One size to fit all?
Setting standards for European defence
by Daniel Fiott

While the crisis in Ukraine may contribute to a revision of defence expenditures in a number of European countries, the task of finding the right balance between cost-effective and strategically-relevant defence spending in Europe is still critical. As defence expenditure generally remains in decline across Europe, a range of innovative measures to ensure that defence budgets are spent more efficiently and effectively are being devised.

One such measure – being pursued by the European Defence Agency (EDA) and the European Commission – is the greater standardisation of defence equipment in the European Union. Yet the European defence market is fragmented, paradoxically resulting in higher costs for national treasuries. At present, it is characterised by a plethora of national standards: national defence establishments and industries have become used to catering for their own military needs.

Defence standardisation has a commercial as well as an operational logic. Greater standardisation of defence equipment may reduce unit costs; not just when buying defence equipment, but also in maintaining defence capabilities over their full life cycle. A study contracted by the European Commission in 1999 (the 'Sussex Study') estimated that defence standardisation may, depending on the sector in question, lead to cost savings of up to 50%. Operationally speaking, it can boost interoperability between European militaries. For example, the EDA points out that whereas the United States has three types of tanker aircraft (it has 550 tankers overall), Europe has ten different types (and has 42 tankers in total). This disparity was borne out during the Libya crisis in 2011, where the lack of air-to-air refuelling interoperability between European air forces challenged operational effectiveness.

This is not to say that European countries are failing to standardise defence equipment. Working through NATO, a number of EU member states have been involved in projects that have developed standardised screw thread systems for gas mask canisters, and a standard for the interchangeability of fuels and lubricants between military vehicles. Such initiatives are set to continue under the European Commission's defence standardisation roadmap and the EDA's implementation of a civil-military procedure for defence standardisation. Without duplicating NATO efforts and creating more bureaucracy for governments and industry (and bearing in mind the voluntary nature of standardisation), the Commission and EDA seek to build on the standardisation work they have carried out on armoured vehicles, mid-air

collision avoidance systems, remotely piloted air systems (RPAS) and chemical, biological, radiological, nuclear and explosives (CBRNE).

Why standardise?

Defence standardisation is increasingly critical, especially in an era marked by networked defence systems and sophisticated defence technologies. Yet across the EU, defence equipment is being produced and procured at different times and by different suppliers. While defence standardisation can refer to personnel training (standardised courses, manuals and languages) and finished platforms (standardising the arresting gear on an aircraft carrier), the term mainly refers to the standardisation of the component parts that go into constructing defence equipment.

The 2009 Defence Procurement Directive defines a 'defence standard' as a non-compulsory technical specification that allows for repeated and/or continuous use in the field of defence. The process of standardisation begins at the early stages of the development of defence equipment, and continues through maintenance and servicing phases over the full life cycle of a piece of equipment. In its basic form, standardisation in product design, manufacturing processes and operability allows for consistency of use. On this basis, defence standardisation has both commercial and operational implications.

In *commercial* terms, standardisation is seen as a way to improve openness and transparency in defence procurement. Standardised defence equipment would ensure that there is greater market access for firms, and would consequently encourage more firms to bid for defence procurement tenders in other countries. Indeed, different standards for different pieces of equipment across the EU add costs and increase inefficiencies for firms and governments alike.

The Defence Procurement Directive recognises that defence tenders need to allow for open competition and must not discriminate on the basis of performance or the functional requirements of equipment. In some cases, procurement tenders may need to respond to specific standard requirements, but the Directive is rather clear that

technical specifications cited in tenders should not discriminate against a supplier or result in unfair competition. By ensuring that defence equipment meets commonly accepted standards across the EU, defence standardisation is seen as a way to facilitate intra-EU trade of equipment and to boost transparency in defence procurement.

In *operational* terms, standardisation is seen as a way to improve interoperability between European militaries. Interoperability is crucial given that EU member states participate in a number of multinational frameworks and operations through CSDP and NATO. Currently, however, interoperability can be a problem within and between European militaries.

