SD-9
Defense Standardization Program
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DoD Guidance on Participation in the Development and Use of Non-Government Standards

Contents

Foreword

Congress passed the National Technology Transfer and Advancement Act of 1995 to promote the commercialization of technology and industrial innovation. The Act requires all federal agencies and departments to use technical standards that are developed or adopted by voluntary consensus standards bodies, unless such use is impractical or inconsistent with law. To implement this Act, the Office of Management and Budget issued Circular A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities" (February 1998). The Circular reiterates the Act's requirements for the use of voluntary standards and provides guidance to promote consistent application of the Act across federal agencies and departments.

It is Department of Defense (DoD) policy to participate in the development of non-Government standards (NGSs) and to adopt and use them to the extent feasible, practical, and economical. DoD 4120.24-M, *Defense Standardization Program Policies and Procedures*, requires that DoD first consider using an existing NGS or support revising or developing an NGS to meet DoD needs, in preference to using military or federal documents whenever feasible and consistent with law and regulation.

The use of NGSs supports the DoD commercial acquisition goals, conserves DoD resources, supports the U.S. industrial base, allows for dual-use technology, and improves DoD's mobilization capabilities.

In recent years, dramatic changes brought on by acquisition reform, the growing number of consortia standards, the emphasis in industry for global standards to support global markets, and expanded development and use of third-party certification and qualification have raised questions about DoD participation in the development and use of NGSs. This document provides a better understanding of DoD's NGS policies and procedures and addresses the most commonly asked questions.

If you have any questions or comments about this document or DoD's NGS policies, please contact the Defense Standardization Program Office, 8725 John J. Kingman Road, ATTN: J-307, Stop 6233, Fort Belvoir, VA 22060-6221 or e-mail DSPO@dla.mil.

Gregory E. Saunders
Director
Defense Standardization Program Office

Background

Purpose

The purpose of this document is to promote more effective DoD use of NGSs and participation in their development. To achieve this purpose, this document

- Describes the different types of NGSs and the organizations that develop them,

- Provides general guidance and practices relative to DoD's involvement in developing or using NGSs,

- Identifies criteria that should be considered regarding requirements and verification before developing an NGS or replacing an existing military or federal document with an NGS,

- Clarifies the roles and responsibilities of DoD personnel when participating in NGS activities, and

- Explains the meaning of DoD adoption of an NGS and its importance.

This document provides guidance to three key stakeholders:

- DoD participants (and their management), so that they may have a more thorough understanding of non-Government standards bodies (NGSBs), and their roles and responsibilities as participants in NGSB activities

- NGSBs, so that they might better understand DoD's practices and policies, especially related to the DoD NGS adoption process. NGSBs will gain understanding of the Defense Standardization Program (DSP) and learn how to interface with DoD in the development, adoption, and use of NGSs

- Defense industry and individual firms involved in standards development activities, so that they may consider the DoD market in their application of research and development (R&D) investment and the development of dual-use products.

History

On July 1, 1952, Congress passed the Defense Cataloging and Standardization Act (Title 10 U.S.C. Sections 2451–2456). This law is the legislative basis for the DSP. The DSP has promoted NGS adoption since 1962, when it brought the first 12 NGS documents into the system. Since then, the DSP has worked closely with NGSBs to help shape and use their documents where applicable to military purposes.

Military systems and equipment have long used NGSs and commercial components, when appropriate. The DSP focus sharpened in the 1990s when MilSpec Reform reemphasized DoD's use of commercial standards for acquisition. Under MilSpec Reform, the Department canceled more than 9,600 military standardization documents without replacement. DoD also canceled another 3,500 documents superseded by NGSs, performance specifications, commercial item descriptions (CIDs), or guidance handbooks.

Federal Policy

Unlike most foreign governments, the U.S. Government neither operates nor finances a national standards body. Yet, the Government, with the strong support of the private sector, is an important player in the standards process as a user, regulator, and contributor. The U.S. Government is concerned that the process for developing standards be transparent, fair, and effective for all concerned and that it represents U.S. interests effectively.

The National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104-113, and Office of Management and Budget (OMB), Circular A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities" (1998), direct federal agencies to use voluntary standards in lieu of Governmental standards whenever feasible. The legislation asks

agencies to promote participation by their personnel in standards development to ensure the standards created are usable by both federal agencies and the private sector.

OMB Circular A-119 contains four goals:

- Eliminate the cost to the Government of developing its own standards and decrease the cost of goods procured and the burden of complying with agency regulation

- Provide incentives and opportunities to establish standards that serve national needs

- Encourage long-term growth for U.S. enterprises and promote efficiency and economic competition through harmonization of standards

- Further the policy of reliance upon the private sector to supply Government needs for goods and services.

The NTTAA designates the National Institute of Standards and Technology (NIST) to coordinate the efforts of the agencies to meet statutory requirements and to report annually on federal use of standards.[1]

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[1] For more information about NIST, NTTAA, and OMB Circular A-119, visit the website www. standards.gov.

DoD Policy

DoD policy for NGS participation and use and the procedures for adoption are in DoD 4120.24-M, *Defense Standardization Program Policies and Procedures*. It is DoD policy to use NGSs and to participate in NGSBs to better access and integrate with commercially developed technologies and products. In using NGSs, the Department gives preference to performance standards (when they satisfy requirements) in lieu of prescriptive standards.

The Department is committed to increased defense contractor productivity and improved acquisition efficiency. Standardization documents play an important role in this context and must be selected and properly applied with this objective in mind. Within this acquisition environment, using NGSs makes sense, because it is more economical than developing military-unique standards and it promotes development of dual-use technology. Using NGSs frees scarce DoD resources for use on other priorities. DoD use of an NGS may consist of directly using the NGS document in acquisition, referencing the NGS in a Government document, or reproducing portions of the NGS, with permission, in a Government document.

The Department is not the only beneficiary when it uses NGSs. The NGSBs also benefit from DoD adoption and use of their documents. DoD's scientists and engineers, many of whom are leaders in their fields, offer valuable contributions through their participation in NGS development. Adoption by DoD broadens the use of an NGS directly through defense contracts and indirectly through the added visibility provided by its inclusion in the Acquisition Streamlining and Standardization Information System (ASSIST), which is an online repository and management database of specifications and standards developed and adopted by DoD.

The benefit to DoD and to the nation is the leveraging that occurs when experts from laboratories, manufacturers, users, academia, consumers, and others come together to cooperatively apply their knowledge. The result is usually a better standard than anyone could have produced alone. Its value is measured by the agreements documented, the consensus achieved, and the intellectual property recorded.

NGS Environment

What Is a Standard?

While the Department and some other organizations distinguish between "standards" and "specifications," most organizations use the generic term "standard" to refer to a wide variety of technical documents intended to establish common solutions to repetitive requirements. OMB Circular A-119 defines a standard as "common and repeated use of rules, conditions, guidelines, or characteristics for products or related processes and production methods and for related management systems practices." According to OMB, a standard can be "definition of terms; classification of components; delineation of procedures; specification of dimensions, materials, performance, designs, or operations; measurement of quality or quantity in describing materials, processes, products, systems, services, or practices; test methods and sampling procedures; or descriptions of fit and measurements of size or strength."

What Is a Voluntary Consensus Standard?

