

STANDARDS RELATED DOCUMENT

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FACILITATING THE DEVELOPMENT AND USE OF CIVIL STANDARDS

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30 May 2018

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Zoltán GÜLYÁS
Brigadier General, HUNAF
Director, NATO Standardization Office

TABLE OF CONTENTS

CHAPTER 1: GENERAL

- 1.1. INTRODUCTION
- 1.2. PURPOSE
- 1.3. CIVIL STANDARDS
- 1.4. CONSIDERATIONS ON THE USE OF CIVIL STANDARDS
- 1.5. CIVIL STANDARDS DEVELOPMENT
- 1.6. CIVIL STANDARDS DEVELOPING ORGANIZATIONS (SDOs)

CHAPTER 2: SDO ACTIVITIES

- 2.1. PARTICIPATION
- 2.2. NATO PARTICIPATION IN SDO ACTIVITIES
- 2.3. CRITERIA FOR PARTICIPATION

CHAPTER 3: ADOPTION OF CIVIL STANDARDS

- 3.1. ADOPTING CIVIL STANDARDS
- 3.2. ADOPTION CRITERIA
- 3.3. REFERENCING CIVIL STANDARDS

CHAPTER 4: CONCLUSION

CHAPTER 1: GENERAL

1.1. INTRODUCTION

The NATO Policy for Standardization¹ directs the use of civil standards. Although there is ample room for increasing efficiency by leveraging civil standards, specialised equipment or military procedural interoperability may still require NATO to develop its own standards.

It is in NATO's best interest to make careful and smart choices for where to adopt existing civil standards, to cooperate with civil Standards Developing Organizations (SDOs) and transfer NATO standards to civil SDOs.

1.2. PURPOSE

The purpose of this document is to facilitate NATO's use of civil standards in accordance with the NATO Policy for Standardization and AAP-03² by providing information about relevant civil standards characteristics and SDO procedures. This document:

1. Describes different types of civil standards and the civil SDOs that develop them.
2. Provides advice on Tasking Authority (TA), Delegated Tasking Authority (DTA) or NATO Body involvement in the development, adoption and use of civil standards.
3. Clarifies the roles and responsibilities of the TA, DTA, and Custodians or NATO Points of Contact when they participate in civil SDO activities on behalf of NATO.
4. Identifies criteria for the transfer of an existing NATO standardization document to a civil SDO.

1.3. CIVIL STANDARDS

A civil standard is a standard published by a civil standards developing organization and made available to the public. Civil standards are developed, established and coordinated by civil SDOs. Civil SDOs are unique organizations with specific interests and a variety of different memberships, standards development processes, voting and funding mechanisms. The standards produced by these civil SDOs reflect this variety.

¹ NATO Policy for Standardization, PO(2016)0315

² AAP-03, Directive for the Production, Maintenance and Management of NATO Standardization Documents

1.4. CONSIDERATIONS ON THE USE OF CIVIL STANDARDS

There are several issues or requirements to consider when selecting civil standards as a solution to a NATO standardization requirement. They are:

1. **Interoperability Requirements.** NATO's contribution to a comprehensive approach to maintaining international peace and security requires cooperation with non-military actors, including international organizations (IOs), non-governmental organizations (NGOs), agencies and relevant local bodies in the area of operations. Multidimensional operations often require mutual support of civilian capabilities to military forces and vice versa, facilitated through civil-military cooperation (CIMIC). These interactions may raise interoperability requirements, which could call for the use of civilian standardization solutions in cooperation with appropriate civilian agencies. Examples include the restoration and/ protection of essential services like water, medical care, transportation systems, and electrical power supply. Increased use of civilian operational and materiel standards by NATO and cooperation with civil SDOs in the development of standards contributes to NATO's interoperability with non-NATO actors in operations.
2. **Technology Development.** Technology development in industry has been increasing rapidly for decades, often surpassing defense. Allies cannot afford to keep their armed forces equipped with defense-unique technologies when there are suitable commercial alternatives. Keeping pace with technological advancements and development is extremely difficult without close cooperation with industry. Therefore, it is vital for NATO to leverage the subject matter expertise of defense and industry personnel for the development and enhancement of technology and standardization documents that are mutually beneficial to the military and industry.
3. **Cost.** There is an increasing customer base for dual-use equipment, technology and techniques, which can satisfy both civilian and military needs. Police, border control, gendarmes, first responders, private security firms and others are increasing consumers of technology once only used by the defence or military community. For information technology, telecommunications, aerospace and electronics sectors, defence accounts for only a fraction of a percentage of demand - civilian consumers dominate and drive this market.

