulation, trade and development.

WTO Technical Barriers to Trade Agreement

The TBT Committee, in its Decision on Principles for the Development of International Standards,[6] notes that, "bodies operating with open, impartial and transparent procedures, that afforded an opportunity for consensus among all interested parties in the territories of at least all members, were seen as more likely to develop standards which were effective and relevant on a global basis and would thereby contribute to the goal of the Agreement to prevent unnecessary obstacles to trade."

The U.S.–based standardization system recognizes the principles outlined in the decision of the TBT Committee as the ultimate authority on the development of international standards. Furthermore, it recognizes that U.S.–based standards developing organizations that apply these principles to their standards–setting process are developing standards that are effective, relevant and contribute to the goal of the agreement.[7]

In addition, the American National Standards Institute has accepted the Code of Good Practice on behalf of more than 200 standards developing organizations in the United States.

Relevance and Effectiveness

The TBT Agreement requires members to use relevant international standards, or the relevant parts of them, as a basis for technical regulations except when they would be ineffective or inappropriate means for the fulfillment of the legitimate objectives pursued.

The TBT Committee's Decision on Principles for the Development of International Standards also states, "international standards need to be relevant and to effectively respond to regulatory and market needs, as well as scientific and technological developments in various countries."

Ideally, industrial policy considerations, technical problem solving and market needs converge in an international standard. When one of these elements is out of balance, the resulting standard is more likely to be irrelevant, inappropriate and/or ineffective, i.e., it may be technically interesting or politically expedient, but it serves no real need. It may even act as a barrier to trade. When a standard satisfies only the objectives of a limited geographic or economic region, the internationality of the standard may also be called into question.

There are fields of technology and significant elements of trade where the international standardization organizations that are sometimes called formal or traditional supply only a fraction of relevant standards, and in some cases, none at all. For example, most Internet standards adopted by the Internet Engineering Task Force[8] or the World Wide Web Consortium[9] would not "qualify" (according to Raymund Werle, 2001)[10] as international standards on which regulations or other standards should be based. Few, however, would doubt their international application, universal acceptance and use.

A large volume of standards and testing methods that emanate from the U.S. system are transposed into the national portfolios of WTO members and/or are used as the basis for technical regulations; i.e., they play internationally significant roles in trade, they are imbued with the qualities of relevance, appropriateness and effectiveness, they facilitate trade, and they do not act as barriers to trade.

Adoption, Reference and Use

Governments use standards developed by voluntary standards developing organizations in several ways. Some of the most common methods are listed in Box 1 and illustrate the approach taken by the United States.

Adoption, Reference and Use of Standards in the United States

✳ Adoption: An agency may adopt a voluntary standard without change by incorporating the standard in an agency's regulation or by listing (or referencing) the standard by title. For example, the U.S. Occupational Safety and Health Administration adopted the National Electric Code by incorporating it into its regulations by reference.

✳ Strong Deference: An agency may grant strong deference to standards developed by a particular organization for a specific purpose. The agency will then use the standards in its regulatory program unless someone demonstrates to the agency why it should not.

✳ Basis of Rulemaking: This is the most common use of externally developed standards. The agency reviews a standard, makes appropriate changes and then publishes the revision in the *Federal Register* as a proposed regulation. Comments received from the public during the rulemaking proceeding may result in changes to the proposed rule before it is instituted.

✳ Regulatory Guides: An agency may permit adherence to a specific standard as an acceptable, though not compulsory, way of complying with a regulation.

✳ Guidelines: An agency may use standards as guidelines for complying with general requirements. The guidelines are advisory only; even if a firm complies with the applicable standards, the agency may conceivably still find that the general regulation has been violated.

✳ Deference in Lieu of Developing a Mandatory Standard: An agency may decide that it does not need to issue a mandatory regulation because voluntary compliance with either an existing standard or one developed for the purpose will suffice for meeting the needs of the agency.

Effectual Regulation

Ideally, international standards function as the basis of the regulations of multiple markets, facilitating trade and creating regulatory harmonization as well. In reality, the needs and capabilities of the economies of the world vary; and regulators must often improvise technical solutions to match national or local customs or capabilities. They may use standards from various sources, the relevant parts of standards, combinations of standards or modifications of standards. In other words, regulators routinely take pragmatic paths to regulatory destinations (see Boxes 2 and 3). The key to effectual regulation is flexibility and freedom of choice.