Voluntary consensus standards are developed or adopted by domestic and international NGSBs in compliance with practices and procedures that include provisions requiring the owners of relevant intellectual property agree to make their intellectual property available on a nondiscriminatory and royalty-free (or for a reasonable royalty) basis to all interested parties.

The following standards are not voluntary consensus standards:

- Industry standards, company standards, *de facto* standards, or other standards developed in the private sector but not through the full consensus process
- Government-unique standards, which are developed by the Government for its own uses but not through the full consensus process
- Standards mandated by law.

While the term "voluntary consensus standard" is widely used among standards developing organizations, industry, and Government, the term has caused confusion and even created some resistance to their use. The term "voluntary" means the decision to use it is voluntary and it is voluntarily developed. However, once a voluntary consensus standard is placed on contract, cited as a requirement, or required by law or reg-

ulation, compliance is mandatory, not voluntary. Even the term "consensus" has lead to the misperception that 100 percent agreement is required before a standard is approved. Consensus is defined differently by standards developers, but it is usually more than 60 percent and less than unanimity.

What Is an NGS?

An NGS is a standard developed by a private-sector organization that plans, develops, establishes, or coordinates standards, specifications, handbooks, or related documents. NGSBs include professional, scientific, and engineering societies; dedicated standards bodies; trade associations; consortia; and international standards bodies. The Department prefers to use the term "non-Government standard" instead of voluntary consensus standard, partly to avoid the confusion noted above, but also because it is a broader term which includes consortia standards. As with voluntary consensus standards, NGSs do not include company standards or *de facto* standards.

What Is a Consortia Standard?

Consortia standards are developed by companies or organizations which share similar strategic standardization goals, need to develop standards quickly to meet market demand, or are trying to harmonize or differentiate requirements in a specific industry. In 1990, there were comparatively few consortia standards; however, as time progresses, thousands more documents are being created, particularly in the information technology area.

There is discussion in some federal agencies concerning the permissibility of using consortia standards and whether OMB Circular A-119 authorizes their use. While the Circular does not specifically address consortia standards, it clearly authorizes their use and gives them preference to Government standards. The Circular states, "This policy does not establish a preference among standards developed in the private sector.... This policy allows agencies to select a non-consensus standard developed in the private sector as a means of establishing testing methods in a regulation and to choose among commercial-off-the-shelf products, regardless of whether the underlying standards are developed by voluntary consensus standards bodies or not."

Due Process

To some extent, most standards, including those in Government, are developed follow-ing certain principles of due process. Due process—as applied to the development, approval, revision, reaffirmation, and cancellation of standards—means any person (organization, company, Government agency, individual, and so on) with a direct and material interest has a right to participate by expressing a position and its basis, having this position considered, and having the right to appeal. Due process allows for equity and fair play.

The following are the criteria which define due process in NGS development. It is important to understand if, and to what extent, NGSB organizations adhere to these principles in the development of their standards, since it may affect participation decisions.

- *Openness.* Participation is open to all people directly and materially affected without unreasonable financial barriers. Voting membership on the standards body is usually not conditional upon membership in any organization, nor unrea-sonably restricted by technical qualifications or other such requirements.

- *Lack of dominance.* No single interest category, individual, or organization domi-nates the standards development process. Dominance means a position or exercise of dominant authority, leadership, or influence through superior leverage, strength, or representation to the exclusion of fair and equitable consideration of other viewpoints.

- *Balance.* The standards development process has a fair and representative diversity of interests. NGSB organizations seek participants from diverse interests with the objective of achieving balance.

- *Notification of standards development.* The NGSB gives notification of standards activity in suitable media as appropriate to provide an opportunity for participa-tion by all directly and materially affected people.

- *Consideration of views and objections.* An NGSB promptly considers the written views and objections of all participants.

- *Consensus vote.* The NGSB documents evidence of consensus in accordance with the requirements and procedures of the standards developer. NGSB partici-

pants are advised to review the bylaws to ensure balloting procedures are under-stood.

- ***Appeals.*** Written procedures contain an identifiable, realistic, and readily available appeals mechanism for the impartial handling of procedural complaints about any action or inaction. The NGSB addresses appeals promptly and makes decisions expeditiously. Appeals procedures provide for participation by all parties concerned without imposing an undue burden on them. Consideration of appeals is fair and unbiased and fully addresses the concerns expressed.

- ***Written procedures.*** Written procedures govern the methods used for standards development and are available to any interested person.

Non-Government Standards Bodies

Types of Non-Government Standards Bodies

NGSBs are private-sector organizations that plan, develop, establish, or coordinate standards. There are many kinds of organizations with a variety of different membership, voting, standards development, and funding models. These variations are often reflected in the manner in which these organizations produce standards. In general, NGSBs come under one of four categories: trade association, professional society, standards developing organization, and consortia. Some NGSBs develop standards intended only for a very narrow application by their members, some organizations develop standards intended for application in specific geographical areas, and some NGSBs develop standards intended for the global market.

Most NGSBs operate by some form of a consensus process, which typically requires a defined degree of openness, balance, due process, general agreement, participation of interested and affected parties, and a formal process for attempting to resolve differences of opinion. The process of developing standards is usually governed by written procedures covering each step of the process. Consortia and trade associations typically are more restrictive with regard to openness, may not allow certain kinds of representatives to participate, and may not allow all participants to vote. At the other extreme, some standards developers allow any interested party to participate without qualification, have strict rules concerning balance of different types of participants (users, producers, general interest), and may require a certain balance in the voting in order to approve a standard.

While the processes used by NGSBs may vary, the standards produced by each method have benefits, and most importantly, they meet the needs of their constituents. It has not been demonstrated one form of standard development produces an inherently superior standard. The Department uses standards that meet its needs, irrespective of the standards development process.

NGSBs provide the infrastructure for preparing standards. In the standards development process, Government personnel participate in NGSB activities along with representatives from industry, academia, other organizations, and individual consumers. NGSBs are private-sector organizations operating under their own rules; the U.S. Government is simply one of several stakeholders and participants in their processes.

The NTTAA and OMB Circular A-119 encourage the participation of federal representatives in NGSBs to increase the likelihood the standards they develop will meet both public- and private-sector needs. Government agencies, manufacturers, consumers, buyers, retailers, testing laboratories, technical experts, and other interested parties (including individuals) from the United States and many other countries participate in the system.

Trade Associations

There are approximately 300 trade associations. The Aerospace Industries Association (AIA) and Electronic Industries Alliance (EIA) are organizational examples of manufacturers, suppliers, customers, service providers, and other firms active in a given industry sector. These associations deal with mutual business interests and promote the industry and its products. To address their objectives, many trade associations develop standards for the products manufactured by their members, although some concentrate on developing standards for products used by their industries. Since a trade association exists to support its membership, and the industry or "trade" it represents, Government participation in the standards development activities of a trade association may be restricted because the Government is not a member of the association. However, standards development activities in trade associations are often conducted in accordance with due process, openness, and balance procedures which give Government representatives an equal voice, and many, if not most, standards writing trade associations are accredited by the American National Standards Institute (ANSI). While it is preferable that Government representatives have this equal voice, participation may well be beneficial to the Government even under more restrictive circumstances.