Take, for example, the interoperability of radio communications between different countries and different armed services. For a number of CSDP missions, military and civilian actors are working side-by-side, but they are using outdated analog communications systems that cannot 'speak' to each other in the theatre of operations. Accordingly, in 2006 the EDA and Commission started work on a fully interoperable Software Defined Radio system based on digital signals that can be reconfigured on a service and country basis, therefore making communication possible. Having interoperable equipment may improve operational deployment timeframes and effectiveness on the ground.

Related to the operational rationale for defence standardisation is the important issue of certification. The July 2013 communication on defence and the December Council conclusions both highlighted the critical importance of defence certification. The need to certify products in different member states creates a barrier to trade and the process can incur serious additional costs for companies (especially SMEs). As one example, the Commission estimates that out of a total €7.5 billion spent on ammunition each year in Europe, the lack of a common certification scheme results in €1.5 billion worth of costs. Finally, certification is also essential from an operational perspective. For instance, ensuring the safety of military aircraft during tasks such as air-to-air refuelling is incredibly important in multinational operations, especially where different national forces cooperate with one another.

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What are the challenges?

Defence standardisation is no easy task. EU member states have been involved in defence standardisation efforts for some time, first under NATO and now increasingly through the EU. Yet standardisation is a voluntary exercise with firms choosing to adopt industry standards for their products and services. In civilian markets, standardisation is an industry-led drive, as firms pay for standards in order to ensure the competitiveness of their products in the open market. In defence markets, the situation is different, as governments and military establishments – as end-users – are involved in product design processes. Bringing on board such establishments is a long-term process that requires a piecemeal approach and a huge degree of patience. Thus, while the EDA's Material Standardisation Group has been encouraging cooperation between participating member states, there is still much work to do in building trust between industrial and government partners.

As part of these efforts, the EDA has launched and managed two web portals as a way to promote the exchange of information on, and registration of, defence standards. In 2007, the EDA launched the European Defence Standards Information System (EDSIS), and in 2011, it became the manager of the European Defence Standards Reference System (EDSTAR).

For its part, the European Commission is taking a market-based approach to defence standardisation as it has close relations with the three European standards organisations (ESOs): the European Committee for Standardisation (CEN), the European Committee for Electrotechnical Standardisation (CENELEC), and the European Telecommunications Standards Institute (ETSI). In 2011, these ESOs were already mandated by the Commission to develop standards for a range of security products (counter-terrorism, surveillance, border checkpoints). Additionally, the Aerospace and Defence Industries Association of Europe – Standardisation (ASD-STAN), also publishes defence-relevant standards and is part of CEN.

• *Different markets*

The first challenge to defence standardisation relates to the specificities of the defence market. In the civilian market, procurers are used to buying products that are stamped with the 'CE' mark: this mark denotes that while products differ in the way they function, they adhere to a general level of safety. There is a genuine appetite to adopt European and international standards in this realm, as this boosts market access and improves competitiveness. In the defence sector, however, standardisation is a sensitive topic and not always an attractive avenue to pursue. Indeed, the rationale for defence equipment production is to achieve operational effectiveness, to sustain technological know-how and to nourish employment. In essence, while defence standardisation may lead to European market consolidation and efficiency gains, it may raise questions for the sustainability and competitiveness of national industries and markets.

Additionally, a key problem in the design phase is the competing demands for what a piece of military equipment should be. Should it be technologically advanced? Should it be cheap? Should it be interoperable? Should it be operationally specific? These competing demands need to be addressed both within and between EU member states. Furthermore, the distinctiveness of a piece of defence equipment may be what gives its operator an edge in operational terms. In this respect, defence standardisation does not necessarily imply less duplication of finished platforms. Even though component parts may become standardised, different countries will still be using different naval, land and air capabilities.

