



EUROPEAN  
DEFENCE  
STANDARDIZATION  
JOURNAL



# *All at sea?*

Standardization  
explained

AUTUMN  
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## Editorial 1

By Neil Pitts,

Principal Officer Armaments Cooperation, European Defence Agency

2005 was a life changing year for me and my family. There we were living a fairly normal life in our first family home, with me holding a local job and the children settled at school. But the move from suburbia to Brussels was to happen all too quickly.

A chance conversation with a colleague on a train in the UK and supportive management, saw me, through a number of extraordinary twists of fate end up in a new Agency, comprising talented staff who wanted to do something positive for European Defence.

You may be asking yourself what's the point of this prologue. Well it is this. Often it is not you who change things but the people around you. The same can be said about the standardization initiatives reported in this journal. It has been the expertise and energy of the European Defence Agency's (EDA's) participating Member States (pMS) and other stakeholders who have transformed a rather simple line in the EDA's 2006 work programme into tangible and beneficial outputs.

*"...promote and support the standardization efforts of industry and governments"*

The EDA merely provided the environment for this to happen and to agree a policy to focus standardization efforts:

*"...to increase, in cooperation with pMS and Industry, the transparency and commonality of standards used in defence procurement, with the aim of enhancing interoperability and reducing acquisition costs"*

So in less than two years we have seen the emergence of an EDA Standardization Agenda, the reinvigoration of the European Handbook for Defence Procurement, and 26 Member States of the EDA agreeing to set up a European Defence Standards Information System and to use a common set of guidelines for the selection and use of standards.

With the foundations sound, the future is exciting. We are now seeing standardization recognised as a key catalyst for coherence in international projects such as Unmanned Air Vehicles Air Traffic Insertion. Commonly agreed standards in these areas, and hopefully others in the future, are set to encourage investment, provide interoperable equipment and enhance the market share for industry's technologies, much like the Global System for Mobile Communications (GSM) standard did for mobile phones at the turn of the 1990's.

The above initiatives are all explained in more detail within this Journal, together with other valuable contributions from Member States, the European standardization bodies and industry. The overall aim is to explain the strategic benefits of using commonly agreed standards in defence acquisition to those not directly involved in standardization, and provide transparency to those who are. This is a one-off journal but if readers consider it a success then there could be others.



## Editorial 2

By George McClintock,

Head of Communications, UK Defence Standardization

When I was asked to co-edit this journal for the European Defence Agency I jumped at the chance. It is a great honour to be associated with a new pan-European defence standardization journal. The opportunity to reach out

across Europe to standardization professionals is one that was too good to miss.

As someone who has been in the standardization business for over seventeen years, I recognise only too well how difficult it is to spread the standardization message. The subject is often portrayed as dull, prescriptive and dare I say it 'unsexy'. However the reality is that smart standardization is a driver for greater interoperability and more effective acquisition. Standardization can also pull through into the mainstream some of the more innovative technologies being developed by the various defence research institutes.

Inside we feature articles on the European Defence Standards Information System (EDSIS) and a Standardization Management Workshop held in Slovakia, both good examples of innovative thinking. EDSIS provides a great opportunity for participants to work together in the development of best practice standards whilst holding down the associated development costs.

The Slovakian Workshop is an example of active co-operation between participating Member States and other nations in standardization management and could well be the catalyst for improved standardization management both nationally and multi-nationally.

I firmly hold the belief that managed effectively, today's innovation is tomorrow's standardization.

The co-ordination of inputs for the Journal from across Europe has been an enjoyable task. I have been impressed with the range and scope of the articles that we (your co-editors) have been able to assemble and the undoubted wisdom and experience of the contributors.

We set out to publish a Journal that gives the reader an overview of some of the standardization work being undertaken in Europe and also to highlight the benefits of using standards and effective standardization management. I believe this aim has been fulfilled within these pages.

Finally, I would like to thank the United Kingdom MoD, Glasgow Graphics Studio led by Alun Bevan for doing an excellent job on the design of the Journal. On looking over the completed pages, I hope the readers will agree that the layout and design complements the high quality of the articles.

# The Materiel Standards Harmonization Team - A View from the Chairman

By Stefan Otterbach, Bundesamt Für Wehrtechnik Und Beschaffung - T 5.5, Germany



The MSHT stands for the Materiel Standards Harmonisation Team. Yes, there was “a life before the MSHT” in form of the Western European Armaments Group (WEAG) Standardization Team. But without going into too much detail the WEAG standardization Team was formed to deal with the challenges for standardization identified in the Commission-

funded ‘Sussex Study’ of 1999, which reported on the “Standardisation Systems in the Defence Industries of the European Union and the United States.” These challenges for standardization have been around for around 8 years, of which the MSHT has been active for the last 2 years. And those 2 years have without doubt made a significant contribution to materiel standardization and enhancing cooperation amongst the members of the MSHT. The major achievements are highlighted in the box opposite.

The MSHT has received valuable support from the EDA in its efforts to improve standardization for defence materiel in Europe. The development of an EDA Standardization Agenda is already a clear signal of what needs to be achieved: to develop defence materiel standardization on a European level into a major tool for improving the interoperability of defence equipment and hence the interoperability of our armed forces.

Nevertheless we still have to do more. To identify a standard as the best practice one, to ensure its further development and to make it, as I call it, “binding for future use in defence materiel procurement” is still under discussion. Of course standardization is a voluntary process, and of course project managers for defence materiel should select the standards for their project and decide on their use, but surely it is in everyone’s interest to select those standards already identified by the experts as best practice ones?

Also how to provide standardization support directly to emerging and ongoing projects has to be discussed. The Unmanned Air Vehicles article in the Journal is a good example of where standardization can play a significant part in the shaping of projects. There is also the influence of new trends such as transformation and its effect on standardization which needs to be considered. These will keep our activities on a practical level and ensure the MSHT has a balanced agenda.

Reflecting on what the MSHT has already achieved and to see the ever-increasing drive, determination and will of the MSHT members to share the work in standardization, as well as members’ openness to discuss issues relevant to standardization makes it a privilege and a pleasure for me to be their Chairman.

- **The MSHT** has addressed almost 75% of the Sussex Study’s 32 recommendations and will produce a final report of its findings in early 2008. We did not only read the ‘Sussex Study’ but we made a work-plan, prioritized how the recommendations should be addressed, worked on them and then delivered real outputs and products.
- **The MSHT** conceived the European Defence Standards Information System, developed it through the EDA, and Member States are now using the EDSIS to increase transparency in national defence standardization.
- **The MSHT** members have enhanced their cooperation in the development of defence standards by combing their shrinking national resources in joint endeavours. For example, United Kingdom and Germany have drafted a common defence materiel standard in a technical area not addressed by other available standards.
- **The MSHT** has in some respect overcome the steady decrease from 2003 in technical standardization conducted within NATO. There is now an increasing use of civil standards in those areas no longer addressed by NATO, typified by the key areas 1 to 8 of European Committee for Standardization (CEN) Workshop 10 - see the European Handbook for Defence Procurement (EHDP) article in this journal.
- **The MSHT** has put governments in much closer connection with civilian standardization bodies than ever before, most notably through the development of the EHDP.
- **The MSHT** has identified that the best approach for reducing the overall number of standards would be to use the “best practice” one identified in the EHDP and attempting to combine future efforts in the further development of these standards only. For example, the recommendation is to rely on and use the Allied Environmental Conditions and Test Procedures (AECTPs) of NATO for environmental testing of defence materiel.
- **The MSHT** has for quite a while been trying to establish links to the armed forces as interoperability of their equipment, and hence the overall effectiveness of international operations is affected by materiel standardization and they are the big players in operational standardization. We know that we have to do more here and the newly formed EDA Materiel Standardization Group will help, as input from the front line is included on its Agenda.
- **The MSHT** is an active forum to discuss standardization needs for European defence materiel.



## *Managing the use of standards for the acquisition of defence materiel*

*By Dave Wilkinson, Head of International Standardization, UK Defence Standardization and Hans Kopold, Bundesamt Für Wehrtechnik Und Beschaffung - T 5.5, Germany*



The multi-national Materiel Standardization Harmonisation Team (MSHT) has reached agreement on the criteria for the selection and use of defence standards for use in the acquisition of defence materiel. This was approved by the European Defence Agency (EDA) Steering Board in September 2007. Readers should not be surprised to learn that the criteria focuses on using civil standards wherever possible.

However, the drive to use civil standards brings its own problems. A product manufactured according to civil standards and intended primarily for the civil market, will very often be adequate for defence applications. There are also cases where commercial products do not satisfy the more stringent requirements of defence materiel with regard to performance, quality, reliability, natural and induced environmental stress to name just a few. Therefore, civil standards do not always meet the defence requirement in full and it may, as a first option, be necessary to ask the relevant civil standardisation

body to modify an extant civil standard accordingly. Where a requested modification is not feasible, simply because there is no suitable civil standard available or a modification to an extant standard will not be acceptable to the civil body, then the drafting of a national defence standard will be justified.

Before starting a new materiel defence standard project, opportunities for cooperation with other European nations should be explored. The opportunity for collaboration has now been enhanced by the creation of EDA's European Defence Standards Information system (EDSIS) which allows nations to list their major standardization projects and seek development partners.