The Food and Drug Administration Modernization Act of 1997

One example of regulatory flexibility is employed by the U.S. Food and Drug Administration. The Food and Drug Administration Modernization Act of 1997 authorized the FDA to recognize voluntary consensus standards developed in an open and transparent process, such as those employed by U.S. domiciled standards developing organizations and the International Organization for Standardization (ISO). These standards can also be developed in a U.S. standards-based organization and adopted as an ISO standard. One such example, which is based on an AAMI (Association for the Advancement of Medical Instrumentation) original document, is ANSI/AAMI/ISO 11137, Sterilization of Health Care Products—Radiation.

Test Method for Evaluating Coatings Used in Pressurized Water Reactor Nuclear Power Plants at Simulated Design Basis Accident (DBA) Conditions

Issued by the China National Nuclear Corp. and published in the Nuclear Industry Codes and Standards in the People's Republic of China.

This standard was written based on two standards, American ASTM D3911-95, "Test Method for Evaluating Coatings Used in Light Water Nuclear Power Plants at Simulated Design Basis Accident (DBA) Conditions," and French standard NF T30-900-1996, "Color Painting and Varnish Test Method for Performance and Reparability of Coatings Used in Nuclear Industry at Design Basis Accident Conditions." Due to the similarities in theory and methodology of both standards and differences in characteristic test curve of temperature, pressure, spray solution and specimens, this standard combined the similarities of both above standards and listed the differences as selective choices for users. This standard is regulated by the China Institute for Standardization of the Nuclear Industry.

Conclusion

The ability to choose a standard based on its merits is inherent to progress, innovation and trade. The relative merit of a standard may be determined by the quality of its technical content and how it affects the flow of international trade. Technical merit is the key to health, safety, workable infrastructures, effectual regulation and the integrity of goods. In this regard, a standard may be judged by the quality of the technical reality it imparts to a product or process. The level of technical merit will be in direct proportion to the level of performance or reliability of the product or process in use.

Fairness is also a mark of merit. Technical excellence notwithstanding, a standard cannot be applied without effect or consequence. Standards, most especially international standards, must also be judged in the light of their intent, i.e., they must not be developed with the aim of purposefully disadvantaging competitors or economies.

Perhaps the greatest test of a standard's merit is the extent to which it is accepted and used. Despite the absence of a body of empirical knowledge, there is abundant evidence that the use of international standards from multiple sources is widespread and increasing.

Many regulators in nations that are in stages of development or emergence are keenly aware that the ability to choose the standard that can best bring about needed change is crucial, whether or not that standard is applied in its original form or modified to suit local conditions and capabilities. Many are choosing standards from the U.S.–based system and applying them with great success and enormous rewards.

The U.S.–based standards system represents, above all else, opportunity. Its dedication to inclusiveness accounts for the wealth of international talent and the universality of ideas that make its standards so often the choice of regulators and manufacturers around the world.

The standards strategy of the United States acknowledges the value of other systems and the value of any standard that has been produced in accordance with principles of international standardization as set forth by the World Trade Organization Technical Barriers to Trade Committee. In principle and in practice, it espouses flexibility, creativity and freedom of choice. The choice of standards based on merit is its watchword, as it has become for nations around the world.

References

1. Decision: G/TBT/1/Rev. 8, 23 May 2002.
2. Ibid.
3. See Annex 3 of the TBT Agreement.
4. *Standard Desk Dictionary*, Funk & Wagnalls, Harper & Row, Publishers.
5. Decision of the Committee on Principles for the Development of International Standards, Guides and Recommendations with Relation to Articles 2, 5 and Annex 3 of the Agreement G/TBT/1/Rev. 8, 23 May 2002.
6. Ibid.
7. See the U.S. Standards Strategy.
8. The Internet Engineering Task Force is a large, open, international community of network designers, operators, vendors and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet. It is open to any interested individual.
9. The World Wide Web Consortium (W3C) is an international consortium where member organizations, a full-time staff, and the public work together to develop Web standards.
10. Raymund Werle, Max Planck Institute for the Study of Societies, Cologne, Germany, "Standards and Standards Organizations in the International Free Trade Regime," presented at the Workshop on Standardization Research, Universität der Bundeswehr Hamburg, September 2001.

