

12. Controls on security-related international transfers

SIBYLLE BAUER AND IVANA MIĆIĆ

I. Introduction

Changing patterns and increasing complexity characterized the nature of both the legal trade of dual-use items and the illicit procurement of material and technology for weapons of mass destruction (WMD) over the past decade.¹ The use of intermediaries, front companies and diversion or trans-shipment points has multiplied the number and kind of actors and activities that are involved in security-related transfers. The term ‘export controls’ continues to be commonly used to describe the control of security-related items. However, the term ‘transfer controls’ more accurately reflects reality as it relates to, among other things, controls on brokering, transit, trans-shipment, financial flows and technical assistance (e.g. manual services and the oral transfer of ‘know-how’). The term transfer controls also includes the intangible transfer of technology (ITT)—the transmission of technology through intangible means, such as the transfer of technical information via electronic means—a category of transfers that places new demands on controls from both a legal and practical enforcement perspective.

The focus of non-proliferation efforts has shifted from the physical movement of goods to analysis of which elements of a transaction are relevant to, and should be subject to, controls. These developments not only create challenges, but also offer new opportunities for international cooperation. The simple supplier–recipient paradigm is no longer adequate, and the questions ‘who produces?’ and ‘who procures?’ have been expanded to include ‘who is involved along the way?’ Furthermore, the constant pressure to facilitate and speed up legitimate trade through the minimization of constraints, delays, costs and administrative burdens shrinks the amount of time available for enforcement intervention. This highlights the need for international cooperation, and also emphasizes that such control and intervention decisions must be rooted in solid national and international law.

While there is a common basis in United Nations Security Council Resolution 1540 for efforts to prevent WMD proliferation, different legal trad-

¹ Dual-use items are goods and technologies that have both civilian and military applications.

itions as well as policy priorities and perceptions face both common challenges of practical implementation and common requirements based on international law. The resulting obligations raise questions of how to legally conceptualize and define terms such as brokering, transit, transshipment and effective penalties for breaches, and whether a common understanding across a region and internationally can, and should, be found.

While this chapter focuses on controls on dual-use items, controls on the transfer of items specially designed and developed for military use are also covered. Section II summarizes recent updates to controls on proliferation-sensitive goods and technologies in UN forums. Section III describes the functional areas of a number of export control regimes and provides information on recent developments in those regimes. Section IV examines how the European Union (EU) is addressing transfer control challenges at the EU and member state levels. The conclusions are presented in section V. Appendix 12A outlines developments in the imposition and application of multilateral arms embargoes in 2009.

II. United Nations Security Council resolutions on transfers of proliferation-sensitive items

UN Security Council Resolution 1540, which was drawn up to prevent access by non-state actors to WMD and to nuclear and radiological materials, is now widely used as the generic legal basis for promoting and demanding international export control standards.² The resolution established the 1540 Committee, which works with UN member states to implement the resolution.³ The Committee's eighth programme identified five main areas of work and set-up working groups, open to all Security Council delegations, whose tasks were broken into four categories: (a) monitoring

² Resolution 1540 imposes binding obligations on all states to establish domestic controls to prevent the proliferation of WMD weapons and their means of delivery, including by establishing 'appropriate controls over related materials'. UN Security Council Resolution 1540, 28 Apr. 2004. UN Security Council resolutions are available at <<http://www.un.org/sc/>>. On the legal controversy around the UN Security Council as a legislator under Article VII of the UN Charter see Ahlström, C., 'United Nations Security Council Resolution 1540: non-proliferation by means of international legislation', *SIPRI Yearbook 2007*, pp. 460–73.

³ Resolution 1810 extended the mandate of the 1540 Committee until 2011. United Nations, 1540 Committee, Programme of work of the Security Council Committee established pursuant to Resolution 1540 (2004) from 1 February 2009 to 31 January 2010, Annex to S/2009/124, 4 Mar. 2009; and UN Security Council Resolution 1810, 25 Apr. 2008. See also UN Security Council Resolution 1673, 27 Apr. 2006; and Anthony, I. and Bauer, S., 'Controls on security-related international transfers', *SIPRI Yearbook 2009*, p. 460. On the 1540 Committee see <<http://www.un.org/sc/1540/>> and chapter 10, section VI, in this volume.

and implementation, (b) assistance, (c) cooperation with international organizations and (d) transparency and outreach.⁴

On 24 September 2009, at a UN Security Council summit chaired by US President Barack Obama and attended by 13 other heads of state or government, the UN Security Council unanimously adopted Resolution 1887, which aims to promote nuclear disarmament and to combat the spread of nuclear weapons.⁵ While the resolution urges states to take ‘all appropriate national measures ... to strengthen export controls ... and to control access to intangible transfers of technology’, it does not specify these measures.