Professional Societies

Professional societies are individual membership organizations. For example, the American Society of Mechanical Engineers (ASME International) and the Institute of Electrical and Electronics Engineers (IEEE) are societies that support the practice and advancement of a particular profession. Several professional societies, particularly those organizations in the engineering disciplines, develop technical standards. Participants in standards committees usually serve as individual professionals, rather than as representa-

tives of their organizations. As a practical matter, individuals who participate at the expense of their organization may be expected to reflect the interests of their organization, irrespective of the society's official position. When a Government agency is funding participation, the Government employee or support contractor must participate as a representative of their agency, and not as an individual. Generally, professional societies promote the interests of their professionals. A society of a specific kind of engineer may help advance a field of engineering, continue the education and professional development of those engineers, and support development of new engineers entering that field. Many professional society standards writing organizations are accredited by ANSI as operating in full compliance to openness, due process, balance, and transparency.

Standards Developing Organizations

A few NGSBs, such as ASTM International, were specifically founded to develop standards and are categorized as standards developing organizations (SDOs). Membership in an SDO is not limited to a particular industry or profession. Membership fees are generally low, facilitating participation by individuals not sponsored by an employer. SDOs typically operate with little bias in the standards development process as a whole. There may be specific committees with some degree of bias, but rules governing balance do a good job of policing and limiting such bias. One benefit of an SDO is the opportunity to embark on standards development in virtually any field of endeavor when sufficient interest is expressed by users, producers, and other interested parties. Another benefit is the very strict balance and due process requirements for standards development, voting, and appeal. However, these same benefits can become stumbling blocks to rapid development of standards. Because SDOs allow for participation by virtually anyone willing to pay the membership fee, participants with no real stake in the outcome may become involved in the development process. This open participation practice sometimes greatly benefits the resulting standard and sometimes is detrimental to the process. Government participation in standards development is exactly the same as for any other participant. Government members pay their appropriate fees and participate in the standards development as full partners in the process, including preparing drafts, commenting on drafts, and voting on final standards.

Testing and Laboratory Organizations

Some organizations, such as Underwriters Laboratories (UL), may provide services such as testing products to their standards or to other standards. The standards these

organizations develop generally focus on the area of expertise of the organization; for example, UL is predominantly dedicated to safety, so most of their standards focus on the safety of products. Often, in both the standard and the testing, they focus only on the safety aspects with little or no attention to product function or performance. However, these organizations may also develop standards that do cover product attributes, function, and performance. The user needs to be aware of the purpose of the standard and then use it appropriately. Government participation may or may not be invited in the development of standards by such organizations. When possible, DoD activities may find it beneficial to be involved in such standards development work and should seek to be involved as a full participant.

Industry Consortia

Companies or organizations which share similar strategic standardization goals need to develop standards quickly to meet market demand, or are trying to harmonize or differentiate requirements in a specific industry sometimes form consortia to develop standards outside of traditional standards bodies. In some cases, the standards are published by the consortia and for the consortia; in some other cases, the group may seek wider acceptance by introducing the standards into a more conventional process through partnership with an NGSB. Consortia clearly act in the best business interests of their members. Sometimes those interests coincide with DoD interests or at least, are not in opposition to DoD interests. The Department uses many consortia-developed standards, and when possible, it is appropriate and may be beneficial for DoD to participate in the document development. Two well-known consortia with DoD participation are the Open Systems Group and the World Wide Web Consortium.

The United States Council for Automotive Research (USCAR) is another example of a consortium. DaimlerChrysler, Ford, and General Motors created USCAR in 1992 to further strengthen the technology base of the domestic auto industry through cooperative, precompetitive research. While these companies are fierce competitors in the marketplace, under the umbrella of USCAR, they work together on shared technological and environmental concerns. The three companies recognize that technical collaboration makes good business sense in two well-defined areas: areas where technology leads to no customer differentiation and areas where R&D serves a societal good. In both situations, working together avoids duplication of effort on technology development.

Because there are so many consortia, each with its own set of rules, it is impossible to generalize about their standards development process. Potential Government partici-

pants must work with individual consortia when participation might be beneficial to determine its membership, participation, voting, and standards availability rules and determine on a case-by-case basis whether participation would be beneficial and would not violate any Government laws or regulations concerning conflicts of interest or antitrust issues.

American National Standards Institute

ANSI is a private, not-for-profit organization that administers and coordinates the U.S. standards and conformity assessment system. Unlike many nations, the U.S. does not have a single Government agency or Government appointed national standards body to serve as the U.S. member body to the International Organization for Standardization (ISO) or the International Electrotechnical Commission (IEC). Instead, the U.S. Government recognizes ANSI as the U.S. member body to ISO and IEC.

ANSI *does not* develop standards. ANSI establishes standards-setting criteria based on openness, balance, due process, and consensus agreement by materially affected parties and then accredits standards developers that adhere to these criteria. Only standards submitted to ANSI by an accredited standards developer and then approved by ANSI may be designated as an American National Standard. These documents are identified with distinct ANSI markings which indicate the standards are the product of the accredited standards community.

Perhaps the best way to categorize ANSI is as a federation of NGSBs, companies, Government agencies, academia, consumer interests, labor groups, and others who work together in defining the policies and procedures to accredit U.S. standards developers and conformity assessment systems and to ensure the integrity of the U.S. voluntary consensus standards system. DoD participation in ANSI activities is generally at a policy level working on boards, committees, councils, and forums that plan and oversee standards coordination and development work.

Non-U.S. Standards Organizations

So far in this section, NGSBs have been categorized primarily by the types of memberships they serve, such as trade associations or professional societies. Another way to categorize NGSBs is by their geographic participation and sphere of use. For example, national standards organizations are ones that generally limit participation to citizens within a country or whose standards are usually only used within that country. The

U.S. leads the world in the number and variety of national standards organizations, but most countries in the world have at least one national standards organization.

There are also regional standards organizations that develop standards for use by countries within a defined geographic region, usually for the purpose of facilitating trade among neighboring countries. Such organizations may be largely restricted to a continent, such as the European Committee for Standardization (CEN). Other organizations are hemispheric, such as the Pan American Standards Commission (COPANT). While other organizations cut across continents and oceans, such as the Pacific Area Standards Congress (PASC).

As a matter of policy, the Department has no restrictions on the use of non-U.S. national or regional standards. There are examples of when DoD cites non-U.S. national or regional standards as requirements. For the most part, this action is done for interoperability reasons, but in some cases, there is no corresponding U.S. or international standard to describe the requirement. As a practical matter, DoD does not generally use non-U.S. national standards or regional standards because our technical personnel are not familiar with them, the standards are not always readily available, and DoD personnel usually do not have an opportunity to participate directly or indirectly in developing the standards.

International Standards Organizations

Defining what constitutes an international standard and the organizations that produce them is not a simple matter. Under the World Trade Organization (WTO) Agreement on Technical Barriers to Trade, many national governments and many global companies state a preference for international standards thus the definition is more than an academic exercise. Being designated as an international standard has important trade, regulatory, and global competitiveness implications, thus the definition has become a contentious issue, as well as confusing.

Some people contend that the only private sector international standards organizations are ISO and IEC since they are the only organizations where each country is represented by its national standards organization. However, there are many other international standards organizations. The International Commission on Illumination (CIE) has produced global lighting standards for over 90 years, and DoD uses their standards. The Internet Engineering Task Force (IETF) is an international organization with a large number of participants from around the world which set the standards for

the Internet, which are cited in DoD's Joint Technical Architecture. The International Air Transport Association (IATA) develops standards for most of the airlines in the world, as well as those industries which service the airlines. IATA also has as part of its mission to develop standards to support aviation policies of the world's governments, and again, DoD does use some of their standards.

