

## **SELECTION OF STANDARDS FOR USE IN DEFENCE ACQUISITION**

1. The intelligent use of standards is fundamental to the effective and efficient acquisition, support and use of defence equipment and materiel.
2. The benefits of standards are that they:
  - promote improvement in the quality of products, process and services by defining their fitness for purpose;
  - promote improvements in health, safety and the environment;
  - promote economies in manufacture and variety control;
  - promote collaboration and international trade by removal of barriers to competition;
  - provide recognised benchmarks against which products, processes and services can be measured;
  - set out unambiguous technical requirements which can be quoted in contracts and specifications;
  - set performance requirements that promote innovation.
3. In addition to these general benefits standardization has specific benefits to the MOD in promoting operational effectiveness through improved interoperability and support of defence equipment.

### **Guidance**

4. Achieving the above benefits is dependent upon the appropriate selection of standards. Figure 1 shows the Standards Selection Process. Guidance on the appropriate selection of standards, including, defence standardization management, is available from DStan. Standardization Management shall be addressed from the outset of the acquisition cycle by developing a Standardization Management Plan (SMP) for the project. This includes defining how standards are selected and controlled through the life of the project to meet user and system requirements. A minimum number of standards should be selected to meet defined user and system requirements. The SMP once produced supports the project's Through Life Management Plan (TLMP).

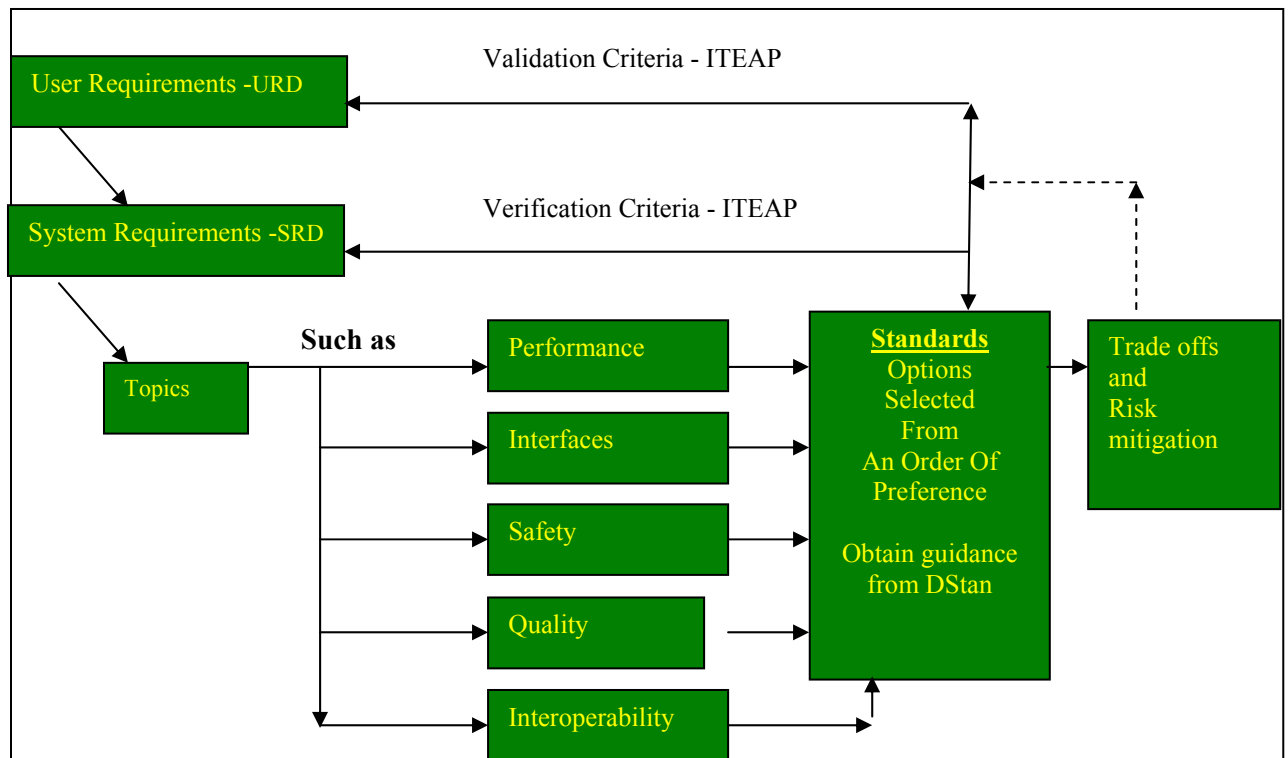


Fig 1: Standards Selection Process

### Government Policy

6. It is UK government policy to encourage the use of standards that hold sway in world markets and to use internationally recognised standards wherever possible. This is to reduce barriers to trade. With UK membership of the European Union there is also an obligation under the Directive 2004/18/EC of 31 March 2004 ‘on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts<sup>1</sup> that preference shall be given to national standards transposing European Standards.