About the Author

Helen Delaney, a former diplomat and former ASTM Washington representative, is the president of Delaney Consulting, Inc., of Cambridge, MD. She has spent a full career in government relations, standards and conformity assessment, and she has more than 37 years of experience in the field. For 17 years she was ASTM's Washington representative and director of global affairs. In 1989, she started her own consulting firm. From 1995 to 1998, she suspended consulting activities to serve in a position newly created by the U.S. Department of Commerce's National Institute of Standards and Technology: standards attaché to the United States Mission to the European Union in Brussels, Belgium. Sponsored by the National Institute of Standards and Technology, she became a member of the Foreign Commercial Service and held the diplomatic title of first secretary. In this post she was an adviser on standards and conformity assessment to two U.S. ambassadors, among others. She resumed her consulting services in 1998; she specializes in standardization and conformity assessment issues and their relationship to regulation and international trade.

Program News

Topical Information on Standardization Programs

DSPO Director Named Chairman of the Standardization Management Working Group

On February 4, 2011, the NATO Committee for Standardization Representatives (CSREPS), on behalf of the Committee for Standardization (CS), approved the initial program of work for the Standardization Management Working Group (SMWG). Mr. Gregory Saunders, DSPO director, was selected to chair the SMWG.

The SMWG was chartered to take over the work of two existing working groups: Civil Standards Management Working Group, chaired by the United States, and Standardization Document Management Working Group, chaired by France. The SMWG's mission is to do the following:

❚ Assist the CS/CSREPS with implementing the NATO Policy for Standardization and related procedures on the production of NATO standards and the selection, implementation, and maintenance of civil standards within NATO

❚ Promote the use of civil standards and provide an effective framework to cooperate with standards developing organizations on NATO standardization efforts

❚ Facilitate continual, ongoing consultations and exchanges of information among NATO standardization experts and civilian subject matter experts on the development of standardization documents in support of alliance standardization efforts, with the aim of enhancing interoperability

❚ Propose, develop, and manage policy and procedures regarding the protection of intellectual property rights.

In short, the SMWG provides a forum for national experts and NATO personnel to coordinate views on standardization management within NATO. For more information about DSPO's involvement in the SMWG, please contact Ms. Latasha Beckman at 703-767-6872 or at latasha.beckman@dla.mil.

DSPO Participates in ESEP

DSPO is pleased to announce its first year of participating in the Engineer and Scientist Exchange Program (ESEP) by welcoming Mr. Mirko Sohn, a German engineer who will work for DSPO for 1 year on various standardization projects. The ESEP between the German Federal Defense Administration and the U.S. Armed Forces was established in 1964. The basis for this exchange is a memorandum of understanding, "Engineer and Scientist Exchange Program," signed by both nations. The aim of the agreement is to use the scientific and technical resources of both countries in an effort to realize common defense interests in the best possible manner.

Events

Upcoming Events and Information

April 24–26, 2012, McLean, VA
Spring PSMC Meeting

The Parts Standardization and Management Committee (PSMC), chartered by DSPO, will hold its spring meeting at LMI in McLean, VA (Washington, DC, metropolitan area). The agenda will include presentations on current parts management topics and breakout sessions for subcommittees to work specific tasks. If you are involved in some aspect of parts management and want to participate, contact Donna. McMurry@dla.mil or call 703-767-6874.

May 15–17, 2012, McLean, VA
International Standardization Workshop

DSPO will host an International Standardization Workshop in McLean, VA, in May 2012. This workshop is designed to present an overview of U.S. domestic and international standardization policies, procedures, and practices. Also, attendees will have an opportunity to learn more about U.S. participation in standardization and interoperability activities with allies and partners, including the American, British, Canadian, and Australian Armies Program; Air and Space Interoperability Council; European Defense Agency's Materiel Standards Harmonization Team; and NATO. The workshop is intended for federal government personnel, both military and civilian, as well as DoD contractors. Seating may be limited, so advanced registration is required. For more information, visit the DSPO website at www.dsp.dla.mil, or e-mail at mirko.sohn.gib@dla.mil.

August 27–30, 2012, New Orleans, LA
DMSMS and Standardization Conference

Mark your calendars now and plan to attend the 2012 Diminishing Manufacturing Sources and Material Shortages (DMSMS) and Standardization Conference at the Hyatt Regency New Orleans. Once again, the conference will include multiple tracks of topics, including one featuring topics relating to DSP and another on the Government-Industry Data Exchange Program. As the conference planning develops, key information will be posted on the DMSMS 2012 website: http://www.dmsms2012.com.