International efforts to prevent the proliferation of nuclear, biological and chemical (NBC) weapons and their delivery systems have increasingly focused on non-state actors and on the programmes of a small number of states. The UN Security Council has adopted a series of resolutions that contain restrictions or prohibitions on the transfer of controlled items to Iran and to the Democratic People’s Republic of Korea (DPRK, or North Korea).⁶ As of January 2010 consensus on additional or stronger sanctions on Iran had not been reached because of diverging political and economic interests. UN Security Council Resolution 1874, which was adopted in response to North Korea’s nuclear test of 25 May 2009, gives member states broader powers to inspect cargo, consistent with international law, if they have ‘reasonable grounds’ to believe that a vessel contains items that are prohibited under the resolution and to seize and dispose of such items.⁷ This resolution incorporates principles introduced by the 2003 Proliferation Security Initiative (PSI), which Obama proposed become a durable international institution.⁸

On 2 December 2009 the UN General Assembly agreed a timetable for negotiating an arms trade treaty by 2012.⁹

⁴ The 5 main areas of work focus on reviewing implementation of Resolution 1540, increasing information on implementation, promoting implementation, enhancing cooperation and encouraging states to provide financial assistance. United Nations, S/2009/124 (note 3), pp. 7–8.

⁵ UN Security Council Resolution 1887, 24 Sep. 2009. See also chapter 9 in this volume.

⁶ For details see appendix 12A.

⁷ UN Security Council Resolution 1874, 12 June 2009. On the provisions of this resolution see appendix 12A. On the explosion see appendix 8B and chapter 9 in this volume.

⁸ White House, ‘Remarks by President Barack Obama, Hradcany Square, Prague, Czech Republic’, 5 Apr. 2009, <http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered/>. On the PSI see Ahlström, C., ‘The Proliferation Security Initiative: international law aspects of the Statement of Interdiction Principles’, *SIPRI Yearbook 2005*, pp. 741–67.

⁹ UN General Assembly Resolution 64/48, 2 Dec. 2009.

Table 12.1. Participation in multilateral weapon and technology transfer control regimes, as of 1 January 2010

State	Zangger Committee	NSG	Australia Group	MTCR	Wassenaar Arrangement
Argentina	x	x	x	x	x
Australia	x	x	x	x	x
Austria	x	x	x	x	x
Belarus		x			
Belgium	x	x	x	x	x
Brazil		x		x	
Bulgaria	x	x	x	x	x
Canada	x	x	x	x	x
China	x	x			
Croatia	x	x	x		x
Cyprus		x	x		
Czech Republic	x	x	x	x	x
Denmark	x	x	x	x	x
Estonia		x	x		x
Finland	x	x	x	x	x
France	x	x	x	x	x
Germany	x	x	x	x	x
Greece	x	x	x	x	x
Hungary	x	x	x	x	x
Iceland		x*	x	x	
Ireland	x	x	x	x	x
Italy	x	x	x	x	x
Japan	x	x	x	x	x
Kazakhstan	x	x			
Korea, South	x	x	x	x	x
Latvia		x	x		x
Lithuania		x	x		x
Luxembourg	x	x	x	x	x
Malta		x	x		x
Netherlands	x	x	x	x	x
New Zealand		x	x	x	x
Norway	x	x	x	x	x
Poland	x	x	x	x	x
Portugal	x	x	x	x	x
Romania	x	x	x		x
Russia	x	x		x	x
Slovakia	x	x	x		x
Slovenia	x	x	x		x
South Africa	x	x		x	x
Spain	x	x	x	x	x
Sweden	x	x	x	x	x
Switzerland	x	x	x	x	x
Turkey	x	x	x	x	x
United Kingdom	x	x	x	x	x
Ukraine	x	x	x	x	x
Unites States	x	x	x	x	x
European Commission	o	o	x		
Total membership	37	46	41	34	40

NSG = Nuclear Suppliers Group; MTCR = Missile Technology Control Regime; o = observer; x = member/participant; * = joined in 2009.