### MOD Policy

7. In support of these requirements it is MOD policy that **civil and widely recognised commercial standards shall be used wherever appropriate in preference to international military alliance standards (such as NATO STANAGs) and UK Defence Standards**. The Order of Preference (OoP) for the selection of standards for Defence acquisition shall be **as shown in the accompanying Table A and notes**. This OoP shall also be applied in contracts and sub contracts throughout the contractual chain. Any changes in the standards selected need to be tracked and the implications of these changes analysed and communicated throughout the contractual chain.

<sup>1</sup> Directive 2004/18/EC of 31 March 2004 brings together three previous Directives on public sector procurement, covering supplies, works and services, into one text and provides a more consistent set of rules for these three kinds of contracts. It also clarifies and modernizes the previous texts to make the rules more helpful to today’s procurers and suppliers. It has been transposed into UK law as Statutory Instrument 2006 No 5.

8. The OoP for the selection of standards is a generic tool to assist the user in choosing the most appropriate standard to meet the requirement. In individual cases adjustments to the OoP may be necessary to take account of overarching requirements such as interoperability, legislation, treaty, conventions, regulations etc. Within the MOD the Heads of Profession (HoP), Acquisition Process Policy Owners (APPO) (this includes MOD's Regulatory Authorities) and Subject Matter Experts (SME) are the Departments' recognised experts on a particular function or area of specialisation. Where these MOD experts sponsor or recognise a standard then this standard normally becomes the preferred standard in the standards OoP. Where IPTs intend to use any other standard they must request agreement from the HoP/APPO/SME.

### **Supply of Standards**

9. UK Defence Standards, including naval Defence Standards, are available from the DStan website (<http://www.dstan.mod.uk>) and the DStan Help Desk. Information on the sources of other standards shown in the OoP is also available from the DStan Help Desk and Standards in Defence (SID) News.

### **Advice**

10. Advice and assistance in making the appropriate choice of standard along with the Standards Verification service is available from the DStan Help Desk at **0141 224 2531** and the DStan website (<http://www.dstan.mod.uk>). For other guidance on standardization management including functional assurance contact DStan's Standardization Management Guidance & Assurance (SMG&A) division, Abbey Wood, Bristol on **0117 913 4185/4186**.

**TABLE A**

**An Order of Preference for the Selection of Standards for MOD Acquisition**

<b><u>OVERARCHING REQUIREMENT</u></b>	Documents required by Law, International Treaty, Conventions, Protocols, Agreements and internal MOD Regulations (see <a href="#">TABLE B</a> )  Documents required for Interoperability; where specified as a user requirement. This includes those supporting the UK's Network Enabled Capability (NEC) (see <a href="#">TABLE C</a> )
<b><u>ORDER OF PREFERENCE</u></b>	<b><u>TYPE OF DOCUMENT<sup>2</sup></u></b>
1	<u>European</u> (Regional) (British Standards transposing European standards)  European Committee for Standardization (CEN) (see <a href="#">NOTE 1</a> ) European Committee for Electrotechnical Standardization (CENELEC) (see <a href="#">NOTE 2</a> ) European Telecommunications Standards Institute (ETSI)
2	<u>International</u> (British Standards transposing international standards)  International Organization for Standardization (ISO) (see <a href="#">NOTE 3</a> ) International Electrotechnical Commission (IEC) (see <a href="#">NOTES 3 &amp; 4</a> ) International Telecommunication Union (ITU) (see <a href="#">NOTES 3 &amp; 5</a> )
3	<u>National</u> (Other British Standards)  British Standards Institution (BSI)
4	<u>Commercial standards widely recognised by Industry</u> (see <a href="#">NOTE 6</a> )  Rules of national members of the International Association of Classification Societies (IACS) e.g. Lloyds Naval Ship Rules (see <a href="#">NOTE 7</a> )  Rules of the International Civil Aviation Organization (ICAO) agreed through the European Joint Aviation Authorities (JAA) and the USA Federal Aviation Administration (FAA)  Commercial standards e.g. ANSI, API, ASTM, IEEE and SAE (see <a href="#">NOTE 8</a> )
5	<u>International Military Alliance</u> (see <a href="#">NOTE 9</a> )  NATO Standardization Agreements (STANAGs) and Allied Publications (APs), Five Nation Agreements e.g. ABCA Standards and Advisory Publications (see <a href="#">NOTE 10</a> ) Air and Space Interoperability Council (ASIC) standards (see <a href="#">NOTE 11</a> ) AUSCANNZUKUS Agreements (Naval Standards) Combined Communication Electronics Board (CCEB Standards)
6	<u>UK MOD Defence Standards</u> (Def Stans, including former Naval Engineering Standards (see <a href="#">NOTE 12</a> ))
7	<u>UK MOD Departmental Standards and Specifications</u> (see <a href="#">NOTE 13</a> ) e.g. Joint Service Publication (JSP) (see <a href="#">NOTE 14</a> ).
8	<u>Other nations' military standards</u> e.g. from USA, DoD Mil Specs and Standards, (see <a href="#">NOTE 15</a> ).
9	<u>Recognized Industry/Partnership/Consortium Standards</u> (see <a href="#">NOTE 16</a> ). E.g. PANAIA, AIRBUS, etc. and Manufacturer's own internal standards.