If a suitable civil standard becomes available which satisfies the requirements for a particular defence materiel application, a corresponding materiel defence standard should not be used for any future projects, declared obsolescent where it is still supporting equipment in-service and cancelled once the in-service need is satisfied. However, the cancellation of a defence standard in favour of a civil standard can also bring its problems if subsequent revisions of the civil standard do not take into account the defence requirements. Therefore, it is important to monitor any developments in civil standards that are also used for defence purposes. In this case, procurement authorities are in the same position as any stakeholder in civil standardization i.e. they need to ensure their needs are still being met by the relevant standardization body.

# *The European Defence Standards Information System - doing things together*

By EDA

It is becoming increasingly important in standardization for the EDA's participating Member States (pMS) and stakeholders to work together on materiel standards to increase likelihood of cooperative programmes, enhance the interoperability of our military equipment, and make the end products more attractive to international markets.

David Wilkinson, Head of International Standardization in the UK and Hans Kopold from the Federal Office of Defence Technology and Procurement in Germany, explain how the idea for a European Defence Standards Information System (EDSIS) emerged and why it will be so useful in coordinating the development of new materiel standards.

## **Where did the idea for EDSIS originate?**

D.W - Hans and I have been working in international standardization for many years and we realised that it was not always easy to keep other nations, industry and the civil standardization bodies aware of the development of new materiel standards. We would discuss proposals for new standards in or around the various meetings in the EDA, NATO and other fora but we couldn't always reach the right stakeholders in the right time. We needed something new, coordinated and transparent, and somebody to do it. The nations' standardization management experts were already meeting under the umbrella of the EDA where the idea for EDSIS was discussed, matured, and brought to the EDA Steering Board. It was remarkable just how quickly EDSIS took shape and became an operational system.

Image courtesy of Belgian Defence DG IPR



## How does EDSIS work?

H.K - Like all good ideas, EDSIS is very simple. A participating Member State of the EDA enters a short summary of the intended materiel standard to be developed or modified, any attachments, and the contact details of their nominated standards manager. All registered users of EDSIS then automatically receive notification of the proposal and are asked to indicate their interest in participating in the development of the standard. In most cases the standards manager will wish to ensure that he is not duplicating ongoing standards development and the right stakeholders are engaged. This is especially important in the civil sector (industry) as their standards are now being selected over equivalent military standards in the specifications for military products. This is all part of emerging best practice in the selection and application of standards - another area in which we are working with the EDA.

## How does EDSIS attract these wider stakeholders?

D.W - Visibility to stakeholders such as industry, standardizations bodies, NATO and nations outside the EDA is provided through the open EDSIS website (<http://www.eda.europa.eu/edsisweb>), where they too can express an interest in participating in the development of the new standard or the major modification of an existing standard. EDSIS allows the standards manager to continuously monitor who has expressed an interest in his standardization project. After a pre-determined period, he then decides who he wishes to invite to cooperatively draft the standard. Thus, the overall aim of EDSIS is to identify, very early, the right standardization management and technical experts and to put them together - so important if we are to increase the number of multi-lateral standards and reduce dependence on standards for national use only.

## What next?

H.K - We expect the number of standards projects to be published in EDSIS to grow markedly. Plus there are plans to enhance the level of information contained in EDSIS by including information on standardization best practice, news, actors and initiatives, mostly through website links. EDSIS would then become the main electronic portal for European defence standardization activities.

D.W - EDSIS is a natural partner to the European Handbook for Defence Procurement (EHDP), which is featured in a separate article in this Journal. This is because standards initiated or modified via EDSIS are by their very nature "best practice" standards and therefore it is logical these standards should be quoted in the EHDP. EDSIS can also be used to initiate the development of standards to fill the gaps in the EHDP identified by the expert groups. I have no doubt that EDSIS has great potential.



# “A Reference of Best Practice - The European Handbook for Defence Procurement”

By Françoise Lebadezet, Chair of CEN Workshop 10 and EADS Head of Standardization, France and Philippe Chépine, Centre de Normalisation de Défense, France



## European Handbook for Defence Procurement

The EHDP was born at the turn of the millennium when the Commission gathered standardization experts to debate the role of standardization in improving the efficiency and competitiveness of European defence procurement. One of the key recommendations was the creation of a European Handbook for Defence Procurement (EHDP) that would provide a catalogue of “best practice” standards and standard-like specifications. For the first time, defence project managers would be able to reference standards in their contracts that had been recognised by European government and industry as the best of their kind. Furthermore, the EHDP would provide information on the role and effect of these standards to enable project managers to call up these “best practice” standards properly in their defence contracts.

*“...the EHDP... is set to become the reference set for defence procurement standards...”*

Work started in May 2002 under a European Commission funded European Committee for Standardization (CEN) workshop agreement, which saw a multinational consensus-based approach taken to the assessment and selection of standards. As you can imagine bringing together government and industry experts from across Europe to develop the EHDP had its strategic benefits:

- Assisting in strengthening the European industrial and technological base through the use of “best practice” standards related to industrial know-how.
- Providing a common, multi-national reference set of standards that will help reduce the barriers to armaments cooperation and enhance the interoperability of equipment.
- Allowing more effective competition as internationally recognised standards and dual-use standards are preferred over equivalent national standards.
- Helping to rationalise the 10 000 plus standards presently used for defence procurement to a more manageable and efficient number.

It is clear that the EHDP will play a significant part in optimising the defence acquisition process, and provide a

recognised European standards portfolio and guidance in defence procurement matters.

The primary target audiences for the EHDP are those staff in the ministries of defence who are producing procurement specifications and invitations to tender, and those in defence companies who are responding to these requirements. For these staff the EHDP has two main functions. First, to reduce the risk of incorrect standards being specified in the invitations to tender by governments and secondly to allow industry to check whether an optimal, cost-effective, choice has been made. So the EHDP can be used to judge contract proposals as well as to generate lists of ‘best practice’ standards.

*“...the EHDP can be used to judge contract proposals as well as to generate lists of ‘best practice’ standards.”*

The EHDP is adaptable to the differing needs of defence programmes. For example it is possible that no standards are referenced in the invitation to tender. A government may simply require a new weapon system be interoperable with a “defined” range of other weapon systems and their support systems. It would then be for the bidder to identify the necessary standards to ensure compliance. And hence in this case it would be the bidder and the subcontractors who will be using the EHDP.

The identification of “best practice” standards is a significant step but in some ways the justification of their selection by the experts is equally important. All too often we see standards quoted in invitation to tenders that are superseded or even cancelled, often causing delays and cost increases as anomalies are resolved post-contract let. One cause is can be attributed to a lack of timely expert advice. After all, few standards can be quoted by procurement staff without the assistance of a subject matter expert in determining the applicability of a standard to a specific project or product. The EHDP provides such advice, presently in eight expert areas but this is expected to reach 16 expert areas by the end of 2008, plus its design allows for emerging standardization needs and applications to also be incorporated.



You can access the EHDP at [www.defense-handbook.org](http://www.defense-handbook.org)



It would be wrong to leave the reader with the impression that the EHDP is perfect. It is not. There are still areas in which it can be improved and developed - for example guidance on the role and selection of standards at different points in the supply chain; introducing maintenance processes to ensure the currency of information; and improving the interface with its users. But it is fair to say that the EHDP is already operational and adding value, it is continually being improved and it is set to become the European referential for standards in defence procurement that is orientated towards world-wide civilian standardization.

*"...the European referential for standards in defence procurement."*

## Shaping Standards for Industry from Industry

By Günter Lessman, ASD-STAN Director, AeroSpace and Defence Industries Association of Europe



ASD-STAN, previously known as AECMA-STAN, establishes, develops and maintains standards requested by the European Aerospace and Defence Industry for worldwide use and applications.

ASD-STAN is registered as a non-profit Association under Belgian law and acts as "Associated Body" to the European Committee for Standardization (CEN), the

European Standardization Organization established by the European Commission. ASD-STAN acts as "Sole Provider of Aerospace Standards" to CEN. ASD-STAN cooperates with ECSS, European Cooperation for Space Standardization, to which it has delegated the establishment of Space related standards.

ASD-STAN establishes prEN pre-Standards according to industrial needs which subsequently are transformed into EN European Standards following CEN rules, for subsequent publication as national Standards within all 30 CEN member countries. Additionally ASD-STAN establishes TR Technical Reports and currently prepares for a new type of European Industrial Standard.

ASD-STAN activities are self-financed through membership fees from its member states Germany, France, United Kingdom, Italy, Spain, Sweden and Belgium and by sale of prEN and TR. It is also sub-contracted by SBAC Society of British Aerospace Companies for the sale of SBAC Technical Specifications. ASD has mandated ASD-STAN for the sale of their documents *ASD-STE100™ Simplified Technical English* and *ASD S2000M: International Specification for Material Management - Integrated data processing for military equipment*.

### A Streamline Process

In 2006 ASD-STAN started 40 new work items and has completed the establishment of 100 new and revised standards. From its stock of prEN and from new standard

developments ASD-STAN, in 2006, published 224 EN via CEN. The current stock of standards maintained by ASD-STAN is 1163 prEN and 253 TR. 88 new standards and standard revisions are currently in process. ASD-STAN acts as Standards Management Leader for the International Aerospace Quality Group (IAQG), i.e. ASD-STAN coordinates the worldwide publication of Aerospace Quality Standards.