III. Developments in multilateral export control regimes

Four informal multilateral arrangements worked within their specific fields to strengthen transfer control cooperation in 2009: the Australia Group (AG), the Missile Technology Control Regime (MTCR), the Nuclear Suppliers Group (NSG) and the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies (WA). The states participating in these arrangements and in the Zangger Committee are listed in table 12.1.¹⁰

Purpose and set-up

Specific events that demonstrated the use, or potential use, of WMD and concern about the increase in WMD programmes created political will to establish the AG, MTCR and NSG. The AG was established in the light of international concern about the use of chemical weapons in the 1980–88 Iran–Iraq War. At first, AG participants cooperated to maintain and develop their national controls to prevent the export of chemicals that might be used for, or diverted to, chemical weapon programmes. The participating states now seek to prevent the intentional or inadvertent supply of materials or equipment to chemical or biological weapon programmes.¹¹ The MTCR works to prevent the proliferation of unmanned delivery systems capable of delivering WMD.¹² The NSG aims to prevent the proliferation of nuclear weapons by controlling transfers of nuclear and nuclear-related material, equipment, software and technology.¹³ While the AG, MTCR and NSG focus on WMD and their delivery systems, the WA promotes transparency and the exchange of information and views on transfers of conventional arms and related dual-use goods and technologies. It encourages responsible behaviour and seeks to prevent ‘destabilizing accumulations’ of such items.¹⁴

The common purpose of all four regimes is to strengthen the national transfer control systems of participating states—as well as those of non-

¹⁰ The Zangger Committee participants seek to take account of the effect of ‘changing security aspects’ on the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (Non-Proliferation Treaty, NPT) and to ‘adapt export control conditions and criteria’ in that light, although it is not formally part of the NPT regime. For basic information on the AG, the MTCR, the NSG, the WA and the Zangger Committee see annex B in this volume. For a summary and other details of the NPT see annex A in this volume.

¹¹ See the AG website, <<http://www.australiagroup.net/>>.

¹² See the MTCR website, <<http://www.mtrc.info/>>.

¹³ On the NSG see Anthony, I., Ahlström, C. and Fedchenko, V., *Reforming Nuclear Export Controls: The Future of the Nuclear Suppliers Group*, SIPRI Research Report no. 22 (Oxford University Press: Oxford, 2007); and the NSG website, <<http://www.nuclearsuppliersgroup.org/>>.

¹⁴ The term ‘destabilizing accumulations’ lends itself to varying interpretation, although states have made efforts to establish common standards through best practice documents. See the WA website, <<http://www.wassenaar.org/>>.

participating states—in order to prevent the spread of NBC weapons and their means of delivery. They differ mostly in the type of controlled items they cover and their specific dynamics, which are to a large degree due to the differences in membership.

Unlike the AG and the NSG, the MTCR does not derive its rationale from an international treaty.¹⁵ However, UN Security Council resolutions 1718 and 1737 incorporate the MTCR control list and thus make it binding on all UN members with regard to transfers to Iran and North Korea.¹⁶ The MTCR is complemented by the Hague Code of Conduct against Ballistic Missile Proliferation, which has much wider participation.¹⁷

The regimes are similar operationally and organizationally. They are informal agreements that operate on consensus and are not legally binding. Members apply regime principles and guidelines through their national legislation and systems. Policy, enforcement and licensing officials as well as technical experts meet in different groups within the regimes and report to the respective plenary (the decision-making body); this allows authorities involved in export controls at the national level to participate to some degree in the regimes. The technical working groups prepare changes to the control lists that are annually adopted by each plenary. Apart from the AG, which is always chaired by Australia, the regime chair rotates among participating states on an annual basis. Although the quality of information exchange and the ability to take effective decisions within regimes vary (e.g. in the plenary's ability to agree on a public statement), the regimes are essential not only for the drawing up of guidelines and control lists but also for the facilitation of international cooperation and networking.¹⁸

Common themes discussed in the regimes include ITT, effective law enforcement, end-use controls and engagement with non-participating

¹⁵ The AG derives its rationale from the 1972 Biological and Toxin Weapons Convention (BTWC) and the 1993 Chemical Weapons Convention (CWC), and the NSG from the 1968 NPT. In practice, the BTWC has a weaker link to the AG due to the convention's lack of institutionalization. For summaries and other details of the BTWC, the CWC and the NPT see annex A in this volume.