There are costs associated with engaging in civil standardization development activities, and accessing the standards they produce. For example, many civil SDOs finance their infrastructure and, in some cases, ensure profits through membership fees and the sale of standards they develop. While these costs are upfront and highly visible, the cost associated with developing and maintaining defence-unique NATO standards, also exists. These costs are less readily apparent because they are buried in national contributions to NATO. TA/DTAs should consider the short and long-term cost associated with the use of civil standards to ensure selected standards are cost effective for the Alliance.

4. Trade-off. There are trade-offs to be evaluated in the decisions Allies must make to respond to changes in the evolving technology and the fields of standardization. The opportunities for cooperation and technological advancement far exceed the time and finances available to invest in them. Interests, benefits and costs are all relevant considerations, alongside criteria such as accessibility to a broad range of Allies and Partners, suitability to Alliance requirements, technical excellence, currency, and efficiency. Considering all factors – materiel, interoperability, technology, labor and infrastructure of standards development and maintenance, it is obvious that there is a long-term cost advantage to using civil standards.

1.5. CIVIL STANDARDS DEVELOPMENT

To some extent, most standards are developed using certain principles of due process. Due process, as applied to the development, approval, revision, reaffirmation and cancellation of standards, means that any entity (e.g., person, organization, company, government agency, etc...) 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 equal treatment of all contributors to the document development process.

The following are the criteria that define due process in the development of most civil standards. The core principles are openness, voluntariness, interest driven and decisions by consensus. It is important to understand if, and to what extent, civil SDOs adhere to these principles in the development of their standards since that may affect participation decisions.

1. Openness. Participation is open to all those directly and materially affected without unreasonable financial barriers. Voting membership of the civil SDO usually should not be conditional upon membership in any organization, nor unreasonably restricted by technical qualifications or other such requirements.

2. Lack of dominance. No single interest category, individual or organization should dominate 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.

3. Balance. The standards development process has a fair and representative diversity of interests. Civil SDOs seek participants from diverse interests with the objective of achieving balance. The civil SDO should give notification of standards activity in suitable media, as appropriate to provide an opportunity for participation by all directly and materially affected people.

4. Consideration of views and objections. A civil SDO should promptly consider the written views and objections of all participants.

5. Consensus. The civil SDO should document evidence of consensus in accordance with the requirements and procedures of the standards developer. Civil SDO participants should review the by-laws to ensure their understanding of balloting procedures.

6. Appeals. The Civil SDO should have written procedures that contain an identifiable, realistic and readily available appeals mechanism for the impartial handling of procedural complaints about any action or inaction. The civil SDO should address appeals promptly and make decisions expeditiously. Appeals procedures should provide for participation by all parties concerned without imposing an undue burden on them. Consideration of appeals should be fair and unbiased and fully address the concerns expressed.

7. Written procedures. Written procedures should govern the methods used for standards development and review and be made available to those who express interest.

8. It is important to understand if, and to what extent, civil SDOs adhere to these principles in the development of their standards since that may affect participation decisions. This understanding should however not preclude NATO use of civil standards produced by any civil SDOs. NATO should determine whether to adopt a civil standard or not only on the base of the criteria described at paragraph 3.2.

1.6. CIVIL STANDARDS DEVELOPING ORGANIZATIONS (SDOs)

A civil Standards Developing Organization (SDO) is an entity (organization or body) that plans, develops, establishes or coordinates standards, specifications, handbooks or related documents. Civil SDOs include professional, scientific and engineering societies, dedicated standards bodies, trade associations, consortia, and international standards bodies. There are many kinds of organizations with a variety of different membership, diverse background and interest area, voting, standards development and funding models. Some of these differences are described below.