<sup>2</sup> In addition to formal 'full consensus' standards the National, European and International Standards Developing Organizations (SDOs) now have a range of 'new deliverable' partial consensus standards. See SID News, Issue 200, April 2006, page 7. Users should be aware of the risks associated with referencing partial consensus standards in contracts e.g. are they valid only for a limited period and which authorities/ nations have accepted them as suitable for publication?

## Notes supporting Table A

- NOTE 1: CEN has two Associated Bodies (ASBs) to which the drafting of standards in specialized areas is delegated:
- (a) AECMA - The European Association of Aerospace Industries; (This body has recently created AECMA STAN to cater specifically for aerospace standardization.)
  - (b) ECISS - European Committee for Iron and Steel Standardization.
- NOTE 2: The CENELEC Electronic Components Standards are published as CECC standards.
- NOTE 3: For the information technologies field the ISO and IEC have established a joint technical committee (JTC 1) for which common and co-ordinated working procedures have been established with the Telecommunication Standardization Sector of the ITU.
- NOTE 4: The IEC has a Quality Assessment System for Electronic Components (IECQ).
- NOTE 5: The ITU comprises the:
- (a) International Radio Consultative Committee (CCIR);
  - (b) International Telegraph and Telephone Consultative Committee (CCITT).
- NOTE 6: A commercial standard is one which holds sway in world markets. They are produced by, and readily obtainable from, widely recognised bodies such as professional institutions and societies, trade associations, organizations or technical societies that plan, develop, establish or co-ordinate standards, specifications, handbooks or related documents. They do not necessarily use open, transparent and consensus based processes during their standards making activities. **The term does not include standards developed by National Standards Bodies**, individual companies or consortia. UK Industry often uses the term for any non-military standard, irrespective of its source. In the USA, commercial standards are referred to as Non Government Standards (NGS). Some documents in this group are prepared in support of Legislation, Treaties, Conventions, Protocols and Agreements in which case they might be referenced in the overarching requirement category.
- NOTE 7: Members of the International Association of Classification Societies (IACS) include: Lloyds Register (LR), Det Norske Veritas (DNV), Germanischer Lloyd, Bureau Veritas (BV), Registro Italiano Navale (RINA) and the American Bureau of Shipping (ABS).
- NOTE 8: The USA has no direct equivalent of the UK BSI which acts as the National Standards Body (NSB) as well as producing and publishing standards for the UK. In the USA the American National Standards Institute (ANSI) acts, in the main, as the private sector standards co-ordinating centre for scientific and professional societies and trade associations. There are, reportedly, around 600 such USA based organizations which could produce standards. Not all these standards may have visibility or widespread use outside of the USA. They are not to be treated as "international" civil standards. Examples in this category (which are often referred to as Non Government Standards (NGS)) are ANSI, API, ASTM, IEEE and SAE. (See also 'A Guide to USA Commercial and Military Standards' SID News, Issue 180, April 2001)
- NOTE 9: When military standards are quoted in ITTs/contracts open to a wide range of bidders IPT staff should ensure all manufacturers/ countries have the necessary clearance. This applies particularly to NATO STANAGs which may not be available to manufacturers' in non-NATO countries. International Military Alliance Standards (such as STANAGs and ABCA Standards) normally have no authority in the individual members' countries unless implemented either by reference or the publication of an appropriate national document. Where the UK has agreed to implement such a standard it is effectively mandatory to consider its use in order to meet specific user or system requirements. Advice on the authorized availability and ratification status of such agreements/ standards may be obtained from the DStan helpdesk.
- NOTE 10: ABCA Standards were formally called ABCA Quadripartite Standardization Agreements (QSTAGs). ABCA Advisory Publications were formally called ABCA Quadripartite Allied Publications (QAPs).