If you are involved in some aspect of parts management and are interested in being a first-time participant, please contact Donna McMurry at Donna.McMurry@dla.mil or call 703-767-6874.

People

People in the Standardization Community

Welcome

John Sofia assumed the role of the Naval Sea Systems Command (NAVSEA) Standards Executive in April 2011. He is division head of the Naval Systems Engineering Directorate's Technical Standards Group and NAVSEA lead for commonality.

Renrick Atkins joined Defense Logistics Agency (DLA) Energy in November 2011. Before joining DLA, he worked as a chemist at the NAVSEA Mid-Atlantic Regional Materials Laboratory under the Quality Assurance Branch. He also has experience in environmental, petroleum, and R&D laboratories assisting with new paint formulations for George Lucas, American film producer, while working with Beynon Sports Surfaces, Inc. He reformulated the edible film composition for William Wrigley Jr. Company during his time at TIC Gums, Inc. He will carry out Lead Standardization Activity (LSA) functions for DLA Energy (Standardization Code PS), for the Federal Supply Class (FSC) 9100 series (fuels, oils, and lubricants).

In October 2011, **Tom Kennedy**, of DLA Aviation, was promoted to chief of the Standardization and Organic Manufacturing Branch. Mr. Kennedy retired from the Air Force in 1996. He spent nearly 2 years as the operations manager of Industrial Galvanizers Virginia in Petersburg, VA, before joining the Defense Supply Center Richmond (now known as DLA Aviation) as a materials engineer in 1999. After stints in value engineering and sustainment engineering, he joined the standardization team, primarily working parts management issues, and was a key member of the Parts Management Reengineering Working Group. Later, he shifted his focus to parachutes (FSC 1670), bearings (FSCs 3110, 3120, and 3130), and liquid and gas flow, liquid level, and mechanical motion measuring instruments (FSC 6680).

Farewell

Margie Bleau of DLA Energy left in December 2011 to work with the Food and Drug Administration. She was a fuel and environmental chemist in the Product Technology and Standardization Division. Since 2005, Ms. Bleau performed the DLA Energy LSA functions for Standardization Code PS, which included the 9100 series FSCs.

In July 2011, **Gene Ott**, DLA Land and Maritime, retired with over 30 years of federal service. Mr. Ott started his federal service in the Army in March 1981. After his tour with the Army, he worked as an electronics engineer at Newark Air Force Base in Newark, OH. In August 1996, Mr. Ott began working in the Operation Support Directorate at the Defense Supply Center Columbus (now DLA Land and Maritime) in Columbus, OH. Mr. Ott worked in the passive devices group covering capacitors and resistors. He ended his career as an electronics engineer working at DLA Land and Maritime. He was responsible for the qualification of electronic filters, capacitors, resistors, and hoses. Mr. Ott was very dedicated and was driven to ensure our service members received the best and most reliable components available.

Robert Francolino, DLA Troop Support–Clothing and Textile (C&T), retired in July 2011 with 35 years of federal service. He started his career with the federal government in 1975 as a clothing designer in the Defense Personnel Support Center's Military Clothing Factory, where he was responsible for the quality and design of specific military clothing and equipment. He started in the Standardization Program Office in 1987 and was instrumental in the creation and maintenance of data tracking systems that mirror today's ASSIST. His level of expertise in product design was vital in maintaining the stringent requirements for clothing and textiles and ensuring that the warfighters' needs were met in terms of form, fit, and function. Mr. Francolino was the LSA for several FSCs relating to C&T items. We wish him a happy retirement.

In July 2011, **William Pfeiffer**, DLA Troop Support–C&T, retired with 35 years of federal service. A decorated Marine Corps Vietnam combat veteran, Mr. Pfeiffer started his civilian career in 1981 with the Defense Personnel Support Center (now DLA Troop Support) cataloging section. He was the legacy member of the standardization program team within C&T since 1981. As the standardization team leader, there was not a question regarding cataloging that he could not answer. Under his leadership, C&T has enjoyed many years of assured adherence to standardization program policy, which has been exemplary in the best DLA tradition. The knowledge that Mr. Pfeiffer amassed over his federal career about the standardization and cataloging program cannot be replicated. Mr. Pfeiffer was the LSA for several FSCs relating to C&T items. We will miss him.