DoD participates on all of these international bodies in different ways, depending on the structure and operating procedures. For example, DoD has technical experts who participate on the Technical Advisory Groups established by ANSI in order to develop a U.S. position on standards activities and ballots for the appropriate technical committees of ISO and IEC. In the case of the CIE, DoD experts participate, and even chair some standards divisions, on the U.S. National Committee, which represents the U.S. position in the international forum. The IETF is open to any and all participants. Judging from an attendee list at an IETF meeting, there is extensive DoD participation. While international trade associations such as IATA restrict voting participation to its industry members, DoD personnel are occasionally invited to participate as technical experts or customers in some of the standards discussions.

There are also several international organizations created under the auspices of the United Nations (UN) which produce standards, including the International Telecommunication Union (ITU), the International Civil Aviation Organization (ICAO), the International Atomic Energy Agency (IAEA), the International Maritime Organization (IMO), the World Health Organization (WHO), and the Food and Agriculture Organization (FAO). For the most part, these organizations would be considered more government standards developers than NGSBs since they are UN-chartered organizations that require official government representation for "official" positions on standards. But all of these organizations rely heavily on private sector expertise in the development of their regulatory standards and, in some cases, even provide a forum for the development of private sector voluntary standards. For example, ITU has over 600 private-sector members that not only contribute to the development of mandatory standards, but also develop international voluntary standards for the telecommunications industry. In the case of UN-chartered organizations, the designated U.S. Government agency coordinates the U.S. position on a standard with DoD as well as any other affected Government agencies. Depending on the subject matter of the standard, the DoD position may be the one that decides the U.S. position in the international forum.

Adding to the confusion on what constitutes an international standard and an international standards developer are "international standardization agreements" generated by military treaty alliance organizations such as the North Atlantic Treaty Organization (NATO); the American, British, Canadian, and Australian Armies (ABCA); and the Air Standardization Coordinating Committee (ASCC). Since these standards are developed by and for the military organizations of the U.S. and its allies, they more appropriately fall under the heading of multinational treaty organization standards and not international standards.

In recent years, several standards organizations that originated as national standards organizations have changed their names to reflect their international membership and global use of their standards. Some examples include ASME International, ASTM International, NFPA International, and SAE International. DoD uses and participates in the development of all of these standards. Some producers and users of standards, however, question whether these organizations truly produce international standards or whether these name changes are merely marketing strategies.

In an effort to resolve the debate over what constitutes an international standard, the WTO established criteria which essentially state that a standard may be considered international if the membership in the developing organization is open to at least all of the members of the WTO. In addition, the standards must be developed following procedures to ensure transparency, openness, impartiality and consensus, effectiveness and relevance, coherence, and to address the concerns of developing countries. The WTO criteria has not ended the debate for what constitutes an international standard, but it has provided a framework for discussion.

While the geographic origins and designation of a standard may have important implications in regulations and trade, for DoD the designation of a standard as international, global, regional, national, or local is not of critical importance. What is important to DoD is that any standard used meets the operational requirement; is technically accurate, current, adequate, and available; and preferably is developed in an open forum that allows for broad participation and is widely recognized and used.

DoD Participation in NGSBs

DoD personnel are encouraged to participate on NGS technical committees to pro-
mote standards that meet DoD needs. DoD personnel who participate in the activities
of NGSBs at Government expense do so as official DoD or agency representatives. If
DoD representation at an NGSB meeting is not possible, DoD may participate through
correspondence, online capability, telephone, or other suitable means. Participation in
NGSBs does not necessarily connote DoD agreement with, or endorsement of, deci-
sions reached by such organizations, or that DoD will eventually adopt the NGS.

The Technical Committee Participation (TCP) database identifies the known DoD
participants and the NGSB committee on which they participate. There are undoubt-
edly large numbers of DoD participants who have not been identified, therefore, these
individuals are not included in the TCP database. The TCP database can be accessed at
www.dsp.dla.mil. For security reasons, only authorized DoD users may register their
participation, edit a previously created participation record, or access point of contact
information in the TCP database.

DoD participation in the development of NGSs has many benefits, including the
following:

- Reducing DoD document development cost

- Reducing DoD document maintenance burden and cost

- Ensuring DoD interests are met, by influencing the content of standards

- Representing defense "customer" interests in standards

- Promoting DoD interoperability interests

- Helping DoD stay abreast of new technologies

- Providing DoD access to dual-use products in accordance with NGSs

- Expediting DoD access to information about new industry developments

- Gaining insight into new market directions and future market trend

- Learning from both manufacturers and end users

- Promoting competition and providing a broad base of suppliers.

By being involved with NGSBs, DoD can communicate information about military
needs early in the NGS development cycle. Today, more than ever, the ability to influ-

ence standards that support technology transition into defense products is of paramount importance.

DoD participates in standards work for the same reasons that other Government agencies and businesses do. Standards help any enterprise work more efficiently and serve its customers better. Businesses participate in the standards process to influence the evolution of standards, participate in defining "prudent practices" for their business sector, and acquire early knowledge of developments in their field. DoD has similar interests, particularly in the information technology world.

Guidance for DoD Representatives to NGSBs

Representatives involved in NGSB activities should participate actively and on an equal basis with other members, consistent with the procedures of those bodies, particularly in matters such as establishing priorities; developing procedures for preparing, reviewing, and approving standards; and developing or adopting new standards.

The number of individual DoD participants in a given NGS development activity should be kept to the minimum required for effective representation of program, technical, or other concerns. In some cases, one person with sufficient technical expertise and product knowledge may participate; in other cases, DoD may have several representatives.

DoD representatives should participate actively in NGS committees, being fully involved in discussions and technical debates, registering opinions, and, if selected, serving as chairpersons or in other official capacities. However, DoD and OMB ethics policies distinguish between technical and managerial leadership in private-sector organizations. Technical activities such as serving as a project editor or as a committee chairperson are permissible. Managerial assignments including approving budgets, making financial decisions, or engaging in other "business" activities of the standards group should be declined.

Criteria for Participation

It is not always necessary for DoD to have active participation in NGS committees. If a product, process, or technology covered by an NGS is suitably stable, meets DoD

requirements, is not used in critical applications, and is unlikely to see dramatic changes in industry, DoD participation may not be necessary. However, DoD should participate on NGS development working groups when one or more of the following criteria are met:

- DoD has a significant interest in the practices, processes, or products covered by the document.

- DoD has requirements the NGS must accommodate to be usable by DoD activities.

- The practices, processes, or products covered by the document are used in critical applications.

- It's important to be involved in the area to stay informed about new technical developments and to influence the direction of standards early in the process.

General Responsibilities

The SD-1, *Standardization Directory*, identifies DoD standardization organizations, areas of responsibility and interest including NGS. The SD-1 is available at www.dsp.dla.mil (select "Library" then "Standardization Documents issued by the DSPO"). Two primary responsibilities related to NGS are:

- *Lead Standardization Activity (LSA).* The LSA is the activity responsible for managing DoD standardization efforts in its assigned area of responsibility. LSAs have the following NGS responsibilities:

  - Assign standardization projects for adopting NGS.