[www.cen.eu/cenorm/businessdomains/businessdomains/security+and+defence/defence/index.asp](http://www.cen.eu/cenorm/businessdomains/businessdomains/security+and+defence/defence/index.asp)

This article has attempted to explain the significance and vitality of the EHDP. You can find further information in the EHDP General Framework Paper also available at the above web link. The Framework Paper provides readers with a reminder of the strategy behind the EHDP and advice to standardization experts and managers on the guidelines and criteria for selecting and applying standards in the most cost-effective way.

ASD-STAN cooperates with the American Aerospace Industries Association (AIA) and with the American Society of Automotive Engineers (SAE) for common standardization activities. Further intensification and expansion towards global cooperation is foreseen in the near future.

For further information please see <http://www.asd-stan.org>

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The working structure of ASD-STAN is part of the organizational environment of its member associations and their member companies. The current ASD-STAN working structure comprises the following Domains and Sectors throughout 7 European countries:

#### D1 Engineering Procedures

LOTAR LOng Term Archiving and Retrieval of digital technical product data  
MOAA Modular and Open Avionics Architecture  
ICE Ideal Cabin Environment

#### D2 Electrical

General, Cables, Connectors, Relays, Protection Devices, Lamps, Batteries, Harnesses Components, Data Bus, Optical

#### D3 Mechanical

Parts of mechanical systems, Fasteners, Hydraulics

#### D4 Metallic

Aluminium, Titanium, Heat resisting alloys, Steels, Test methods, Welding / Brazing

#### D5 Non-Metallic

Elastomers / Sealants, Thermoplastics, Adhesives / Honeycomb, Paints / Varnishes, Surface treatments, Composite Material, Textiles, Ceramics

#### D6 Quality

European Aerospace Quality Group

If you are interested in participating in one or more of these working groups, please do not hesitate to contact us by email: [contact@asd-stan.org](mailto:contact@asd-stan.org).

# European Standards: a tool to integrate markets

By Hugues Plissart de Brandignies

CEN, the European Committee for Standardization, Director New Standardization Opportunities



The Europe in which we live today is a Europe with a single market meaning a market with free movement of goods, persons, services and capital. Barriers to trade are being eliminated through the development of common European Standards: this is the mission of CEN ([www.cen.eu](http://www.cen.eu)), the European Committee for Standardization,

CENELEC, the European Committee for Electrotechnical Standardization and ETSI, the European Telecommunication Standards Institute, all three organizations recognized by the European Union.

These European Standards are founded on consensus, a consensus reflecting the economic and social interest of 30 countries channeled through their National Standards Bodies (NSBs) which are the CEN Members.

Although most are initiated by industry, a significant number of these standards have been developed to support European legislation. "Reference to standards" within a legislative text is viewed as a more effective way of ensuring that products meet the essential health and safety requirements of legislation than the writing of detailed laws.

This does not mean that standards are drafted in regional isolation. CEN has an agreement with the International Organization for Standardization (ISO) through which common European and International Standards can be developed in conjunction. Indeed, more than 30% of the European standards adopted by CEN are identical to International Standards and many more are closely related.

## A European standard is shaped by those who contribute to its development.

European Standards are drafted by experts in specific fields. In building European consensus, industry, trade federations, public authorities, academia and defence NGO representatives are invited to contribute to the standardization process. It is this open participation which accounts for the strength of European standardisation. Once the draft of a European Standard reaches a mature stage, it is released for public comment, a process known in CEN as the CEN Enquiry. During the public commenting stage, everybody who is interested (e.g. manufacturers, public authorities, consumers, etc.) may comment on the draft. These views are collated by the NSBs and sent to the CEN Technical Committee for consideration.

## One European Standard= thirty identical national standards

A European Standard is adopted by the 30 CEN National Standards Bodies (NSBs) through a system of weighted

votes. After publication by CEN, each of the NSBs is obliged to adopt the European Standard as an identical national standard and to withdraw any pre-existing national standards which are in conflict with the new European Standard. Hence one European Standard becomes the national standard in the 30 member countries of CEN. CEN aims to deliver most European Standards in three years.

## CEN Workshop Agreements

It is also possible for parties involved in the standardization process to request swifter standardisation solutions through the CEN Workshop (WS) structure and process. CEN WSs are flexible structures that benefit from wide openness and consensus which are key values of CEN.

The procedures for setting up and operating Workshops are deliberately kept to a minimum and all the decision-making powers rest with the interested parties themselves - the members of the Workshop. These include all market players (industry, service providers, administrations, users and consumers) and they can come from any part of the globe. They are responsible for the funding and direction of the Workshop and for the approval of the deliverables. The main activity of a CEN Workshop is the development and publication of a CEN Workshop Agreement.

## The defence area

The defence-related part of the aeronautical, space, electronics, land systems and shipbuilding industries has been left out of the remit of the internal market. The Member States have maintained their national control over defence equipment markets and related industries and as a result their own traditions and procedures for procurement. They also continue to refer to national standards in their calls for tender. The consequence is a continuous fragmentation of market and industry and a loss of European competitiveness internationally.





# Standardization of Military Equipment - The need for cooperation

By Hans Kopold, Bundesamt Für Wehrtechnik Und Beschaffung - T 5.5, Germany

In order to adapt to the drastic changes in the global security situation, the Atlantic Alliance adopted a new strategic concept in 1991. In addition to the traditional Alliance objective of collective defence, this concept provides for the formation of multinational force structures, in order to be able to stand up to the great variety of new crisis management tasks. With this decision the necessity of further-reaching operational and materiel standardization becomes even more important than before. The following article explains why standardization is so important.

## Standardization / "Normung" – Civilian and Military Definition of Terms

Standardization / Standard – Normung (Normalization) / Norm are synonyms which, despite gradual differences, are largely used in parallel in civilian German usage. Although the English language also knows the term norm, the English usage largely uses only the terms standardization and standards. In the military sector the term standardization – also on an international level – covers a far greater area than the definition of "Normung" as known in German usage.

Now, how is Normung (Normalization) and standardization defined? Well DIN 820 Part 1 precisely defines the term "Normung" as follows:

*"Normung" is the planned standardization of tangible and intangible items for the benefit of the public, jointly performed by interested circles."*

The Hungarian definition of the term as contained in the law on national standardization is also interesting.

*"Standardization is an activity which offers generally or repeatedly applicable solutions to existing or expected problems in order to achieve the most favourable organizing effect under the existing conditions."*

Contrary to these two definitions from the primarily civilian standardization sector, the present NATO definition of the term standardization is as follows:

*"The development and implementation of concepts, doctrines, procedures and design to achieve and maintain the required levels of compatibility, interchangeability or commonality in the operational, procedural, materiel, technical and administrative field to attain interoperability."*

Thus, the military sector also aims at standardization both for tangible (design) and intangible (concepts, doctrines, procedures) "items".

## Interoperability

With the terms compatibility, interchangeability, commonality the NATO definition of standardization already hints at the core requirement for interoperability which is imperative for multinational international operations.

*"The ability of Alliance forces and, when appropriate, forces of Partners and other nations to train, exercise and operate effectively together in the execution of assigned missions and tasks."*

The degree of interoperability achieved has a major effect on the efficiency = combat power of forces employed in multinational operations.

## Levels of Standardization

Each standardization effort, of course, aims at the application of absolutely identical operational procedures



as well as the use of identical equipment (commonality) by all armed forces participating in a combined operation. Even though the necessity of materiel standardization has been realized, the progress made in the Atlantic Alliance in this area over the past decades is today still far from what it should be. Higher levels of standardization could usually be easier achieved in areas where no national industrial interests were at stake.

Judging from a pragmatic point of view, one comes to the conclusion that absolutely identical equipment is not imperative for ensuring the interoperability of combined multinational forces. Largely in line with terms and definitions of international civilian standardization, NATO differentiates between the following three levels of standardization:

**Compatibility** - *“The suitability of products, processes or services for use together under specific conditions to fulfil relevant requirements without causing unacceptable interactions.”*

**Interchangeability** - *“The ability of one product, process or service to be used in place of another to fulfil the same requirements.”*

**Commonality** - *“The utilization of the same doctrine, procedures or equipment.”*



## Objectives of Military Standardization

Depending on the prevailing system of values, the standardization of defence materiel within a coalition can either be basically ordered or, as is usual in civilian standardization, be achieved by mutual consent of the participants after technical discussions. While in the former Warsaw Pact a “standardization” of Soviet equipment – with a few exceptions – was normal, the cooperation in NATO standardization projects as well as the subsequent national implementation of the standardization results has always been voluntary.

Defence materiel standardization in a multinational environment comprises the process of formulation, harmonization, implementation and updating of standards for application by the participating nations. Standardization is a means to increase the efficiency of joint multinational forces. The national implementation of commonly achieved standardization results is also a demonstration of the will to cooperate and of general solidarity within an alliance. They contribute to a more efficient utilization of the generally limited budgetary funds of the member states.

In summary, the advantages of materiel standardization in a multinational environment may be defined as follows:

- Improvement of the interoperability of systems and equipment through the use of standardized interfaces.
- Limited variety of necessary items of supply and optimum use of standardized parts.
- Safeguarding of common logistic supportability.
- Avoidance of parallel expenditures for research, development and testing of defence materiel.