- NOTE 11: To signal a significant shift in focus towards interoperability the previous Air Standardization Co-ordinating Committee (ASSC) title has now (2005) been changed to Air and Space Interoperability Council (ASIC).
- NOTE 12: The intelligent application of standardization is dependent upon the use of standards only to meet specific user or system requirements. If there is no clear link between the use of standard and a requirement then the proposed use of a standard should be reviewed. The aim should be to minimize the use of standards in order to promote innovation. The application of Naval Defence Standards is covered by a scheme containing three categories under the oversight of the UK MOD DE&S Sea System Group. The Critical, Significant or Minor categories indicate the possible detrimental effect on Safety, Operational Performance, Through Life Cost and Support, Fleet commonality and MOD best practice if a Naval Defence Standard is not applied to a project. An IPT Leader proposing to omit specific parts, or not to apply a complete Category 1 Naval Defence Standard (e.g. because it is inappropriate or the requirements can be met in other ways which might include an alternative standard from the hierarchy) needs to obtain agreement by the appropriate 1\* sponsor. Further advice on the use of Category 1, 2 and 3 standards is given in Def Stan 00-00 Part 2.
- NOTE 13: MOD units have authored a variety of Departmental Standards and Specifications over the years. In 1999, at least 69 different series had been identified which included Defence Specifications (Def Specs), Defence Lists, Defence Guides, Standardization Memorandum and Specifications, Directorate of Technical Development (DTDs), Directorate of Engine Research Development (DERDs), Military Vehicles and Engineering Establishment (MVEE specs), Aircraft Technical specifications (TS), Chemical Specifications (CS) and Defence Guides – Ships (DG Ships). They were prepared within the former Ministry of Technology, Ministry of Aviation Supply or Research Establishments and by individual MOD authorities such as DE&S Business Units (the old PE/DPA) in amplification of, or where there were no suitable British or Defence Standard available. Wherever possible, and with the co-operation of the authorities responsible for them, these various standards and specifications have been reduced in number, either by declaring them obsolescent, by direct cancellation or by conversion to other civil and military standards. (Obsolescent standards are those no longer required for the procurement of new equipment but retained for maintenance purposes in support of existing in-service equipment). Contact the DStan helpdesk for further information.
- NOTE 14: This category also includes Joint Service Publications (JSPs) which, although generally intended as internal UK MOD documents, are often referenced in contracts as they contain details of how MOD complies with legislative requirements such as safety, health and the environment in which case they might be referenced in the overarching requirement category. They are used by MODs Regulatory Authorities e.g. for Aviation Safety (Airworthiness) JSP 553; Land Systems Safety JSP 454; Ship Safety Management JSP 430; Ordnance Munitions and Explosives JSP 520; and Nuclear Propulsion JSP 518. Note that JSP 600 MOD CIS Policy and Assurance Process, because it supports the UK's NEC, is an example of a JSP in the overarching requirement category. JSPs can also cover MOD policy in areas such as Finance and Accounting, and Radiological Protection.
- NOTE 15: The 1994 US DoD acquisition reform initiative (Perry reforms) aimed to use commercial technology to satisfy requirements and reduce costs. One element was to stop the automatic use of DoD Military Specifications and Standards. Initially DoD required a waiver to use them. Now, no waiver is required to use their military interface and interoperability standards but it is still required for standard test methods, manufacturing process standards and design criteria. A cancellation programme aims to reduce their 31,000 standards by 60%. They are not to be treated as “international” military standards. Users should exercise caution when referencing them and remember the overall policies which govern their use in the USA. Their individual status can be verified by following the “online specs” “DSP Documents” links from the <http://dsp.dla.mil> website. Registration may be required.
- NOTE 16: Where the application of this group Standards is envisaged users shall ensure their availability together with the related rights of use.