  - Seek appropriate DoD representation on NGSB technical committees where DoD participation is necessary.

  - Work with NGSBs to address future DoD standards needs and seek the establishment of committees in areas not adequately covered by existing groups.

  The SD-1 identifies an LSA for each federal supply group (FSG), federal supply class (FSC), and standardization area (SA).

- *Adopting Activity.* When an LSA approves a project to adopt an NGS, or when DoD adopts an NGS, the Adopting Activity becomes the official DoD technical focal point for that NGS. The Adopting Activity represents DoD on all technical matters related to the NGS and has the following responsibilities:

- Participate in the development of the NGS.

- Solicit input from other interested DoD activities during the draft stages of the NGS.

- Request a standardization project number using the ASSIST Project module. The Adopting Activity should notify the LSA and Custodians a project to adopt an NGS has been initiated.

- Identify DoD custodians and review activities that have an interest in the NGS.

- Review and forward drafts of the NGS to appropriate DoD activities for comment as a part of the normal coordination of the drafts by the NGSB.

- Review the comments and submit a consolidated DoD position to the NGS technical committee.

- Adopt the approved NGS.

Participants' Responsibilities

DoD participation in NGS activities includes assuming a variety of responsibilities. Table 1 lists and describes participants' responsibilities.

Table 1. Participants' Responsibilities

Responsibility	Description
Know the NGSB	Participants must become familiar with the purpose, organization, structure, and operating procedures of the NGSB. In addition, because it may be relevant to later agency delibera- tions about the use of the standard or other document, participants should determine whether the committee (1) is balanced, (2) follows agreed-on procedures (including trans- parency and due process), (3) maintains openness, and (4) operates by consensus. ANSI accreditation is one indication that the NGSB follows these procedures. Participants in standards committees should review the purpose and scope of each particular activity and should seek clarification of any ambiguities. Participants should also be aware that restric- tion of competition through the use or abuse of standards procedures is improper and violates various federal and state antitrust statutes; such violations are subject to civil and criminal prosecution.
Follow protocol and procedures	Participants must know the rules by which the group operates.
Seek leadership positions	Participants should accept leadership of a project or agree to represent the group to another standards body. Doing so improves credibility and demonstrates leadership.
Refrain from involvement in NGSB internal management	In order to maintain NGSBs as independent, private, and non-Governmental bodies, DoD representatives must refrain from decision-making involvement in the internal day-to-day management of such organizations (e.g., selection of salaried officers and employees, establishment of staff salaries, and administrative policies). DoD representatives may participate in the policymaking process of the NGSB, particularly in matters such as establishing priorities; developing procedures for preparing, reviewing, and approving standards; and creating NGSs.
Update the TCP database	Once an official member of a committee, a subcommittee, or a working group, participants must register in the TCP database and maintain their official contact information. Interest- ed parties can retrieve information about participants in a variety of ways. The database also contains brief descriptions of NGSBs and provides links to their respective websites. The TCP enables better communication among those concerned with DoD technical require- ments in developing NGSs. The TCP helps managers determine where participation is ade- quate, inadequate, or more than adequate, and it enables more efficient allocation of limited technical resources. TCP information may also be useful to managers who approve official travel and leave requests to support employee participation on NGSBs or who authorize the payment of membership fees.
Do not dominate	DoD representatives must not dominate NGSB activities. They must comply with the NGSBs' rules and procedures, including those regarding domination of proceedings by any individ- ual. In addition, DoD participants must avoid the practice or the appearance of undue influence relating to DoD representation and activities in NGSBs.

Table 1. Participants' Responsibilities

Responsibility	Description
Ensure DoD needs are accommodated	Participants should make every effort to accept the NGSs as written without DoD-unique modification, rather than trying to militarize an NGS. However, it may be necessary to seek inclusion of a "when specified" paragraph to accommodate DoD requirements without adversely affecting other uses of the document. This inclusion makes the document more readily adoptable by DoD and minimizes the need for issuing Government documents invoking changes to the NGS for DoD use. Participants should make DoD requirements known to the standards writing committee, subcommittee, or working group and, when appropriate, obtain committee agreement to have DoD needs accommodated in the document by inclusion, reference, or other suitable means.
Vote and be an advocate	Participants may vote at each stage of standards development and on actions arising in the normal course of participation in NGSBs. Participants may vote in accordance with the procedures of the NGSB, unless prohibited from doing so by law or agency. However, participants should abstain when there is a conflict of interest for DoD or its representative.
Present the official position	Participants must represent the official DoD position, even if it is at odds with personal views. Similarly, participants representing the United States in an international group must support the national position.
Know your participation does not bind DoD	Participation and voting by a DoD representative during the formulation of a document may not be considered to bind DoD to any particular present or future course of action or to imply compliance or concurrence by the Government. Although the express purpose of DoD representation is to enhance the adoption potential of an NGS, the actual adoption process is separate and distinct, and documents prepared by groups with DoD representation may be rejected in the adoption process. Although this situation is unlikely, it is important to realize that it is a possibility.
Participate actively	When serving as a member of an NGSB, DoD representatives should participate actively and on an equal basis with other members, consistent with the procedures of that body, particularly in matters such as establishing priorities; developing procedures for preparing, reviewing, and approving standards; and developing or adopting new standards. Participants should attend regularly, be early, position themselves, network, observe, be attentive, introduce themselves, be courteous, know the rules, be prepared, contribute, know the standard, do the homework, know the agenda, be proactive, volunteer, and know the product. Active participation includes being fully involved in discussions and technical debates, registering opinions, and, if selected, serving as chairperson or in other official capacities. Participation will generally involve onsite face-to-face meetings, but participants can also participate using teleconferences, video-teleconferences, Internet/intranet communication, and e-mail.

Table 1. Participants' Responsibilities

Responsibility	Description
Be prepared	Participants must know their subject matter and the DoD position, as well as what they want and when to weigh in. In addition, they should set goals and have a few alternatives in mind.
Dress appropriately	Participants should dress according to the "dress code." Many groups dress in business attire when meeting at a business facility and dress casually when meeting at a hotel.
Promote consensus-based behavior	Participants should promote consensus-based behavior with all team members. Consensus is the key to developing a successful accepted standard. Participants should advance and protect DoD's interests throughout the committee's deliberations.
Seek consensus	Participants should seek support for DoD's position among the other members of the group, in advance, if appropriate. Success requires knowing the other representatives and finding additional reasons for them to support DoD's position.
Learn and understand the language	Each group has its own jargon and ways of pronouncing acronyms. Participants can learn by listening carefully and by reading the technical literature.
Know and follow *Robert's Rules of Order*	Many NGSBs use *Robert's Rules of Order*. To be effective, participants should become familiar with these common practices. ANSI and several NGSBs periodically offer a training course on effective participation as well as specific operating procedures. For a reference to the rules, see www.robertsrules.org.
Know DoD policies	Participants must become familiar with, and be prepared to articulate, DoD's positions on major policy issues relating to the entire life cycle of acquisition, from selecting standards, specifications, and requirements, to acquisition and logistics. DoD participants should avoid expressing personal opinions on significant policy issues, because others may construe your personal opinion to be official. Headquarters staff can give advice on policy and procedural matters, if necessary.
Keep your management and interested parties informed	Supervisors must be kept informed of significant developments, both technical and policy, that occur at committee meetings. Participants also should facilitate communication or coordination of new or modified standards throughout the organization and elsewhere in DoD when affected parties may have a need to know about the standards.
Keep good records	Participants should prepare thorough, yet concise, meeting reports; follow up with appropriate staff; analyze issues; and distribute reports. They also should maintain a file of committee-related information, including the committee's by-laws, membership lists, final ballots, relevant correspondence, and minutes of meetings.
Use performance standards	Whenever appropriate, the development and use of performance standards should be encouraged. Performance criteria in standards generally do not stand in the way of innovation, whereas prescriptive specifications tend to do so. Design specifications or reference to patented devices, materials, or processes may deter technical progress, and some NGSBs may prohibit their inclusion.