### Consolidation on a European Level

Despite undeniable setbacks in the past it has to be acknowledged that the following facts contributed and will contribute in future to improve the overall situation regarding the standardization of defence materiel in Europe:

- the increased bilateral and multilateral cooperation in the implementation of major armaments projects,
- the foundation of the joint organization for armaments cooperation (OCCAR),
- the foundation of the European Defence Agency (EDA),
- the activities of the Materiel Standards Harmonization Team (MSHT),
- the European Handbook for Defence Procurement (EHDP),
- the introduction of the European Defence Standards Information System (EDSIS)
- the actual results of the consolidation on the European and international armaments market,
- and finally, the quasi-standardization due to the market success of individual European defence technology products.

A number of the above are covered by separate articles in this Journal.

# Standardization Management Reform - a view from Italy and France



## **Towards a Significant Commonality of Standardization Management Practices among Member States**

*By Roberto Presaghi from the General Secretariat of Defence in Italy.*

What is currently happening in the European context, concerning the

standardization of defence materiel, is an interesting increase in the number of occasions for exchanging views amongst Member States.

This process stems from a number of effective initiatives of the EDA, in cooperation with the Materiel Standardization Harmonization Team (MSHT). The MSHT is a group of experts which is considered the “engine room” of the Agency in the matter of defence materiel standardization and which an ever increasing number of States, not only from the European Union, have decided to join.

The EDA, believing in the potential of the MSHT and proactively participating in it, is successfully building its standardization policy and the associated road-map. A primary goal is to provide all the participating Member States (pMS) of the EDA with a complementary context with respect to the well-established cooperation with the NATO, avoiding giving birth to any unnecessary duplication.

The first outcomes of the effort to create the widest participation on these issues are the availability of tools to the pMS, aimed at enhancing their active cooperation.

The European Defence Standards Information System (EDSIS) has a primary role among the above mentioned tools. The EDSIS is an IT platform managed by the EDA, aimed at promoting cooperative materiel standardization projects, and is subject of another article in this Journal. It is envisaged that the EDSIS will prove extremely useful, especially in the light of a recent change of the standardization activity, shifting from compliance with, to anticipation of, new technologies. Consequently, the purpose of standardization is shifting from purely technical to strategic and cooperative-driven. Along this route, the cooperative materiel standardization can provide a valuable contribution to the European Defence Technological and Industrial Base (EDTIB) enhancement, which is one of the main strategic strands of the EDA. As a matter of fact, behind a standard there is a potential technology, which in turn is tightly linked to the development of an industrial ability or know-how. These mechanisms are crucial to the creation of a European Defence Technological and Industrial base, driven by innovation and autonomy.

Moreover, cooperative standardization, due to national budgets constraints, is being recognised as a high added value activity, in comparison with the development of national based standards; in fact, it allows pMS to share know-how, development costs and technological assets.

From the perspective of an active cooperation, the recently created EDA Materiel Standardization Group (MSG) is another primary tool, which provides the framework to turn pMS proposals into actions, once approved by the EDA Steering Board. These tools, in order to be properly exploited, require the involvement of all the functional levels within each national organization for standardization management. This implies a tight symbiosis and good communication among the interested stakeholders. In the defence standardization management these stakeholders are from policy, industry and the project teams, who are the main users and, at the same time, one of the primary actors of the standardization process. A sound and interactive link among representatives at European and NATO working groups is also needed.

Although national organizations for defence standardization management might have different structures, the current feeling is that there can be a significant commonality in the activities needed to benefit from this new cooperative context for standardization.

There is no doubt that every national organization is an expression of the relevant national sovereignty with the aim to put into action well defined policy statements, but the EDA by gathering Member States on defence materiel standardization issues (using MSHT and the MSG as facilitators), is paving the way to a common vision that can be translated, in the near future, into the adoption of common best practices for cooperative materiel standardization management.



Image courtesy of EU-EUFOR



## The French approach

By Philippe Cambraye,  
Centre de Normalisation  
de Défense, France

Reorganised in 2003,  
the new French  
Standardization  
Organisation (FRA SO) is  
built upon 3 key points

- light structure
- joint structure
- coordination structure

The FRA SO is a network-based organisation in order to conduct the French standardization process

- The French Standardisation Centre (Centre Normalisation de la Défense) is the MoD focal point for management and coordination of standardization activities
- Standardization Focal Point (BCN) corresponding at each main MoD bodies , NATO focal Point and Standard Responsible Officer
- Joint Standardization Committees for coordination, consultation and information , seconded by Ad Hoc working Groups (Lessons Learned WG for example)
- Standardization Joint Committees dealing with specific domain (paints and coatings for example)
- The Standardization Coordination MoD-Industry Committee for maintaining the National Standardization Portfolio for Armament Program

A standardization steering committee ensures the overall coordination. Co-chaired by the Chief of Joint Military Staff and the Director of the French Armament Procurement, this committee defines the standardization policy for both operational and technical domains. It also approves goals, action plan and necessary means to achieve them.

The French standardization approach is based upon an optimized standardization policy which guides actions:

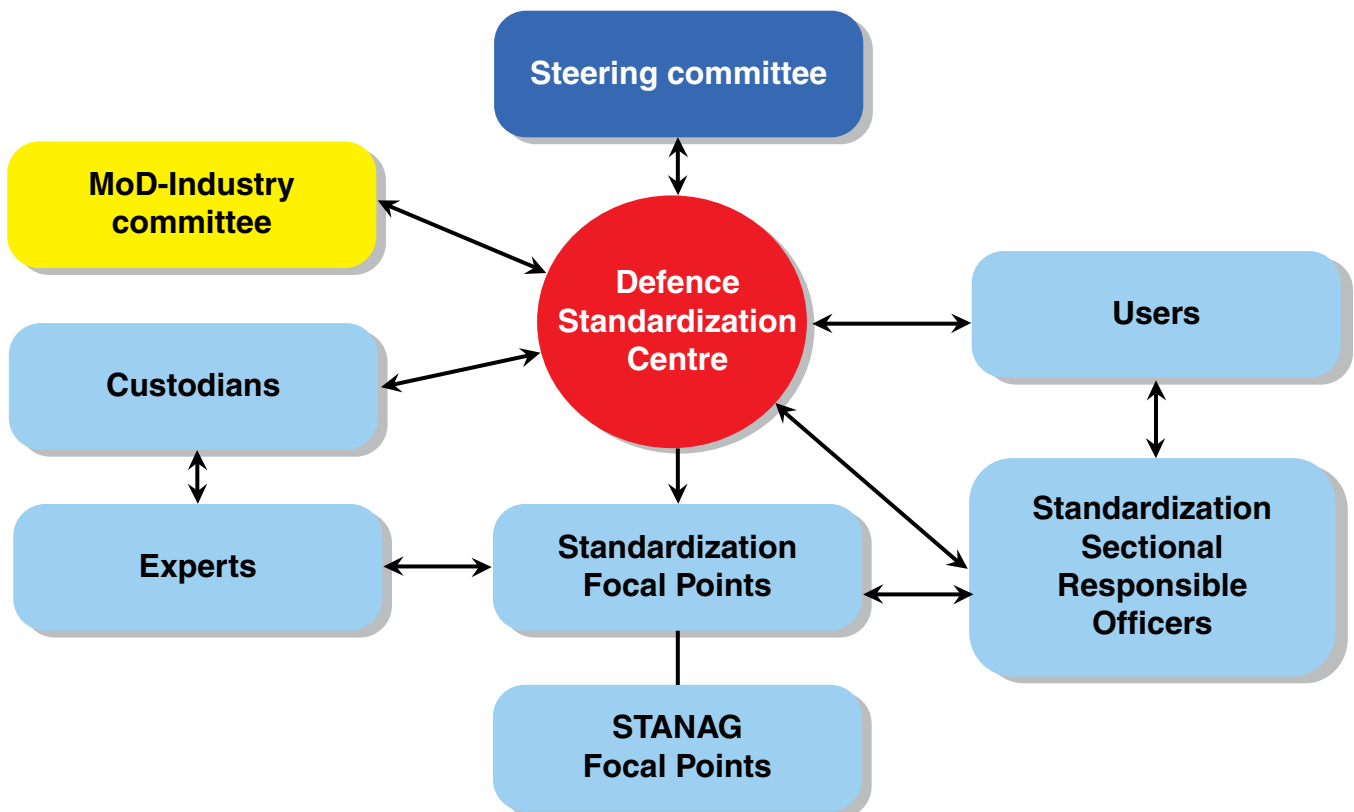
- To reach goals with associated stakes
- Ensuring interoperability between forces, systems or national and international organizations
- Strengthening European Industry/Technology Base development
- Increasing an operational- cost effectiveness

With the driving factors based on a real synergy between:

- EUROPE (Armament Industry, EDA)
- NATO (Military Interoperability)
- Civil Standardization Organisations

Following guiding principles:

- To prefer civil or dual use standards (recognized standards on a worldwide or European scale)
- To permit access to standards from a common tool
- To monitor the implementation of standards
- To receive continuous feedback to update standards



# A perspective to join up defence standardization

By Līva Veita, Deputy Head of Standardization, Latvia



A standard is something that seems to be as old as time itself. With evolution has come a set of rules and laws. Of course in our daily life many rules are unwritten and yet we understand them through our attitude in social events, dress code at work etc. Laws tell us what we can and cannot do. So in a way rules and laws are themselves kinds of standards. Rules and laws also exist in defence

and these are set with defence standards - some of them are general, some of them specific and detailed. And it is through the process of defence standardization and the application of standards that we plan, organize and achieve interoperability between our armed forces.