Nancy Young, DLA Land and Maritime, retired at the end of December 2011 with 37 years of federal service. She began her career in the Technical Operations and Standardization Directorate of Defense Electronics Supply Center (now DLA Land and Maritime)

in November 1974. In June 1984, Ms. Young took a job assignment as a technical editor/writer at the Engineering Standardization Directorate (now the Operations Support Directorate) at DLA Land and Maritime. As the technical editor/writer, she served the DoD community for about 27 years keeping qualified products lists and qualified manufacturers lists current and accurate. We wish her a long and happy retirement. Her work has been exemplary in the best DLA tradition.

At the end of December 2011, **Kevin Dubinsky**, DLA Troop Support–Medical, retired with 31 years of federal service. After serving 4 years with the Navy, Mr. Dubinsky started working at Defense Personnel Support Center (now DLA Troop Support) as a mechanical engineer for the dental team. He progressed through several assignments within the Defense Personnel Support Center. In 1999, he became the standardization program manager at DLA Troop Support–Medical. We wish him a happy retirement.

Floree Whiters, DLA Troop Support–Subsistence, retired at the end of December 2011 with over 40 years of federal service. She started her federal career in South Philadelphia at Defense Personnel Support Center (now DLA Troop Support) in the Clothing and Textiles Standardization Directorate. She then moved into the Subsistence Directorate and was later promoted into the Subsistence Standardization Office, where she has been an integral part of a longstanding team. Ms. Whiters served as the DLA Preparing Activity (PA) for some 12 years in the Subsistence Directorate. Her PA work has been exemplary. We wish her well in retirement.

Randy Chandler, DLA Aviation, retired in December 2011 after nearly 45 years of federal service. He joined the Yorktown Naval Weapons Station in 1969 where he supervised the environmental test laboratory and a small machine shop. Base Realignment and Closure 1995 saw him move to Panama City, FL, with the Naval Coastal Systems Center. Then, in 1997, he was hired by the Defense Supply Center Richmond (now DLA Aviation). With Mr. Chandler's retirement, DLA Aviation's Standardization Branch is losing one of its best. He has been focused primarily on aircraft control cables and wire rope in FSCs 1640 and 4010.

Defense Parts Management Portal–DPMP

The DPMP is a new public website brought to you by the Parts Standardization and Management Committee (PSMC) to serve the defense parts management community.

The DPMP is a new resource, a new marketplace, and a "one-stop shop" for parts management resources. It is a navigation tool, a communication and collaboration resource, and an information exchange. It gives you quick and easy access to the resources you need, saves you time and money, connects you to new customers or suppliers, and assists you with finding the answers you need.

This dynamic website will grow and be shaped by its member organizations. A new and innovative feature of the DPMP is its use of "bridge pages." Organizations with interests in parts and components are invited to become DPMP members by taking control of a bridge page. Chances are good that your organization is already listed in the DPMP.

There is no cost.

Explore the DPMP at https://dpmp.lmi.org. For more information, look at the documents under "Learn more about the DPMP." Click "Contact Us" to send us your questions or comments.

communication

navigation

collaboration
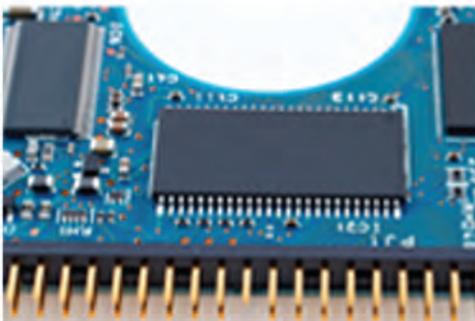
Upcoming Issues
Call for Contributors

We are always seeking articles that relate to our themes or other standardization topics. We invite anyone involved in standardization—government employees, military personnel, industry leaders, members of academia, and others—to submit proposed articles for use in the *DSP Journal*. Please let us know if you would like to contribute.

Following are our themes for upcoming issues:

Issue	Theme
January/March 2012	Standardization Stars
April/June 2012	Tri-Agency Standardization
July/September 2012	Non-Government Standards

If you have ideas for articles or want more information, contact Tim Koczanski, Editor, *DSP Journal*, Defense Standardization Program Office, 8725 John J. Kingman Road, STP 5100, Fort Belvoir, VA 22060-6220 or e-mail DSP-Editor@dla.mil.

Our office reserves the right to modify or reject any submission as deemed appropriate. We will be glad to send out our editorial guidelines and work with any author to get his or her material shaped into an article.