Table 1. Participants' Responsibilities

Responsibility	Description
Be ethical	Participation in standards developing activities almost certainly involves working with representatives of the private sector, which imposes numerous responsibilities, ethical obligations, and possible antitrust considerations. Federal employees are subject to constraints on conduct that may not apply to private sector counterparts. These constraints include limitations and restrictions on acceptance of gifts, meals, travel expenses, etc. DoD participants must behave consistent with the policies of DoD Directive 5500.7, *Standards of Conduct*. Ethical obligations include the following: • Avoid situations that are or may appear to be breaking antitrust laws. • Prevent donations by outside parties of expenses prohibited by your agency. • Prevent excessive travel, room, and per diem expenses. • Avoid the appearance of using public office for private gain. • Avoid the appearance of giving preferential treatment to any organization or person. • Avoid the appearance of making a Government decision outside official channels. DoD participants having any questions or concerns about ethics issues should contact the ethics office or legal counsel.
Become part of the group	Many groups have a social dimension that helps pull the group together. Issues are more easily resolved at the dinner table than at the conference table. Be aware that hosted events may raise an ethics issue. Participants should associate with members before, during, and after the meetings; keep in touch; take advantage of opportunities; and have a good time, but be careful not to violate ethics rules.
Be helpful	If possible, participants should assist the group or a fellow member, as long as the favor is within the ethics rules.
Be a good listener	Participants who cooperate in making the work time productive gain credibility. They should speak up whenever they have a positive contribution; otherwise, they should pay attention and listen carefully.
Handle hostility	Participants should be mentally prepared to deal with adversarial people who may attack with persistent questions, unfounded accusations, or misinformation. In such instances, participants should avoid getting into protracted discussion and should never put down or threaten the source of hostility. Instead, they should offer to continue the discussion later and make an effort to understand the source of hostility.
Be aware of security concerns	Participants who are questioned beyond normal curiosity or who believe they are being targeted as an intelligence source, should back off as graciously as possible and report the incident to their security office.
Attend training programs	Many NGSBs offer training courses for their committee members. In addition, ANSI offers a number of helpful training programs, which are described at the ANSI website: www.ansi.org.

Funding Participation

To support ongoing activities, most NGSBs require all participants, industry and Government alike, to pay a fee for taking part in the document development process. In accordance with the provisions of OMB Circular A-119, DoD individuals who participate at Government expense do so as representatives of DoD or their DoD activity.

A few years ago, a legal interpretation of 5 U.S.C. Section 5946, "Membership fees; expenses of attendance at meetings; limitations," dated 1912, prohibited the use of appropriated funds to pay for membership fees or dues. To clarify the intent of the 1912 law, Congress included in Section 1115 of the 2002 Defense Authorization Act (S. 1438) a statement that the 1912 law does not apply when an employee is participating in agency-related standards activities. This change in the law allows DoD to pay individual administrative, participation, or membership fees when an employee is officially participating in NGS activities.

In instances where a DoD activity (command, base, station) pays administrative, participation, or membership fees for individual representatives, the DoD activity retains the right to substitute alternate representational personnel. Even though an individual may be named as a regular participant and receive benefits of participation, the fee has been paid by the DoD activity to have a representative involved in NGS efforts. The DoD activity reserves the right to designate the individual who can most appropriately represent DoD's interests in NGS efforts. It should be noted any benefits of participation accrue to the activity rather than the individual representative. There are no stipulations in either policy or law precluding a DoD employee from joining and participating in any NGSB at his or her own expense.

Organizational Membership

Sometimes it is in DoD's best interest to acquire organizational memberships in an NGSB. DoD organizations may seek membership in an NGSB at an activity, service, agency, or DoD level, depending on the particular situation. In making membership decisions, the organization should consider the benefits to DoD such as free or discount publications, technical reports, voting privileges, and participation on planning boards.

DoD Support to an NGSB

The total amount of DoD support to an NGSB should be no greater than that of equivalent private sector participants in that activity, except when it is in the best interest of DoD to develop or revise a standard and when its development or revision is unlikely to occur without DoD support. DoD support, subject to legal and budgetary authority, may include the following:

- Direct financial support (e.g., memberships or contracts)

- Administrative support (e.g., travel costs, hosting of meetings, or secretarial functions)

- Technical support (e.g., cooperative testing for standards evaluation or participation of DoD personnel in the activities of standards development groups)

- Joint planning with NGSBs to facilitate a coordinated effort in identifying and developing needed standards

- Participation of DoD or contractor personnel in standards activities.

DoD official participation on NGSBs does not connote DoD agreement with or endorsement of decisions reached by such bodies or of the standards approved and published by the NGSBs. However, official DoD participation provides an inherent constituency for NGS adoption because the DoD representative who participates in the NGSB process is normally the DoD coordinator for the adoption process.

Adopting an NGS

DoD policy and guidance governing DoD participation in NGSBs and adoption of NGSs are contained in DoD 4120.24–M, Appendix 3. Participants in NGSBs can access this document by selecting "Library" on the DSP website found at www.dsp.dla.mil. Participants should always refer to this resource for the definitive guidance on participation and NGS adoption.

What Is Adoption?

Adoption is the process by which DoD expresses formal acceptance of an NGS for use in direct procurement, as a reference in another document, or as guidance in the design, manufacturing, testing, or support of materiel. Adopted NGSs are not mandatory. These documents are available for use by DoD activities.

Advantages of Adoption

Adopting an NGS document offers the following advantages:

- Adoption provides visibility for the document through its appearance in ASSIST. This visibility is of great value to DoD users since it can narrow the search for an acceptable standard from a very broad one to a much narrower one.

- Adoption provides a measure of confidence in the standard since the NGS is being used in DoD.

- The adoption notice identifies a DoD point of contact if there are questions or problems with the standard.

- The adoption notice can provide application and other use guidance to DoD personnel.

Adoption Criteria

Before adopting an NGS, review DoD 4120.24–M, Appendix 3 guidance and ensure the following questions are addressed:

- Does the NGS meet DoD's requirements? If yes, then the NGS should be adopted. It is important to remember that an adopted NGS is not a mandatory document; it is simply available for use by DoD activities. In some cases, the NGS may not fully meet DoD's requirements. It may be necessary to develop another type

of Government document that references the NGS to address the overall require-
ments. It may be necessary at times for this document to change or supplement
the NGS in order to meet DoD requirements. Even though the NGS does not
fully meet DoD's requirements, it should still be adopted if it will be referenced.
Not all interested DoD activities have to concur on an NGS for it to be adopted.
An NGS can be adopted for use by only those DoD activities that concur in its
use. If the NGS has too many deficiencies it should not be adopted.