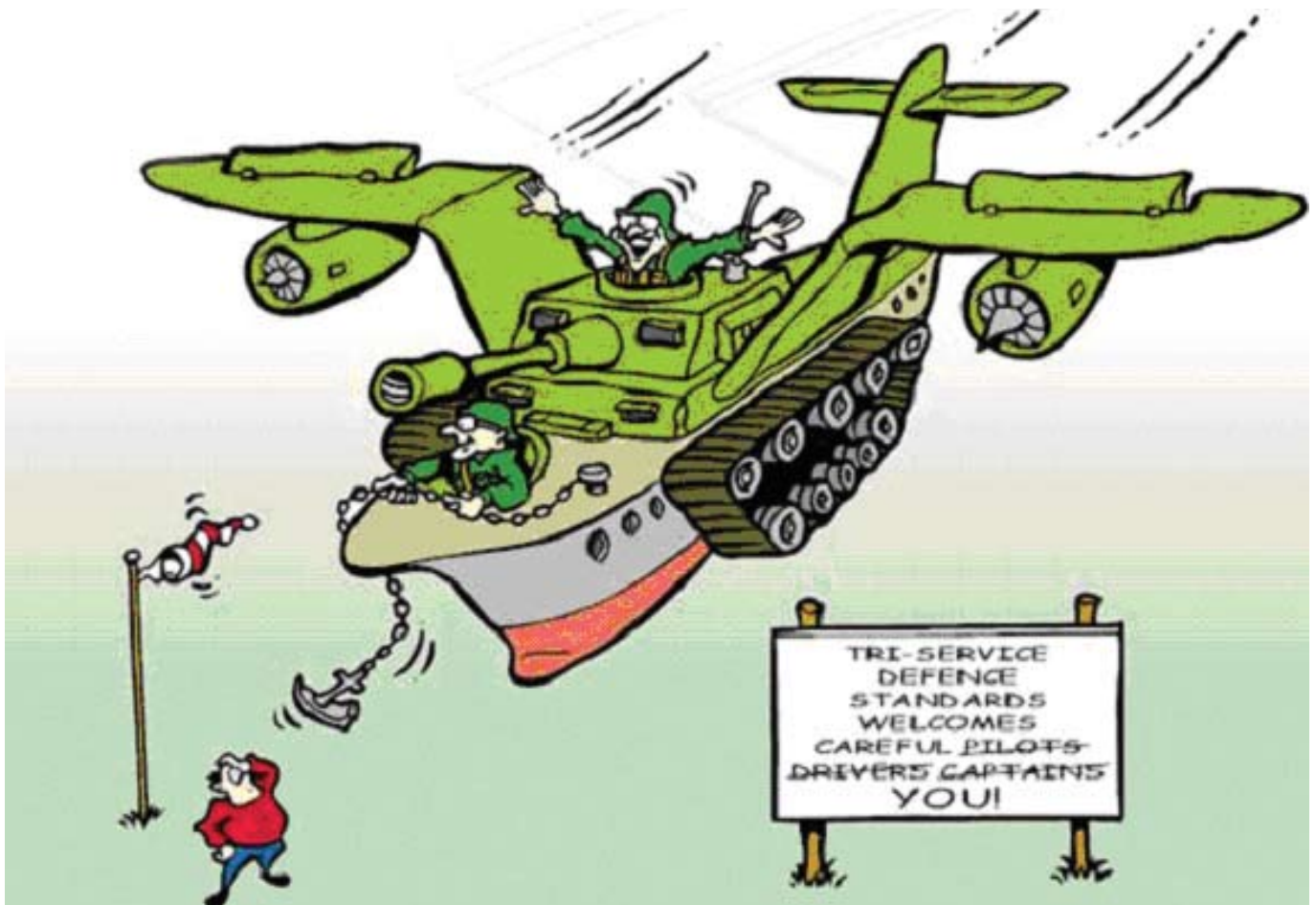
Until very recently military and civilian standardization worked separately. The North Atlantic Treaty Organization (NATO) undertook operational and material standardization, while the European Union (EU) also worked on material defence standardization. Sometimes this resulted in duplication, or a doubling of experts' efforts that ultimately had financial and efficiency implications.

The situation is better now but duplication still remains – broadly speaking, the civilian world uses civil standards and military world uses a mix of civil and defence standards (usually Standardization Agreements

(STANAGs)). In many instances there are 'competing' defence and civilian standards. For example the NATO Allied Quality Assurance publications (AQAP's) has an equivalent civilian standard in the International Standardization Organization ISO:9001. To my knowledge the ISO standard incorporates parts of AQAP's and yet these two standards coexist. Surely there would be merit in applying best practice and to agree to use only one of these two standards?

My favourite example to show the benefit of agreeing on a common standard is the letter country codes. Some years ago the military used two letter codes – for Latvia it was "LG". Latvia, as a member of NATO, has ratified STANAG 1059 ("Letter Codes for Geographical Entities"), which means Latvia is obliged to use three letter codes wherever possible. With this new three letter system, the code for Latvia is "LVA". Presently, the three letter code system has been used for correspondence only, because the costs to change existing defence systems are enormous as the implementation would have to be done to all defence systems at the same time to avoid confusion and to be sure that the right information is being used.

This is not the end of the story. As a member of the European Union (EU), Latvia is using the two letter code used in the EU. Not the former military two letter code but now "LV". As it happens most of the civilian world is using this code also - so as this constitutes the majority use, this should set the standard shouldn't it? But alas it is not so easy. You can still take three different documents and find in each of them different country codes being used: the old military two letters, new military three letters and the civilian two letter codes! So where is the





standardization here? In my opinion we need to come to a best practice approach here also.

Taking into account both of my examples, there is need to think about best practice standards which should be common for the EU and NATO.

Since end of 2004 the NATO Standardization Agency (NSA) has signed several technical agreements not only with civilian standardization bodies like ISO, the European Committee for Standardization (CEN), the European Committee for Electrotechnical Standardization (CENELEC) and the European Telecommunications Standards Institute (ETSI), but also with national standardization organisations like the American National Standards Institute (ANSI). This has been done to avoid the need to produce new standards when already existing ones can be used instead, albeit in some cases with minor modifications to address specific defence needs. Additionally the Europe Defence Agency (EDA), who is bringing together its participating Member States in defence materiel standardization, is committed to the use of existing standards, including civilian and NATO standards, to the greatest extent possible. This bodes well for the future.

## *Guidance for the selection of standards for the specification of defence materiel and related services*

*By Dave Wilkinson and Hans Kopold*

Project Managers are often faced with a plethora of standards from different origins to choose from when they are specifying the required capabilities of defence materiel or related services.

The multi-national Materiel Standardization Harmonisation Team (MSHT), which is recognised by the European Defence Agency (EDA) as its source of materiel standardization expertise, has reached agreement on the preferred standards selection process for the specification of defence materiel and related services. This was approved by the European Defence Agency Steering Board in September 2007.

A key recommendation is that priority should be given to standards that describe requirements in "output and performance" terms rather than in prescriptive terms.

Another key recommendation is that consideration should be given to standards whose application in particular fields of technology is recommended in the European Handbook for Defence Procurement (EHDP) ([www.defense-handbook.org](http://www.defense-handbook.org)). These standards have been identified as "best practice" standards by national experts so an element of the selection process has already been undertaken and will prove beneficial to the Project Managers once the EHDP maintenance process has been installed.

Whenever we talk about selecting standards, the policy to "use civil standards wherever possible" is quoted. However, before we reach that stage there are two higher requirements to consider. Firstly, the need to apply those standards etc. which are referred to in "laws, ordinances and statutory provisions" and are relevant to the project. The application of these documents is mandatory, as far as there is no exception being provided for military applications.

Ideally, national technical experts from NATO groups should attend the EDA working groups and civilian standardization bodies working groups to reduce the risk of duplication. But because of the shrinking resources this is not usually possible, especially for a smaller EU Member State like Latvia, so information on what is going on is of paramount importance. This is where new tools like the Europe Defence Standardization Information System (EDSIS) and the Europe Defence Procurement Handbook (EHDP), described elsewhere in this Journal, will help.

We cannot afford anymore to have two or more standards in parallel, and we cannot send experts to a lot of meetings. So the world of materiel standardization needs to continue to be planned and organized, and having in mind future EU operations, I hope also that the intention to use existing operational standardization of NATO will become a reality too.

In summary I would like to say that from my point of view there is a lot of good work being done and the results are evident, however there is still room for improvement in the common approach to defence standardization and for sure we should continue to address this.

Secondly, achieving Force interoperability is of paramount concern when operating in joint missions with allied forces. Taking these interoperability requirements into account, the application of materiel related international military alliance agreements (e.g. NATO Standardization Agreements (STANAGs)) should be given a top priority particularly, if the nation has ratified it with the intention of implementation. It has also to be taken into account that very often requirements, which for a whole range of applications are generally specified in a STANAG, may be implemented for particular applications by means of national defence standards or national standards-like documents.