¹⁶ UN Security Council Resolution 1718, 14 Oct. 2006; UN Security Council Resolution 1737, 23 Dec. 2006; and Anthony, I. and Bauer, S., 'Controls on security-related international transfers', *SIPRI Yearbook 2007*, pp. 658–63.

¹⁷ As of 1 Jan. 2010 there were 130 signatories to the Hague Code of Conduct (HCOC). For a list of signatories and a summary of the HCOC see annex B in this volume.

¹⁸ E.g. it was agreed at the 2009 MTCR plenary to approach individual countries to remind them of their obligations under UN Security Council resolutions 1718, 1737, 1747, 1803 and 1874, but consensus could not be achieved on naming individual national missile programmes considered to be of concern in the press release. German Government, *Bericht der Bundesregierung zum Stand der Bemühungen um Rüstungskontrolle, Abrüstung und Nichtverbreitung sowie über die Entwicklung der Streitkräftepotentiale (Jahresabrüstungsbericht 2009)* [Federal Government report on progress on arms control, disarmament, non-proliferation and development of the capabilities of the armed forces (annual disarmament report 2009)] (German Government: Berlin, 12 Jan. 2010), p. 93; UN Security Council Resolution 1747, 24 Mar. 2007; and UN Security Council Resolution 1803, 3 Mar. 2008. No public statement from the MTCR plenary was issued in 2009. Statements from previous years are accessible on the MTCR website, <<http://www.mtcr.info>>.

states. Regime members exchange information on proliferation challenges and risks (including sensitive end-users, international procurement networks and state-sponsored procurement efforts) as well as on policies towards particular regions or states. They also circulate among themselves export licence applications that have been denied. The various working-level groups aim to strengthen national control systems by exchanging information, experiences, challenges and lessons learned from proliferation cases. Changes in global security have shifted the regimes' focus from state programmes and recipients to specific regions, countries and non-state actors. The demands in UN Security Council Resolution 1540 for brokering and transit controls have been taken up in regime discussions.

While the original focus was on drawing up common control lists, members proceeded to agree on effective national procedures and legal provisions, and now also develop best practice guides. Through outreach, regime members promote the principles, guidelines and control lists; non-members can choose to adhere to them without joining the regimes.

Cross-regime evolution, trends and challenges

Control lists and best practices

From the beginning, a key function of these multilateral arrangements has been the updating of their respective control lists, and over the past 20 years, control list updates have tended to be minor and specific. A regime's control list becomes legally binding once it is incorporated into national or supranational law. Efforts are under way in the AG and WA to make the lists more user-friendly for both industry and government authorities.¹⁹ Combining the different regime lists into a consolidated list, as has been done by the EU, is one way of increasing user-friendliness.

The regimes' technical working groups have the challenging task of adapting lists to keep pace with rapid technological developments, easier access to technology and more sophisticated procurement methods (see the discussion of ITT below). In an effort to address this, the regimes have adopted WMD end-use clauses for unlisted items (the so-called catch-all mechanism); this control can be applied to items that are not listed in national or supranational law but that could still be diverted or used for WMD-related purposes. This mechanism allows countries expanded controls on proliferation-sensitive transfers. Moreover, the time lag between regime decisions and national implementation creates additional risks and

¹⁹ Wassenaar Arrangement, '2009 plenary meeting of the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-use Goods and Technologies', Public statement, Vienna, 3 Dec. 2009, <http://www.wassenaar.org/publicdocuments/index_PD09.html>; and Leahy, J., 'Day one: regime updates: Australia Group', 10th International Export Control Conference, Istanbul, 25–27 June 2009, <<http://exportcontrol.org/pastconferences/2705c.aspx>>.

reinforces the importance of catch-all controls. An interesting aspect is the criteria for including items in the lists (e.g. whether the criteria are based on the traditional export control goals or also include counterterrorism considerations).

Regimes continue to refine their respective control lists and to assess the possible end-uses of currently uncontrolled items. Since 2007 the AG has maintained a particular focus on international developments in the field of synthetic biology.²⁰ In 2009 the AG ‘considered a report from its specialist technical advisory group in this area’ and ‘agreed to broaden the scope of the advisory group to include a range of evolving technologies’. The AG list now includes software. The WA plenary amended the control list, among other things, for information security (encryption) and reception equipment for global navigation satellite systems.²¹

Over time, the scope of the regimes has expanded to include agreement on effective national procedures and legal provisions as well as the development of best practice guides, which complement already existing enforcement officers’ handbooks. Topics discussed and agreed in the guidelines are often the result of national legislation and practice already in place. For example, in 2009 the AG and the NSG agreed a best practices guide on effective end-use controls that is based on a German proposal which was adopted by the WA in 2007 and has also been introduced in the MTCR.²² The guide aims to provide a more comprehensive approach to end-use controls by going beyond end-use certificates. It includes both the obligations of exporters and government authorities, and covers the pre-licensing, licensing and post-licensing phase. This example also demonstrates one approach to coordinating regime efforts: introducing similar documents and approaches in the different regimes.