## TABLE B

### Supporting Information for Table A, Overarching requirements: Types and examples of Legislation, Treaties, Conventions, Protocols Agreements and internal MOD Regulations

**NB. This table shows ‘types and examples’ and is not to be treated as a hierarchy.**

UK Acts of Parliament (or Statutes) UK Statutory Instruments (or Regulations) Codes of Practice e.g. Health and Safety at Work Act 1974 The Merchant Shipping Acts 1894 - 1993
European Union legislation Directives Regulations Decisions
International, European and National Registration Rules, Regulations, Codes of Practice and Conventions e.g. International Maritime Organisation (IMO) Safety of Life at Sea (SOLAS) Marine Pollution (MARPOL) Montréal Protocol etc.
State of Forces Agreements (SOFA) Non legally binding agreements between countries (Memoranda of Understanding)
North Atlantic Treaty Organization (NATO) The NATO Standardization Agency, on behalf of NATO, produces STANdardization AGreementS (STANAGs) and associated Allied Publications. The Agreements are developed by several NATO Agencies; the more common are NSA, CNAD, SNLC and NC3 Board. Advice available from DStan’s International Division
Internal MOD Regulations e.g. Documents published by MOD’s Regulatory Authorities: Aviation Safety (Airworthiness) JSP 553; Land Systems Safety JSP 454; Ship Safety Management JSP 430; Ordnance Munitions and Explosives JSP 520; Nuclear Propulsion JSP 518. MOD CIS Policy and Assurance Process JSP 600 and associated leaflets

## TABLE C

### Notes supporting Table A, Overarching Requirement on Interoperability<sup>3</sup>

<u>NOTE 1</u>	NATO has developed an overarching [Force] interoperability policy <sup>4</sup> using the three levels of NATO standardization to support its four policy objectives (ability to: Communicate, Operate, Support, Train and Exercise). Implementing programmes and activities include Logistics, Armaments cooperation and Command and Information Systems.
<u>NOTE 2</u>	In order to strengthen the Alliance defence capabilities, it is Alliance policy that Nations and NATO Authorities enhance [Force] <b>interoperability</b> inter alia through standardization. NATO Nations will develop, agree and implement normative agreements to achieve and maintain <b>compatibility, interchangeability or commonality</b> of concepts, doctrines, procedures and designs; these agreements will be promulgated in appropriate STANAGs and Allied Publications (AP's). Nations, having accepted the agreements, will implement them in the most expeditious manner in response to operational needs. (AAP-3)
<u>NOTE 3</u>	<b>Force Interoperability issues should only be addressed when specified as a user requirement. System Interoperability issues should only be addressed when specified as a system requirement, or when introduced by a supplier as a novel feature of an offered solution.</b>
<u>NOTE 4</u>	As and when specified, users selecting standards using the Order of Preference for the Selection of Standards, need to take account of both Force and System interoperability issues not only for Alliance Forces but also for Partner and other multi-national operations.
<u>NOTE 5</u>	The NATO levels of standardization which support the attainment of interoperability are, in ascending order: Compatibility, Interchangeability and Commonality (see AAP-6 for definitions).
<u>NOTE 6</u>	The UK's Network Enabled Capability (NEC) is a vehicle to guide the coherent integration of sensor, weapon, decision-maker and support capabilities and integration between CIS solutions. NEC aims to improve operational effectiveness in the future strategic environment by permitting the more efficient sharing and exploitation of information within the British Armed Forces and our coalition partners. The NEC CIS Compliance and Assurance policy is underpinned by Departmentally endorsed architectural policies and technical standards for equipment programmes that have a CIS component.
<u>NOTE 7</u>	The DE&S Integration Authority ensures the achievement and maintenance of interoperability and integration between CIS solutions. It provides expert and authoritative services for the whole MOD community for the integration of information, equipment and services required to deliver and sustain defence capability.

<sup>3</sup> For general scene setting guidance (including definitions of Interoperability) see the Interoperability guidance on DStan's website.

<sup>4</sup> NATO UNCLASSIFIED – NATO Policy for Interoperability – CM (2005) 0016 dated 2 March 2005. Contact DStan's International division (through the helpdesk) for further information.