Once we have taken the above requirements into consideration, we can enter into the selection process which is not an order of importance but reflects governments' policies to use civil standards wherever possible and reduce our reliance on defence specific standards. The following standard category listings should be reviewed to identify the most suitable standards or standards-like documents:

- a. National civil standards transposing European Standards.
- b. National civil standards transposing International Standards.
- c. Other International, European or national civil standards including commercial standards widely recognized by industry.
- d. National defence standards and standards-like defence materiel specifications
- e. Suitable foreign defence standards
- f. Company/Consortia Standards

# A New Military Standard for “Documentation Management for C4IEW Systems”

By Col Dimitar Dimitrov, Military Standardization, Quality and Codification Directorate, Bulgarian MoD



The basic military standard used to introduce Communication and Information Systems (CIS) in the Bulgarian Armed Forces (BAF) is MS 40095:1991 “Defence Automated Control Systems - development and implementation”. The standard outlines the procedures for study, development and implementation/modernization of Automated Control Systems for defence

purposes, when the Ministry of Defence (MoD) is a contracting authority.

However, the problem we have faced is that this standard, together with other military standards in this area, do not meet the European Union (EU) and NATO requirements as specified in the respective NATO Standardization Agreements (STANAGs). As a consequence, the required levels of compatibility of BAF command, control, communication, computers and intelligence (C4IEW) systems with the NATO ones are at stake. The standard also lacks the requirements for some important characteristics of C4IEW systems such as Quality Assurance throughout the system lifecycle as well as the IT security.

To solve the problem, Military Standardization, Quality and Codification Directorate - MoD in cooperation with the General Staff - J6 has initiated the development of a new military standard “Documentation Management for C4IEW systems”. The standard is intended to fulfil the following main objectives:

- To ensure compatibility of the BAF C4IEW systems with the NATO ones;
- To standardize the methodology and procedures for the development of BAF C4IEW systems within the architectural framework laid out in the MoD Information Strategy Concept;
- To fill the gaps, generated by national standards, which were cancelled without being superseded (BSS 24 - 86 "Documentation for Automated Control Systems. General issues" and BSS 19 - 80 "Integrated software support system. General issues");
- To bring the current Bulgarian Information Technology (IT) military standards into compliance with the architectural framework of C4IEW system requirements.

The standard is planned to have a single number and a series of 23 separate parts based on the three information architectures - operational, systematic and technical. Until the new standard comes into force, the contractors and users have available NATO STANAGs, Allied Quality Assurance Publications (AQAPs), Allied Reliability and Maintainability Publications (ARMPs) etc. as well as the ISO/IEC International and European standards. Lots

of them have been transferred into national standards known as Bulgarian State Standards (BSS). The Bulgarian Institute for Standardization, as a member of ISO and IEC, participates in the development of international standards through Bulgarian representatives in the Technical Commissions.

These International/European standards have been and remain major contributors towards providing the BAF experts with the general requirements framework on Software Quality Assurance throughout the software lifecycle, starting from the concept stage through to the disposal stage. That framework comprises also the requirements for the acquisition and supply processes for software products and services, verification processes, as well as the requirements for procedures, methods and enterprise environment management. Thus these standards provide a considerable pool of requirements from which our experts may extract an appropriate set that meets the desired objective. The international requirements are composed in a way that makes them suitable for a diverse set of organizations and projects. They are applicable in cases where the software is either a separate unit or an integral part of a sophisticated information system.

However, the management process within Bulgarian MoD and BAF is unique and for that reason we need a military standard to focus on that process. It has to specify the military bodies involved, their responsibilities and activities as well as the respective documentation. Each stage has to be clearly defined with its input and output, entry/exit criteria and the respective players in the documentation management. As far as the technical



requirements are concerned, it is the International/European standards and NATO Standardization Documents that have to provide the solution. Concerning the documentation management within the MoD and BAF it is the new military standard that has to face these challenges.

The essential standards to use for software design, development, implementation and utilization are BSS ISO/IEC TR 12207:2004 and its supplement BSS ISO/IEC TR 12207:2004/A1:2004 that covers software lifecycle processes. Furthermore, BSS ISO/IEC TR 15271:2004 can be used as a manual for their application and BSS ISO/IEC TR 16326:2004 - as a manual for information projects management. The early involvement of the contactor and the user into the software development process is something new in our practice and deserves attention. That involvement could happen as early as the concept stage and continue with permanent control to assure the project's quality.

Some framework requirements for design of information systems in view of lifecycle processes are addressed

in BSS ISO/IEC TR 14759:2004, which introduces the manual for methods and mechanisms to provide a quality of service. BSS ISO/IEC TR 10014:2004 contains instructions for the economic effect management of software quality.

In the area of information security there are many international standards transferred into national ones. The most valuable for BAF in terms of practice are the standards that define and regulate information security management.

The implementation of International and European standards in the field of Quality Assurance and IT security alongside with NATO standardization documents is of utmost importance to achieve interoperability of BAF C4IEW systems with those of NATO and EU member nations. With this in mind, the new Bulgarian military standard, which will use the best practices of NATO and EU members, is expected to ensure effective documentation management processes in response to the present-day challenges.

## *More Effective Standardization Management - Outcome of the Slovakian Workshop (Sept 07)*

*By Miroslav Marusin,*

*Defence Standardization, Codification and Government Quality Assurance Authority, Slovak Republic*



In the times that we live now in, when technologies and industrial markets are increasingly global, there is a pivotal role for standardization to remove the barriers for technologies and products and help them to attain the most competitive prices.

In line with the Standardization Policy of the EDA, the Material

Standardization Harmonization Team (MSHT), as a body of governmental defence standardization experts who meet to share the best practice in the material standardization field, took an initiative to maximize the opportunity to extend the involvement of the nations in the creation of more effective standardization management. The Slovak Republic agreed to host the Standardization Management Workshop which took place in Bratislava on 25th and 26th September 2007. 40 delegates from 15 countries and representatives from the EDA, European Committee for Standardization (CEN), Deutsches Institut für Normung e.V. (DIN) and European Committee for Electrotechnical Standardization (ETSI) participated in the Workshop.

The main sessions of the Workshop were:

- Managing a Defence Standards Portfolio
- Cooperation between Civil and Defence Standardization Bodies
- Multilateral Cooperation in the Preparation of Defence Standards and
- International Standards Interface Management

Each session was led by one of the Lead Nations - United Kingdom, Germany or France - and was composed of presentations, supplemented by question and answer sessions, which provided the ideal conditions to achieve the main workshop aims which were to:

- Maximize the opportunity to exchange information
- Provide a clearer picture of where there is a "European" or "fragmented" approach
- Identify problem areas where more detailed study is required
- Identify areas of synergy suitable for promotion within EDA
- Provide nations with the opportunity to develop partnerships
- Identify areas ripe for future cooperation
- Identify the need for further workshops (possibly with greater industry involvement)
- Agree on a greater integration of standardization activities

*"...there are many things we do well, but also a lot where we could do better."*



Delegates to the Slovakian Workshop

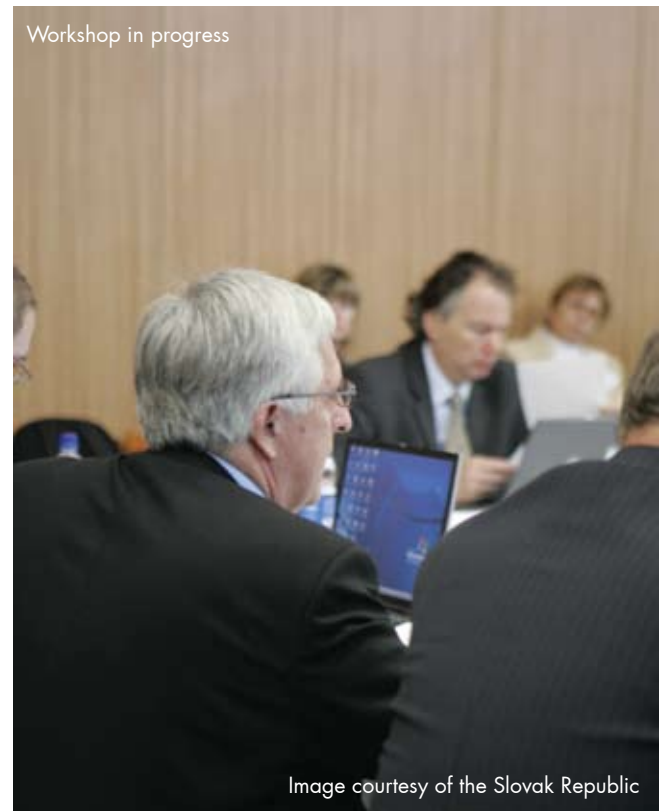
Image courtesy of the Slovak Republic

The first evaluation of the findings demonstrates that the workshop was extremely successful. We discovered that there are many things we do well, but also a lot where we could do better. Nations have agreed to prepare and/or amend their inputs to the key issue questions and their responses will be reviewed to identify areas of agreement and divergence. From this will be developed a framework document on what constitutes the “best practice” in standardization management or in other words, a “best practice” standardization management organisation that represents an idealistic centre of standardization excellence. From this framework document is expected to emerge standardization management priorities to become the subject for MSHT discussion, further workshops and subsequent action. The overall aim is to utilise this best practice and to converge standardization practices so that nations are more confident in working together.

*“...a “best practice” standardization management organisation.”*

The Slovakian workshop is really just the beginning and the responses from the nations, from standardization organizations and discussion at the MSHT will determine the next steps. What we have already, is participating nations being encouraged to explore opportunities for bi / multilateral cooperation, for closer involvement of industry and civil standardization organizations, and inputs to explore possibilities for centralizing standardization activities by the EDA undertaking some tasks on behalf of its participating Member States.