4. Diversity. There is a diverse array of types of civil SDOs, motivations, and interests in developing standards, as illustrated by just a few examples listed here. Corporations and manufacturers across different sectors of industry and technology develop standards. There are industry associations that represent corporations and sectors of industry and technology (e.g. aerospace or electronics), as well as associations of individual engineers, designers, craftsmen, etc. Many of these are civil SDOs and many are users of standards, or customers. Then there are other types of civil SDOs that focus only on developing standards – some for profit, others for national interests, and some for altruistic or charitable purposes. Further, there are regional and international organisations that develop standards, although this is not their core business.

2. Interests. Such a complex array of types of civil SDOs inevitably contains a wide variety of interests, which may not always align well with NATO's interests.

Duplicative and sometimes even competitive standards on the same or similar subject exist. The development, use or implementation of civil standards are sometimes blocked or promoted based on particular interests (such as national industrial base, corporate competitiveness, etc.). Where interests align and outweigh opposition, cooperation is more feasible than where they do not.

3. Membership. Most civil SDOs have finite membership. The same is true for coordination bodies. Not all organizations and bodies relevant to NATO have the same membership. None seem to have universal membership. This complicates information sharing as well as coordination, and can lead to suspicion about motivations, and mixed and confusing messaging.

4. Conclusions. As a consequence, defining and reaching a specific audience for any communication will be complicated by the diversity of types of organizations, their sometimes competitive interests and their overlapping-yet-limited membership. TAs/DTAs would do well to understand motivations and missions of SDOs before deciding to work with them on standardization efforts. Choosing the right civil SDO to contribute to create a solution to a NATO standardization requirement will increase efficiency and lead to positive outcomes, but, it can be a complex task.

CHAPTER 2: PARTICIPATION IN SDO ACTIVITIES

2.1. PARTICIPATION

Among civil SDOs that develop standards that are used globally, there are two main participation models. One model expects participants to participate directly on behalf of their organization, company, agency, etc. in the standards development and management processes. The other model implements the national delegation principle whereby stakeholders' interests are expressed and contributed through national delegates who express the positions of the nationally organized stakeholder groups.

2.2. NATO PARTICIPATION IN CIVIL SDO ACTIVITIES

NATO will cooperate with the most suitable civil SDOs on mutually beneficial standardization projects. When decided by the relevant Tasking Authorities, NATO will adopt non-NATO standards, transfer NATO standards to civil SDOs, or develop new dual use and other standards in collaboration with civil SDOs.³ This may include a subject matter expert serving as a Custodian (NATO POC), in an official capacity, to participate in the activities of a civil SDO. If direct NATO representation at a civil SDO meeting is not possible, the NATO POC may participate through correspondence, online, telephone, or other suitable means. Participation in civil SDOs does not necessarily connote NATO agreement with, or endorsement of, decisions reached by such organizations, or that NATO will eventually adopt the civil standard.

TA/DTA participation in the development of civil standards has many benefits, including:

1. Influencing the content of civil standards to try to ensure that NATO interests are met;
2. Promoting NATO interoperability interests and helping NATO stay abreast of new markets, technologies and industry developments;
3. Providing NATO access to dual-use products in accordance with civil standards;
4. Learning from both manufacturers and end users;
5. Promoting competition and providing a broad base of suppliers.

By being involved with civil SDOs, NATO can communicate information about defense needs early in the civil standards development cycle.

³ PO(2016)0315.

2.3. CRITERIA FOR PARTICIPATION

It is not always necessary for NATO to have active participation in civil SDO committees or working groups. If a product, process, or technology covered by a civil standard is suitably stable, meets NATO standardization requirements, is not for use in a critical or uniquely military application, and is unlikely to see dramatic changes in industry, NATO participation may not be necessary. However, a NATO TA/DTA may have an interest in participation in the following cases:

1. NATO has a significant interest in the practices, processes, or products covered by a civil standard;
2. NATO has requirements that the civil standard must accommodate to be usable;
3. The practices, processes, or products covered by the document are used in critical applications;
4. To stay informed about new technical developments which may change the content of a standard already adopted by NATO, and to influence the direction of standards early in the process;
5. If there is a plan to transfer a NATO standardization document to a civil SDO.