- Are copies of the document readily available? In general, availability is not an
overwhelming issue with NGSs. However, there are some consortia standards
developers that limit document access to members, which would make general
access to DoD activities and contractors difficult.

- Has the NGS been approved by the NGSB? Do not adopt draft NGSs since
requirements can change as a result of comments during coordination.

- Does the NGS contain proprietary information that will require DoD or its con-
tractors to pay royalty fees? If royalty fees are required, DoD must assess whether
they are fair and reasonable before adopting the NGS.

Adopting Activity Responsibilities

The Adopting Activity is the organization that chooses to adopt an NGS and accepts
DoD responsibility for the document. Generally, the Adopting Activity also involves
other activities in the adoption process, establishes a project to adopt the NGS, coordi-
nates the NGS with interested parties, resolves DoD comments with the NGSB, prepares
an adoption notice, submits the adoption notice to DoDSSP, ensures ASSIST lists the
adopted NGS, and withdraws adoption when necessary. The NGSB must be contacted
to verify the latest edition of the document continues to meet DoD requirements.

In addition to participating in the development of the NGS, the Adopting Activity
has a responsibility to serve as the DoD technical focal point for the document and
involve other interested parties, including Custodians and Review Activities, within
DoD to keep them fully informed about the NGS at every stage

For definitive guidance on responsibilities, Adopting Activities should refer to DoD
4120.24-M.

Replacing Government Documents with NGSs

DoD policy encourages replacing existing defense and federal standardization documents with NGS documents when it can be determined that an NGS meets the users' requirements.

A simple test for determining whether a Government specification or standard is a good candidate to become an NGS is whether the commercial sector will use the resultant standard. If the answer is yes, then the Government standard is a good candidate for conversion to an NGS. If the answer is no, then DoD has other alternatives to NGSs, including DoD performance specifications and commercial item descriptions.

Any effort to develop an NGS that is not for a commercial product or does not specify a process or practice that truly will be used industry-wide is discouraged. DoD should not participate in such efforts, nor should DoD adopt the NGS. If industry develops an NGS for a canceled Government document, DoD must ensure it has a valid internal need for the NGS before adopting it.

Inactivation or Cancellation

If a satisfactory NGS exists, DoD should cancel or inactivate for new design the Government document. The adoption notice for the NGS and the notice for the inactive for new design or cancelled Government document must provide all applicable supersession, substitutability, or cross-reference information.

Qualification and NGS Adoption

Sometimes, DoD adopts an NGS to replace a Government specification that has an associated qualified products list (QPL) or qualified manufacturers list (QML). Cancellation and replacement of the Government document presents the Adopting Activity with the issue of how to deal with the qualification component. The following scenarios provide guidance for those situations:

- When an NGS meets both DoD and commercial industry needs, and when an industry-wide qualification activity can adequately ensure compliance with the NGS qualification requirements, DoD should adopt and use both the NGS and its associated qualification list.

- When an NGS includes qualification requirements and no industry qualification activity exists, but DoD has a qualification activity that can ensure compliance,

DoD should adopt the NGS and use its qualification activity to support DoD acquisition.

■ DoD should not adopt an NGS when the NGS includes a qualification require-ment that identifies a DoD activity as the sole designated qualification activity for commercial and Government contracts. When an NGS identifies a DoD qualifi-cation activity, the identification must say the DoD qualifying activity is only for DoD procurement.

■ When an NGS includes qualification requirements and both an industry-wide qualification activity and a DoD qualification activity exist, DoD should adopt the NGS and plan for a transition from DoD qualification to industry qualification.

■ When an NGS does not include qualification requirements but DoD has a justi-fied need for qualification, DoD may issue a military document citing the NGS and establishing qualification requirements.

Appendix Non-Government Standards Bodies

The following is a list of NGSBs with at least one active DoD-adopted standard or DoD employee registered in the DoD Technical Committee Participant database. This listing is not meant to be a complete compilation of the hundreds of NGSBs in the U.S. and internationally. DoD uses many other standards from NGSBs that are not on this list, and there are also new NGSBs created every year. For a list of those NGSBs accredited by ANSI, go to www.ansi.org/membership/membership_rosters/org_ members.aspx?menuid=2. The Standards Engineering Society (SES) also maintains a list of NGSBs that includes consortia standards developers and other standards organi-zations not accredited by ANSI, but widely used. This list can be viewed by clicking on "Links" on the SES website at www.ses-standards.org.

Aerospace Industries Association (AIA)

Air Conditioning and Refrigeration Institute (ARI)

Air Movement and Control Association (AMCA)

Alliance for Telecommunications Industry Solutions (ATIS)

Aluminum Association (AA)

American Architectural Manufacturers Association (AAMA)

American Association of State Highway and Transportation Officials (AASHTO)

American Association of Textile Chemists and Colorists (AATCC)

American Bearing Manufacturers Association (ABMA)

American Boat and Yacht Council (ABYC)

American Concrete Institute (ACI)

American Conference of Governmental Industrial Hygienists (ACGIH)

American Dental Association (ADA)

American Gas Association (AGA)

American Gear Manufacturers Association (AGMA)

American Hardboard Association (AHA)

American Industrial Hygiene Association (AIHA)

American Institute of Aeronautics and Astronautics (AIAA)

American Institute of Steel Construction (AISC)

American Institute of Timber Construction (AITC)

American Leather Chemists Association (ALCA)

American National Metric Council (ANMC)

American National Standards Institute (ANSI)

American Petroleum Institute (API)

American Plywood Association (APA) (now APA — The Engineered Wood Association)

American Railway Engineering and Maintenance of Way Association (AREMA)

American Society for Nondestructive Testing (ASNT)

American Society for Quality (ASQ)

American Society of Cinematographers (ASC)

American Society of Civil Engineers (ASCE)

American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)

American Society of Mechanical Engineers International (ASME)

American Society of Sanitary Engineering (ASSE)

American Water Works Association (AWWA)

American Welding Society (AWS)

American Wood Preservers Association (AWPA)

Architectural Woodwork Institute (AWI)

Association for the Advancement of Medical Instrumentation (AAMI)

Association for Automatic Identification and Mobility (AIM) (AIM Global)

ASTM International

British Standards Institution (BSI)

Building Officials and Code Administrators (BOCA International) (incorporated into the International
  Code Council)

Builders Hardware Manufacturers Association (BHMA)

Canadian General Standards Board (CGSB)

Cast Iron Soil Pipe Institute (CISPI)

Compressed Gas Association (CGA)

Construction Specifications Institute (CSI)

Cooling Tower Institute (CTI) (now Cooling Technology Institute)

Cordage Institute (CI)

Data Interchange Standards Association, Inc. (DISA)

Deep Foundations Institute (DFI)

Deutsches Institut fur Normung (DIN)

Electronic Commerce Code Management Association (ECCMA)

Electronic Components Assemblies and Materials Association (ECA)

Electronic Industries Alliance (EIA)

Electrostatic Discharge Association (ESDA)

FM Global

Government Electronics & Information Technology Association (GEIA)

Gypsum Association (GA)

Hardwood Plywood Manufacturers Association (HPMA) (obtain standard from HPVA)

Hardwood Plywood & Veneer Association (HPVA)

High Frequency Industry Association (HFIA)

Human Factors and Ergonomics Society, Inc. (HFES)