Finally, we would like to extend our personal thanks to the Workshop’s chairman David Wilkinson from the United Kingdom Defence Standardization Organization (DStan) for his assistance in the preparation of the workshop. His efforts are a good example of the desire that is shared by many nations, to maintain and enhance standardization management.



Workshop in progress

Image courtesy of the Slovak Republic

# Defence Technology Standardization in Germany

By Hans Kopold, Bundesamt Für Wehrtechnik Und Beschaffung - T 5.5, Germany

The Federal Office of Defence Technology and Procurement (BWB), as part of the civilian Bundeswehr administration, is the largest technical authority in Germany. It is the heart of the armaments organization and a higher federal authority of the Federal Ministry of Defence. Its primary task is to supply the Bundeswehr with state-of-the-art equipment at economic conditions. The BWB has a central responsibility for managing armaments projects - except Information Technology Projects - and is also the responsible point of contact for industry. This task is derived from Article 87b of the German Basic Law where the "meeting of the direct material demand of the armed forces" is assigned to the Bundeswehr administration.

The general core tasks of the BWB also comprise – for the entire armaments organization – the central responsibility for:

- policy issues of defence materiel standardization,
- cooperation with the Deutsches Institut für Normung e.V. (DIN) (German Standardization Institution),
- coordination of the drafting of German Defence Materiel Standards together in cooperation with defence industry and with the DIN,
- the implementation of international standardization results into national development and procurement documents (e.g. Defence Materiel Standards and technical specifications).

Based on a contractual agreement, the DIN cooperates with the armaments organization in national, European and international standardization activities, if the MoD (represented by the BWB) claims an interest in such standardization.

Thus, armaments organization representatives have the opportunity, through their cooperation in DIN standardization committees, to ensure that defence technology relevant aspects are considered in DIN standards. This way the armaments organization represents its specific interests in standardization work similar to other "interested circles".

When realizing military capabilities, the armaments organization basically aims at using commercially available products. Thus, the application of civilian standards is always of prime importance. If, however, the inclusion of defence technology requirements in civilian standards is not possible or not possible in time, defence materiel standards (VG & WL standards) may be developed for Bundeswehr purposes. The consideration of existing NATO STANAGs has priority in the elaboration of VG & WL standards.

VG & WL standards have the same status as DIN standards, are also reviewed for topicality every 5 years and are available from the Beuth-Verlag (the publishing house of DIN) like other national and international standards.

At present, a total portfolio of approximately 1,600 VG & WL standards is updated regularly.





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Based on the contractual agreement between the Federal Minister of Defence and the DIN, the DIN operates two standards offices for managing defence technology standardization:

- Electrical Engineering Standards Office (NE) in Koblenz
- Naval and Maritime Engineering Standards Office (NSMT) in Hamburg

In addition, the DIN furnishes capacities for general defence equipment standardization and a limited number of VG standards will be managed by some other DIN standards committees.

While the bodies of the Electrical Engineering Standards Office (NE) exclusively develop VG standards, the working program of the Naval and Maritime Engineering Standards Office (NSMT) also covers the entire area of civilian "merchant ship standards". Due to the increased application of merchant ship standards also for German Navy projects, armaments organization experts also work on a number of these civilian committees.

Analogously to civilian standardization, defence technology standardization work is generally performed by the "interested circles" in specialized committees and working groups. In addition to armaments organization experts, these bodies are also open for cooperation by experts from relevant industry. Normally the proportion of governmental experts to industry experts in these bodies is about 1:9.

Annual contracts between the Federal Minister of Defence and the DIN the armaments sector contributes together with industry and DIN (through selling of the standards) to the funding of the drafting process for German Defence Materiel Standards which is being performed in

the relevant DIN offices / committees. The decreasing importance of purely defence technology standardization and the increased application of civilian standards also for defence materiel, enabled the Federal Minister of Defence to reduce this financial contribution by about 60 % between 1998 and 2007.

In addition to defence materiel standards, other forms of "technical procurement documents" are used for the development, but especially for the procurement of the follow-on demand of defence technology products. Of particular importance are the Technical Specifications (TL) of the BWB. The majority of these documents describe fully developed products like clothing, hardware and commercial goods, where the standardized description allows a repeated procurement on a competitive basis while ensuring continuous product and quality characteristics over a long service life.

TL are developed by the competent technical experts of the BWB, if required by consulting the relevant companies. Their layout to the most possible extent is in accordance with the requirements for drafting and presentation of civilian standards and they must also be reviewed for topicality every 5 years. In their section "Normative References" TL also refer to civilian standards (DIN, European Norm (EN), International Standards Organisation (ISO) etc.) as well as to military standards (VG, United States Military Standard (MilStd) etc.). A complete list of all applicable TL of the BWB is available on the internet at the BWB homepage. Most of the TL (except only those for sensitive materiel like weapons and ammunitions) are even available for free download as a pdf file. A free e-mail newsletter service is offered, after corresponding registration, on changes to the database. In addition, the release of new and revised editions of BWB TL and of VG standards are, announced in the monthly DIN bulletin (DIN Anzeiger).

# Standards set to unlock Unmanned Air Vehicles

## Air Traffic Insertion

By EDA

Presently Unmanned Air Vehicles (UAVs) can only operate in restricted National European Airspace, where operations are treated as exceptional, one time events and authorization to fly is granted only on a per mission basis under a National Flight Authority regulation. With such restrictions in place the huge potential for UAVs remains untapped.

The regulatory framework applicable to cost effective UAV operations is immature and needs to be evolved and validated if we are to open to market for UAVs. Operational commanders and the civilian security sector would then be able to employ UAVs more flexibly and effectively, for example by flying a direct route to a target or surveying enemy locations residing within a civilian infrastructure or surveying illegal immigration along national borders. For this to happen, there needs to be common agreement on the levels of safety UAVs must reach and associated standards developed and validated.

*"...there needs to be common agreement on the levels of safety UAVs must reach..."*

Today's manned aircraft are certified with focus on the safety of the people onboard. For UAVs to fly in non-segregated airspace they will need to demonstrate much higher levels of safety than is currently achieved for UAVs, to reduce the risk of catastrophic events in the air and on the ground. A regulatory framework for UAV flights in non-segregated airspace comprises 3 pillars: airworthiness, flight crew licences and operations (or 'rules of the air'). Unmanned military aviation standards exist but are still to be validated for the first two pillars:

- ratification-draft STANAG 4671 "Unmanned Aerial Vehicles Systems Airworthiness Requirements"
- ratification-draft STANAG 4670 "Recommended Guidance for the Training of Designated Unmanned Aerial Vehicle Operator (DUO)"



Image courtesy of M. Alleaume, Dassault Aviation



Image courtesy of BAE SYSTEMS

Agreement on the 'rules of the air' is less mature. Investment is needed to enhance UAV technologies and demonstrate that safety levels are achievable and can be referenced confidently in future standards.

The European UAV companies, the Commission and the EDA met at the end of 2006 and identified a common objective: "to open European Air Space and have the required technology demonstrations in order to produce UAVs that can routinely fly across national borders." This common objective was supported by the Defence Ministers in May 07 where they stressed the importance of having a unified European position on UAV Air Traffic Insertion and to focus foremost on the development of standards, which should be defined in alignment with other initiatives in NATO or in the US. An EDA Road Map study has been commissioned and is expected to report in mid 2008 on the procedural and technological challenges that remain.

European industry needs sufficient economies of scale both at home and abroad to be confident of a return on their investment. The future military market for UAVs would be insufficient to amortise costs of development and certification efficiently. Unit production costs would be uncompetitive or even unaffordable. Future, internationally competitive UAVs would therefore need to transcend the civil, security and defence sectors. And common, validated standards could be the catalyst.



Image courtesy of EADS Defence & Security Military Air Systems



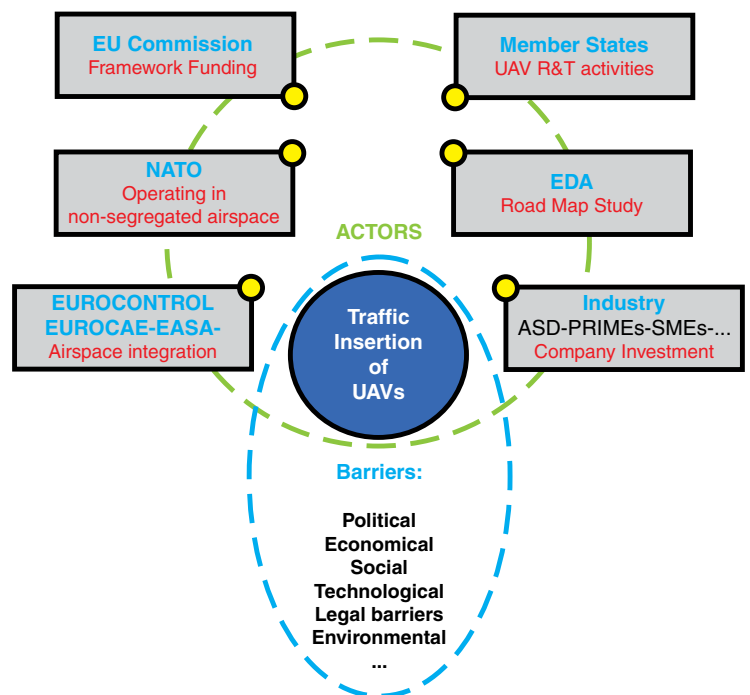


It would not be the first time that standards have been used in such a way. The GSM started with a common European standardization effort that would allow mobiles to connect through base stations and networks around the world, and a handset from any manufacturer to be used throughout Europe. It was the European GSM standard that enabled European industry to cooperate, innovate and invest - and thus remain at the forefront both in sales and in the development of new products.