The intangible transfer of technology

ITT refers to both the transfer of knowledge and skills by a person (e.g. technical assistance, research papers presented at conferences etc.) and the transfer of technology via non-physical form (e.g. via fax, email, software or telephone). ITT can be, but is not necessarily, accompanied by a transfer of physical items. The term ITT encompasses information required for the development, production, use and repair of an item. Basic scientific research or information in the public domain is exempt from ITT controls, although drawing the line can be difficult in practice.

Due to its intangible nature, ITT is extremely challenging to control. Ways to approach ITT controls include company audits, visa screening and

²⁰ Australia Group, ‘2009 Australia Group plenary’, Media release, 25 Sep. 2009, <http://www.australiagroup.net/en/agm_sept2009.html>.

²¹ Wassenaar Arrangement (note 19).

²² German Government (note 18), p. 91.

raising awareness within industry and academia.²³ Possible ITT providers include retired academics and technical experts, who may be motivated by money or prestige to share sensitive knowledge. The existence of ITT controls illustrates the overall move away from classical export control and the supplier–recipient paradigm.

In 2008, after the AG adopted ‘enhanced measures’ to deal with ITT in 2007, AG participants agreed that ITT is ‘an area of increasing priority in the defence against the proliferation of chemical and biological weapons capabilities’ and exchanged information on national measures for screening visa applications as a means of countering ITT of concern.²⁴ In 2009 the AG decided to produce an ITT booklet by 2010.²⁵ The guide aims to clarify the scope of ITT controls and the different ways that technology can be transferred. It also explores related control options for customs enforcement. In its 2009 plenary statement, the AG ‘noted the ongoing importance of engaging industry and academic sectors in support of the Group’s work’.²⁶

At the 2003 MTCR plenary, the participating states agreed to take steps to develop national procedures to subject MTCR-controlled ITT to export controls, in accordance with their national legislation. The ITT issue was also discussed in 2004 and 2005. In 2006 it was agreed that transfers, as mentioned in the MTCR Guidelines for Sensitive Missile-Relevant Transfers, ‘comprise tangible as well as intangible transfers’.²⁷

In 2009 the NSG ‘elaborated best-practice guides to be used by Participating Governments internally and for outreach activities’ to address the challenges posed by intangible transfer of technology and end-use control.²⁸ The Hungarian NSG chair for 2009–10 announced a focus on ITT issues.²⁹

In 2006 the WA agreed ‘Best Practices for implementing intangible technology transfer controls’.³⁰ These include the ‘provision of training to export control enforcement authorities on appropriate investigative tech-

²³ Recent ITT discussions tended to focus on visa-screening for students and professors. See e.g. Anthony and Bauer (note 3), p. 463.

²⁴ All statements are available on the Australia Group website, <<http://www.australiagroup.net>>.

²⁵ Wingren, L.-E., Swedish ambassador to Bosnia and Herzegovina, ‘EU statement by the presidency on behalf of the European Union at the Australia Group plenary session’, Paris, 22 Sep. 2009, <http://www.se2009.eu/fr/reunions_actualites/2009/9/22/statement_at_the_plenary_session_of_the_australia_group>. Funding for the ITT guide is being provided by South Korea.

²⁶ Australia Group (note 46).

²⁷ MTCR, ‘Plenary meeting of the Missile Technology Control Regime’, Press release, Copenhagen, 2–6 Oct. 2006, <<http://www.mtcr.info/english/press/copenhagen.html>>; and MTCR, Guidelines for Sensitive Missile-Relevant Transfers, <<http://www.mtcr.info/english/guidetext.htm>>.

²⁸ Nuclear Suppliers Group (note 35).

²⁹ Stefan, L., ‘Day one: regime updates: Nuclear Suppliers Group’, 10th International Export Control Conference (note 19).