CHAPTER 3: ADOPTION OF CIVIL STANDARDS

3.1. ADOPTING CIVIL STANDARDS

Adoption is the process by which NATO expresses formal acceptance of a civil standard for use by the Alliance. NATO processes concerning participation in civil SDOs and the adoption of civil standards are addressed in AAP-03. NATO POCs should always refer to this resource for definitive information on the adoption of civil standards and transfer of NATO standards to civil SDOs.

The adoption of a civil standard suggests that it is technically adequate to meet the needs of NATO. To ensure a civil standard is suitable, NATO POCs may cooperate with a civil SDO to assist in the development, coordination or review of a civil standard. If a necessary requirement cannot be included in a civil standard, the NATO POC may recommend the development of a NATO Standard or Standards Related Document to augment requirements in the civil standard. The adopted civil standard may then serve as a starting point for a NATO Standard. It may be possible to adopt a civil standard for a portion of a requirement and to develop a NATO standard to address unique military or interoperability requirements that have not been addressed.

3.2. ADOPTION CRITERIA

When determining whether to adopt a civil standard, TA/DTA should base the decision on the following:

1. Suitability in meeting Allied Standardization needs. A civil standard is adopted to meet the needs of a NATO standardization requirement that is documented in a ST.
2. Accessibility. In general, accessibility commonly refers to the inclusive practice of making document content usable by the widest possible number of people. When standardization documents are developed and edited in an open accessible design (format, font, language, file type, etc.), most users can have equal access to information.
3. Broad acceptance. It is crucial that NATO incorporate civil standards that are broadly accepted across defense and civilian boundaries, as it contributes to the advancements in a given subject matter or field of standardization. Broad acceptance benefits industry and the defense community, and is a precondition for commonality and collaborative efforts.
4. Technical excellence. A civil standard is technically excellent when it demonstrates technical rigor in a field of standardization, it clearly takes a crucial step towards solving an outstanding capability gap and it meets the performance expectations of its intended users.
5. Availability in at least one NATO official NATO language.
6. No particular civil SDO should be favored over any other

3.3. REFERENCING CIVIL STANDARDS

Practical referencing of civil standards in a consistent manner and in the appropriate section within a NATO standardization document is a valuable tool that eliminates the repetition of requirements and tests adequately set forth elsewhere. It also helps to minimize the costs of compliance, reduces excessive citation of documents, eliminates ambiguities, and helps to identify which civil standard is required for the implementation of a NATO standardization document. All references, in-text citations, quotations or paraphrasing of civil standards must correspond to an entry in the Normative or Informative References section within the NATO standardization document. Listing a reference in its appropriate section eliminates ambiguity and helps to identify which civil standards are required for the implementation of the NATO standardization document.

1. Normative Reference. Normative references are those directly cited in the document as part of the requirement. When listing a civil standard in this section, use the following convention: the civil SDO, the document's identification number and title, and source for obtaining copies. Where only a portion of a civil standard is needed, the Custodian should specify only the applicable requirements by paragraph or section title or subject matter (do not use paragraph numbers or page numbers as these may change when documents are revised), or directly copy the pertinent portion into the NATO Standardization document after permission of the copyright holder is obtained.

2. Informative Reference. Informative references are those listed for information purposes only and are not part of any requirement (supplementary information). When listing a civil standard in this section, use the following convention: the civil SDO, and the document's identification number and title.

The Standardization Task (ST) that initiated the development of the NATO standardization document where the reference will occur is a useful source of information in determining what qualifies as a normative reference and what is purely informational. If the civil standard is necessary to the "Requirements" or the "Justification" agreed in the ST, then the reference should probably be normative.

CHAPTER 4: CONCLUDING MATERIAL

4.1. CONCLUSION

NATO adopts and uses civil standards both because it is policy and because it makes good sense. This SRD supplements the NATO Policy for Standardization and AAP-03 by providing additional information to facilitate understanding of the area of civil standards – the environment, characteristics, participation, processes, benefits and cautions. Official NATO policy and procedures are in the Policy and the AAP-03; nothing in this SRD supersedes what is in those documents.

4.2. SUPPORT

Additional queries on NATO's use of civil standards and on civil standards and civil SDOs characteristic may be addressed to experts in national defence standardization management bodies, within the Standardization Management Group, or the NSO.