Of course, it is equally fair to argue that the more distinctive a piece of defence equipment becomes, the harder it will be to maintain security of supply. Having standardised equipment and components means increasing the supplier base for equipment; this is crucial for multinational operations where one military may become dependent on another for critical supplies. Having national-only equipment also means that a country is more dependent on replacement parts. Buying standardised products may ease some security of supply concerns, yet buying standardised and interoperable equipment from the most competitive suppliers does not necessarily point to more European sales: European countries may in fact decide that the costs of non-standardisation in European defence markets can be decreased by buying non-EU equipment.

• *Overlapping sectors*

The second challenge relates to the increasingly blurred lines between the civilian and defence market sectors. In 2008, for example, an EDA-contracted study based on interviews with the defence industry highlighted that civilian standards

are applied in up to 90% of naval projects, about 75% in the aeronautics and aerospace sector and approximately 70% in the land sector.

This is the reason why the Commission and the EDA are keen to promote 'hybrid standards'. Promoting such standards is not an easy task, as 'hybrid' implies using the same technologies for different needs and tasks. This is not to say that 'hybrid standards' cannot work. For example, the Airbus A400M airlifter was designed, produced and certified on civilian standards, which may make the military certification process smoother and eventual delivery to customers easier. Following this experience, the Commission and EDA are keen to extend hybrid standardisation to RPAS, data sharing and encryption.

Yet it should be kept in mind that '*defence* standardisation' and '*hybrid* standardisation' are two separate, albeit increasingly enmeshed, processes. The general experience under defence standardisation has been for a lead nation to identify a standard for development and to either develop this on a national basis or through NATO – after which point it becomes a 'NATO standard'. For hybrid standardisation, the process is more complex. After a standardisation gap for security and/or defence has been identified, member states can opt for a national solution, go through the EDA or request the Commission to fill the gap. Both the Commission and EDA routes will involve ESOs and standardisation advisers such as the European Organisation for Civil Aviation Equipment (EUROCAE), ASD-STAN or the European Organisation for the Safety of Air Navigation (Eurocontrol). If accepted by a European Standardisation Organisation, then an 'EN standard' is developed.

One key issue that will determine the choice between 'defence' and 'hybrid' standardisation is whether the new standard will involve sensitive security information. In the defence sector, equipment designs can amount to a national security concern. Intellectual Property Rights (IPRs) are critical, and any successful standardisation of equipment in the defence sector will rest on the assumption that IPR holders will have their rights protected when industry-wide standards are adopted, and that industry as a whole has transparent and fair access to existing IPRs. This is a highly sensitive area of defence standardisation, and it is because of the uncertainty surrounding defence-specific IPRs that some civilian firms that sell to the defence sector may be reticent about adopting defence-related standards at all.

What ways forward?

The distinctiveness of defence equipment hardly needs emphasising. Yet it appears increasingly clear that both commercial and operational rationales will drive defence standardisation efforts in the EU. Based on the experiences of the European Commission in the civilian sector and the EDA's standardisation project initiatives, plus the experiences of EU member states in NATO, the task will be to strike the right balance between market processes and operational needs. The European Commission's experience in standardisation in the civilian sector is invaluable, but it will be tough to replicate this experience in defence standardisation efforts. The key issue is to seek ways to enhance communication and greater information exchange between national standardisation organisations and to coordinate this in common.

All stakeholders – including member states, the EDA, the Commission, the ESOs and industry at large – need to be on board for the long haul if defence standardisation is to bear fruit. Another key point will be to ensure that European-level efforts at standardisation remain compatible with what is being done under the NATO umbrella: presently, a direct link is missing between the EDA and NATO on standardisation cooperation.

There will continue to be many hurdles to the Commission's and the EDA's standardisation efforts. However, the fact that defence budgets are in decline and that interoperability is a mainstay of operational thinking means a rationale for standardisation exists. Now the work to incentivise the process begins.

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