³⁰ Wassenaar Arrangement, ‘Best practices for implementing intangible transfer of technology controls’, Vienna, 6 Dec. 2006, <http://www.wassenaar.org/publicdocuments/index_PD06.html>.

niques to uncover violations of national controls on ITT exports or access to such specialist expertise'; the appropriate 'surveillance or monitoring, pursuant to national laws and regulations, of entities that are suspected . . . of making unauthorized intangible transfers of controlled technology' and the 'sanctioning by national authorities of those under their jurisdiction that have transferred controlled technology by intangible means in violation of export controls'.

Enforcement and penalties

Enforcement as an essential element of an effective export control system has received more attention in recent years, although the necessary practical steps of resource allocation as well as the complementary legal, institutional and procedural changes are only gradually being put in place. Penalties to prevent, deter and punish violations of transfer control laws are an important part of enforcement and a precondition for increasing the shift of responsibility from the licensing authority to the exporter. Resolution 1540 requires each UN member state to put effective and appropriate penalties in place, which raises the question of how these terms are to be defined and translated into national provisions. Similarly, EU member states are starting to discuss national approaches to put effective, dissuasive and proportionate penalties in place, as required by EU law.³¹

The AG requires members to implement 'an effective export control system which provides national controls for all items on the AG common control lists and is supported by adequate licensing and enforcement regimes' and to create 'legal penalties and sanctions for contravention of controls' and be 'willing to enforce them'.³² NSG members should have in place legal measures to ensure the effective implementation of NSG guidelines, including enforcement measures and penalties for violations.³³ The WA's best practices for effective enforcement include the designation of law enforcement responsibilities in the relevant areas, the provision of ade-

³¹ Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items, *Official Journal of the European Union*, L134, 29 May 2009. The same requirement was already included in Council Regulation (EC) No. 1334/2000 of 22 June 2000 setting up a Community regime for the control of exports of dual-use items and technology, *Official Journal of the European Communities*, L159, 30 June 2000. See also section IV below; and Wetter, A., *Enforcing European Union Law on Exports of Dual-use Goods*, SIPRI Research Report 24 (Oxford University Press: Oxford, 2009). On effective and appropriate penalties as they relate to Resolution 1540 and to the EU and EU member states see section II above and section IV below.

³² Australia Group, 'Australia Group Membership', [n.d.], <<http://www.australiagroup.net/en/membership.html>>.

³³ International Atomic Energy Agency, 'Guidelines for nuclear transfers', Information Circular INFCIRC/254/Rev.9/Part.1, 7 Nov. 2007, p. 4; and International Atomic Energy Agency, 'Guidelines for transfers of nuclear-related dual-use equipment, materials, software, and related technology', Information Circular INFCIRC/254/Rev.7/Part 2, 20 Mar. 2006, p. 2.

quate resources and training for enforcement officers, and the assurance 'that national laws and regulations have statutes of limitations sufficiently long to permit the detection and prosecution of export control violations'. They also emphasize the importance of mutual legal and customs assistance and international investigation and prosecution cooperation, and the need to establish 'effective penalties'.³⁴

Membership

The only regime to accept new members in 2009 was the NSG, which admitted Iceland.³⁵ A number of applications are pending in the WA; no new members have been admitted since South Africa joined in early 2006. For example, Serbia has submitted a request for membership of the WA and intends also to submit a request for membership of the NSG.³⁶ Applications are also pending in the AG.

China and Croatia have applied for MTCR membership.³⁷ Kazakhstan, which is 'consistently pursuing the policy of becoming the integral part of the international export control regimes', has declared joining the MTCR a priority and submitted an official application for membership in June 2003.³⁸ Kazakhstan declared in 2009 that it already follows the MTCR Guidelines and Technical Annex.³⁹ As of 2009 four other countries had declared their unilateral adherence to the MTCR.⁴⁰ Under the Indian-US Civil Nuclear Cooperation Initiative, signed on 10 October 2008, India is required to adhere to MTCR guidelines.⁴¹ India is already committed to 'harmonisation and adherence' to MTCR guidelines under the terms of an Indian-US joint statement.⁴²

³⁴ Wassenaar Arrangement, 'Best practices for effective enforcement' (1 Dec. 2000), *Basic Document* (Wassenaar Arrangement: Vienna, Jan. 2010), pp. 49–50.

³⁵ Nuclear Suppliers Group, 'NSG plenary meeting', Press statement, Budapest, 11–12 June 2009, <<http://www.nuclearsuppliersgroup.org/Leng/PRESS/2009-10-Budapest.pdf>>.