IDEAlliance (formerly The Graphic Communications Association)

Illuminating Engineering Society of North America (IESNA)

Information Technology Industry Council (ITI)

Institute for Interconnecting and Packaging Electronic Circuits (IPC)

Institute of Clean Air Companies (ICAC)

Institute of Electrical and Electronics Engineers (IEEE)

Institute of Environmental Sciences and Technology (IEST)

Insulated Cable Engineers Association (ICEA)

International Association of Plumbing and Mechanical Officials (IAPMO)

InterNational Committee for Information Technology Standards (INCITS)

International Electrotechnical Commission (IEC)

International Organization for Standardization (ISO)

International Telecommunication Union (ITU)

Internet Engineering Task Force (IETF)

Joint Electron Device Engineering Council (JEDEC) (now known as JEDEC Solid State
  Technology Association)

Magnetic Materials Producers Association (MMPA)

Manufacturers Standardization Society of the Valve and Fittings Industry (MSS)

Master Painters Institute (MPI)

NACE International (NACE)

National Aerospace Standards Committee (NA/NAS) (related to AIA)

National Association of Architectural Metal Manufacturers (NAAMM)

National Association of Chain Manufacturers (NACM)

National Association of Plumbing-Heating-Cooling Contractors (now Plumbing-Heating-Cooling
  Contractors) (PHCC)

National Association of Relay Manufacturers (NARM)

National Conference of Standards Laboratories (NCSL)

National Electrical Manufacturers Association (NEMA)

National Fire Protection Association (NFPA International)

National Fluid Power Association International (NFPA)

National Hardwood Lumber Association (NHLA)

National Institute of Building Sciences (NIBS)

National Wood Window and Door Association (now Window and Door Manufacturers Association)
  (WDMA)

NSF International (NSF)

U.S. Department of Commerce, Voluntary Products Standards Program

Optics and Electo-Optics Standards Council (OEOSC)

Parachute Industry Association (PIA)

Pipe Fabrication Institute (PFI)

Plastic Pipe Institute (PPI)

Plumbing and Draining Institute (PDI)

Quarter-Inch Cartridge Drive Standards, Inc. (QIC)

Rack Manufacturers Institute (RMI)

Resistance Welders Manufacturers Association (RWMA)

Rubber Manufacturers Association (RMA)

Scientific Apparatus Makers Association (SAMA)

Sheet Metal and Air Conditioning Contractors National Association (SMACNA)

Simulation Interoperability Standards Organization (SISO)

Society for Protective Coatings (SSPC)

Society of Allied Weight Engineers (SAWE)

SAE International (SAE)

Standards Engineering Society (SES)

Steel Door Institute (SDI)

Steel Founders Society of America (SFSA)

Steel Window Institute (SWI)

Telecommunication Industry Association (TIA)

The Instrumentation, Systems, and Automation Society (ISA)

The Open Group

The Soap and Detergent Association (SDA)

The Tire and Rim Association, Inc. (TRA)

Truck Trailer Manufacturers Association (TTMA)

UN Centre for Facilitation of Procedures and Practices for Administration, Commerce and Transport
(now called UN Centre for Trade Facilitation and Electronic Business) (UN/CEFACT)

Underwriters Laboratories (UL)

Western Wood Products Association (WWPA)

World Wide Web Consortium (W3C)
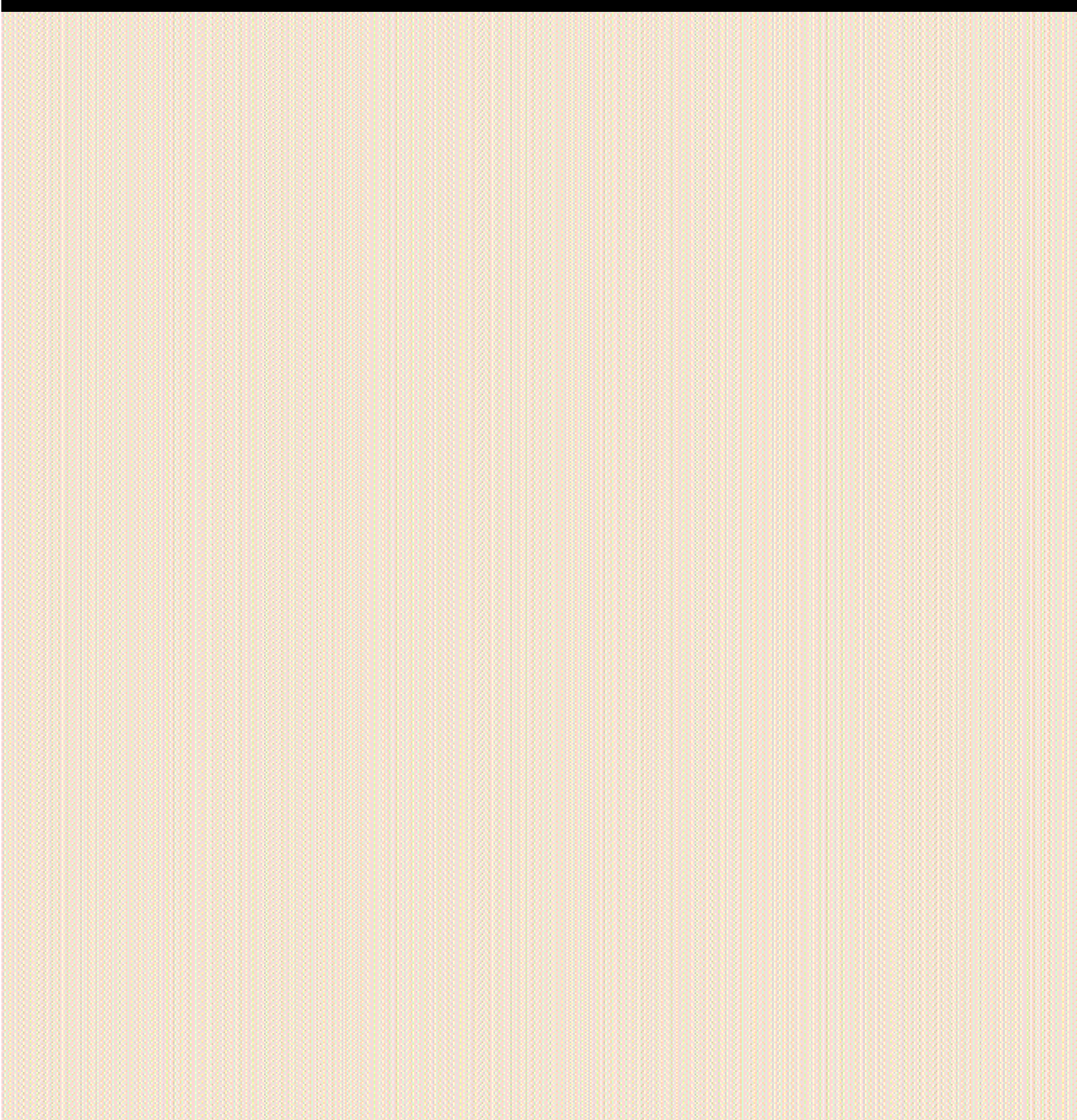
DEFENSE STANDARDIZATION PROGRAM OFFICE
8725 John J. Kingman Road
Fort Belvoir, VA 22060-6221

(703) 767-6888

dsp.dla.mil