European standards for the various elements of UAV Air Traffic Insertion could have a similar impact on investment in those expensive, leading edge technologies that have traditionally come from military projects such as 4th Generation Fighter Aircraft (Eurofighter, Rafale and Gripen) and the strategic airlift capability A-400M. With no major replacement programmes on the horizon, there is a growing interest in UAVs to provide the stimuli for Europe to retain and develop its technological edge in the aeronautical sector.

Some of the main actors are represented in the figure below. The EDA can become the catalyst through which the diverse interests of this UAV community can be focused to produce consensus-based standards that are for the benefit of Europe.

This initiative satisfies the military needs to operate UAVs without limitations and will provide the end users with more capable UAVs, while the agreed, common and validated standards will provide the confidence for industry to invest and provide products that will take advantage of the market provided by opening airspace. Then European technology would in effect be recognised through the international acceptance of these standards. But none of this can happen unless there is a common agreement on the levels of safety that UAVs must attain.



## Benefits of Standardization

Standardization helps achieve Force interoperability and reduces associated risk in areas of operational, materiel and information exchange.

Standardization enables quality of product/service/life (safety, health and environment).

Standardization provides for economy in manufacture and servicing.

Standardization improves collaboration e.g. between countries or contractors.

Standardization provides a recognized yardstick against which products/ processes/ services can be assessed.

Standardization ensures the supply of unambiguous technical statements for reference or contractual purposes.

Standardization results in a reduction in the risk of dependence on specific vendors.

Standardization ensures the avoidance of repetitive effort in producing new specifications, processes and products for each procurement.

Standardization promotes industrial efficiency through variety control.

Standardization reduces the need to produce project/ equipment specific components and process specifications.

Standardization exploits best practice.

Standardization helps to achieve and demonstrate a consistent level of equipment safety and conformity to regulations.



# EDSIS

European Defence Standards Information System

The screenshot shows the EDSIS website interface. At the top, there is a navigation bar with the EDA logo and the text 'European Defence Agency' and 'European Defence Standards Information System'. Below this is a banner image showing a group of people in a meeting. The main content area is titled 'edsisweb > Projects' and contains a table of projects. The table has columns for 'Title and Scope', 'Type', 'Status', 'S', 'Deadline', and 'Updated'. The table lists several projects, including 'Fuel Cells', 'Defence Standard 68-287 Part 2 - Test Data and Data Sources, Guide to the Compatibility of Materials with Oxygen', 'Defence Standard 68-287 Part 1 - Guidance Guide to the Compatibility of Materials with Oxygen', 'Defence Standard 22-94 issue 1: Specification for the Manufacture of Replenishment at Sea Hoses and Hose Assemblies', 'Interim Defence Standard 66-31: Basic Requirements & Tests for Electronic & Electrical Test & Measurement Equipment, Part 7: Guidance on the evaluation of COTS TME solutions in applications where the TME environment differs from the operational platform environment', 'Interim Defence Standard 66-31: Basic Requirements & Tests for Electronic & Electrical Test & Measurement Equipment, Part 6: Requirements for General Purpose TME Applications', 'Interim Defence Standard 66-31: Basic Requirements & Tests for Electronic & Electrical Test & Measurement Equipment, Part 5: Contractor Requirements - Land Use Application', 'Interim Defence Standard 66-31: Basic Requirements & Tests for Electronic & Electrical Test & Measurement Equipment, Part 4: Contractor Requirements - Heavy Use Application', 'Interim Defence Standard 66-31: Basic Requirements & Tests for Electronic & Electrical Test & Measurement Equipment, Part 3: Contractor Requirements - Air Use Application', 'Interim Defence Standard 66-31: Basic Requirements & Tests for Electronic & Electrical Test & Measurement Equipment, Part 2: Contractor General Requirements', and 'Interim Defence Standard 66-31: Basic Requirements & Tests for Electronic & Electrical Test & Measurement Equipment, Part 1: Introduction and Guide to the Specification and Selection of Test and Measurement Equipment by the Procuring Authority'. The table also includes a 'Refresh' button and a 'Subscription' section with 'Accepted', 'Pending', and 'Denied' options.

Title and Scope	Type	Status	S	Deadline	Updated
<b>Fuel Cells</b> - The Supplementary standard under development defines the Environment and Performance Tests for a Self Contained Man Worn Man Portable Methanol Fuel Cell System. This system will operate without the need for an external hybridised battery or other energy s...	New	Published		31/01/2008	31/10/2007
<b>Defence Standard 68-287 Part 2 - Test Data and Data Sources, Guide to the Compatibility of Materials with Oxygen</b> - This document provides oxygen compatibility test data for non-metallic materials obtained by or provided to the MOD, and provides references to other sources of test data for both non-metallic and metallic materials...	New	Published		31/05/2008	30/10/2007
<b>Defence Standard 68-287 Part 1 - Guidance Guide to the Compatibility of Materials with Oxygen</b> - This Standard aims to provide guidance on the use of materials in oxygen enriched atmospheres, such as gaseous and/or liquid oxygen, by reference to other documents and standards...	New	Published		31/05/2008	30/10/2007
<b>Defence Standard 22-94 issue 1: Specification for the Manufacture of Replenishment at Sea Hoses and Hose Assemblies</b> - This Defence Standard 22-94 specifies the details for the materials, manufacture, testing and packing of 54 mm bore and 153 mm bore reinforced synthetic rubber hoses and hose assemblies, for Replenishment at Sea (RAS). Please Note: This is a recently co...	New	Published		31/05/2000	12/06/2007
<b>Interim Defence Standard 66-31: Basic Requirements &amp; Tests for Electronic &amp; Electrical Test &amp; Measurement Equipment, Part 7: Guidance on the evaluation of COTS TME solutions in applications where the TME environment differs from the operational platform environment.</b> The above Defence Standard has been published as an Interim Standard and is provisional because...	New	Published		31/05/2008	12/06/2007
<b>Interim Defence Standard 66-31: Basic Requirements &amp; Tests for Electronic &amp; Electrical Test &amp; Measurement Equipment, Part 6: Requirements for General Purpose TME Applications</b> - Part 6 defines the requirements for General Purpose Electrical and Electronic Test and Measurement Equipment used, by the services, in Moderate environments. Guidance is presented on the use of General Purpose TME in onerous environments. The above Defend...	New	Published		31/05/2008	12/06/2007
<b>Interim Defence Standard 66-31: Basic Requirements &amp; Tests for Electronic &amp; Electrical Test &amp; Measurement Equipment, Part 5: Contractor Requirements - Land Use Application</b> - Part 5 defines requirements specific to Land Service TME procurement. The environments in which equipment is required to operate are quantified through the application of test limits. The test methods and procedure by which the contractor shall demonstrate...	New	Published		31/05/2008	12/06/2007
<b>Interim Defence Standard 66-31: Basic Requirements &amp; Tests for Electronic &amp; Electrical Test &amp; Measurement Equipment, Part 4: Contractor Requirements - Heavy Use Application</b> - Part 4 defines requirements specific to Heavy Service TME procurement. The environments in which equipment is required to operate are quantified through the application of test limits. The test methods and procedure by which the contractor shall demonstrate...	New	Published		31/05/2008	12/06/2007
<b>Interim Defence Standard 66-31: Basic Requirements &amp; Tests for Electronic &amp; Electrical Test &amp; Measurement Equipment, Part 3: Contractor Requirements - Air Use Application</b> - Part 3 defines requirements specific to Air Service TME procurement. The environments in which equipment is required to operate are quantified through the application of test limits. The test methods and procedure by which the contractor shall demonstrate...	New	Published		31/05/2008	12/06/2007
<b>Interim Defence Standard 66-31: Basic Requirements &amp; Tests for Electronic &amp; Electrical Test &amp; Measurement Equipment, Part 2: Contractor General Requirements</b> - Part 2 defines the general design, manufacture and supply requirements that are common to TME procurements across all Service Applications. The above Defence Standard has been published as an Interim Standard and is provisional because it has not been agree...	New	Published		31/05/2008	12/06/2007
<b>Interim Defence Standard 66-31: Basic Requirements &amp; Tests for Electronic &amp; Electrical Test &amp; Measurement Equipment, Part 1: Introduction and Guide to the Specification and Selection of Test and Measurement Equipment by the Procuring Authority</b> - Part 1 provides guidance on the selection and specification of environment, safety and basic requirements for Test and Measurement equipment. The general requirements for material procurement and the environment in which TME is required to operate are defi...	New	Published		31/05/2008	12/06/2007
<b>Fuel Cells</b> - This generic standard provides advice and guidance for project teams that are specifying Fuel Cell Systems to power equipment and/or charge batteries. For the purpose of this dual standard a Fuel Cell System consists of the stack and associated compone...	New	Expired		13/07/2007	12/06/2007

Ready

Subscription(s):  Accepted  Pending  Denied

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