³⁶ Starcevic, F., Permanent representative of Serbia to the United Nations in New York, Statement at First Committee General Debate, 9 Oct. 2009, <<http://www.un.int/serbia/Statements/52.pdf>>.

³⁷ Croatian Ministry of Foreign Affairs and European Integration, 'Multilateral relations', <<http://www.mfa.hr/MVP.asp?pcpid=1239>>. China submitted its application for MTCR membership in 2004. US Department of Defense, Defense Treaty Inspection Readiness Program, 'Missile Technology Control Regime (MTCR)', <<http://dtirp.dtra.mil/TIC/synopses/mtrc.cfm>>.

³⁸ Abusseitov, K., Permanent representative of Kazakhstan at the Conference on Disarmament, Statement, Geneva, 7 Aug. 2007, <<http://www.unog.ch/>>.

³⁹ Kazakh Government, 'On Kazakhstan's efforts to join [the] Missile Technology Control Regime', Press release, London, 10 Nov. 2009, <<http://www.kazembassy.org.uk/press-releases.html>>.

⁴⁰ Those countries are Israel, Romania, Slovakia and the Former Yugoslav Republic of Macedonia (FYROM).

⁴¹ US Department of Defense (note 37). See also Anthony and Bauer (note 3).

⁴² Indian Government and US Government, 'India-US joint statement', Press release, Washington, DC, 18 July 2005, <http://www.indianembassy.org/press_release/2005/July/21.htm>.

A number of EU member states do not yet participate in all four regimes.⁴³ Decisions on whether to accept new members are made on both technical and political grounds (i.e. on the basis of broader policy issues rather than on export control-specific ones) and on issues related to the exchange of sensitive information (both denials and intelligence information access). Formally, new members are considered if they have an effective export control system and enforcement, and are compliant with international treaties. In some cases, the question of whether the applicant is a supplier (e.g. for the Nuclear Suppliers Group, as the name indicates) or a producer (e.g. for the WA, as specifically mentioned by its membership criterion) is also considered. The AG requires members to be a manufacturer, exporter or trans-shipper of AG-controlled items.⁴⁴ Such membership requirements may become less significant over time as the importance of brokering and transit controls increases and as information about the denial of permits for interceptions gains importance.

One example of political considerations that could influence the decision of membership is Cyprus, which states that Turkey is vetoing its membership in the export control regimes.⁴⁵ The regimes are less driven by a common political goal and shared threat perceptions than before. Rather, the issue of membership expansion illustrates the conflicting political interests within the regimes that have influenced their atmosphere and functionality. A broader question is how to balance the need to increase the number of countries benefitting from enhanced access to information and contact networks through regime membership with the risk that an increase in the number of members could reduce the regimes' effectiveness.

Outreach

For a number of years, all the regimes have engaged with non-participating states through outreach visits, participation in international conferences and the organization of specialized seminars. They have also increased their transparency and made the documents agreed at plenary meetings (e.g. guidelines, best practice guides, plenary statements and control lists) available on their websites. Outreach activities aim to broaden the acceptance and implementation of agreed export control principles and raise awareness among non-participating states. The AG specifically stresses that 'international acceptance of Australia Group controls and practices are in part a result of the Group's extensive outreach to non-members and

⁴³ Of the 27 EU member states, 8—Cyprus, Estonia, Latvia, Lithuania, Malta, Romania, Slovakia and Slovenia—are not part of the MTCR and 1—Cyprus—is not a WA participant.

⁴⁴ Australia Group, 'Australia Group membership', <<http://www.australiagroup.net/en/membership.html>>.

⁴⁵ Cypriot Ministry of Foreign Affairs, 'Turkey's attempts to exclude Cyprus' membership', <<http://www.mfa.gov.cy/mfa/mfa2006.nsf/All/826CB014C0CDE8DEC22571B100229450>>.

other international bodies'.⁴⁶ Depending on the regime and the country in question, outreach can function as an alternative to membership or assist in preparation for membership.

The quantity and nature of outreach activities reflect (a) the respective chair's ambitions and priorities; (b) the proactive efforts by non-participating, interested or membership-seeking countries; and (c) the reflection of regime cycles. There tend to be more inward-looking periods, when participating states are preoccupied by unresolved internal difficulties and times when there is consensus and enough energy for the regimes to focus outward. The work necessarily depends on threat perceptions and political agendas (e.g. the current greater focus on nuclear rather than on chemical weapons).

Outreach activities are conducted in different ways. For example, the AG plenary in 2008 endorsed strategies to improve the focus of outreach activities and better coordinate efforts.⁴⁷ For outreach purposes, the AG's website is available in Arabic, Chinese, English, French, German, Spanish and Russian. The AG favours a regional approach and has reached out to over 50 countries (many of them in Asia).⁴⁸

Following requests for technical assistance, an MTCR technical outreach meeting for 15 non-participating states was organized in 2009, and a similar meeting is planned for 2010.⁴⁹ A German proposal for a paper on missile threats to be used for outreach events awaits consensus.⁵⁰ The MTCR has also emphasized outreach to industry.⁵¹

In 2009 the NSG held bilateral outreach talks with Albania, Bosnia and Herzegovina, Egypt, India, Indonesia, Israel, Former Yugoslav Republic of Macedonia, Malaysia, Mexico, Montenegro, Pakistan, Serbia, Singapore, Thailand and the United Arab Emirates.⁵² As noted in an NSG statement, the 'Chair and the other Troika members were mandated to continue contacts with Non-NSG Participating Governments and International Organisations ... to inform them on recent developments within the Group, to assist partners in their efforts to enhance their export controls and to facilitate adherence to the NSG Guidelines.'⁵³ The 2009–10 Hungarian chair has announced a special focus on the Western Balkans.⁵⁴

⁴⁶ Australia Group (note 20). See also chapter 10 in this volume.

⁴⁷ Leahy (note 19).

⁴⁸ Australia Group, '2006 Australia Group plenary', Media release, 12–15 June 2006, <http://www.australiagroup.net/en/agm_june2006.html>.

⁴⁹ Quinn (note 51); and German Government (note 18), p. 93.

⁵⁰ German Government (note 18), p. 93.

⁵¹ Quinn, J., 'Day one: regime updates: Missiles Technology Control Regime', 10th International Export Control Conference (note 19).

⁵² German Government (note 18), p. 88.

⁵³ Nuclear Suppliers Group (note 35). The NSG Troika includes the current, previous and upcoming chairs.

⁵⁴ Stefan (note 29).

In 2009 WA outreach activities included post-plenary briefings, interaction with industry and bilateral outreach to a number of non-participating states. The plenary decided to conduct a technical briefing on changes to the WA control lists for several non-participating states in 2010.⁵⁵

Nuclear-specific issues

While the non-proliferation community is still digesting the repercussions of the NSG decision to exempt India from its guidelines and anticipating the possible impact on 2010 NPT Review Conference, the NSG member states that are pursuing civil-nuclear interests are focusing on practical issues to be resolved.⁵⁶ The 2009 NSG plenary discussions focused on 'the proliferation implications of the nuclear test by North Korea, and Iran's nuclear programme'.⁵⁷

The NSG has yet to agree on new guidelines that would make the International Atomic Energy Agency (IAEA) safeguards contained in the Additional Protocol a precondition for receiving nuclear exports.⁵⁸ The main obstacle to agreement is that not all NSG members have signed the Additional Protocol.⁵⁹ Lack of consensus on these guidelines in the NSG reflect in large part some countries' concern that the guidelines will forestall or limit their options for developing civil nuclear programmes in the future. At its July 2009 summit, the Group of Eight (G8) industrialized countries agreed, with the NSG not yet reaching consensus, to implement the NSG's proposed guidelines in the next year. Among other things, the G8 countries' agreement would mean that they could not export sensitive nuclear technology (i.e. for enrichment and reprocessing).⁶⁰ The increased demand for nuclear energy and the anticipated spread of dual-use nuclear technology

⁵⁵ Wassenaar Arrangement (note 19), p. 1.

⁵⁶ Anthony and Bauer (note 3), pp. 466–71; and Horner, D., 'Indian–U.S. nuclear trade still faces hurdles', *Arms Control Today*, vol. 40, no. 3 (Jan./Feb. 2010).

⁵⁷ Zanathy, G. M., Hungarian ambassador to Austria, 'Opening remarks, NSG transparency seminar', New York, 15 Oct. 2009, <<http://www.nuclearsuppliersgroup.org/Leng/05-public.htm>>. See also chapter 9 in this volume.

⁵⁸ An Additional Protocol is a legal document granting the IAEA inspection authority that complements that provided in underlying safeguards agreements. Comprehensive safeguards are based on a combination of nuclear material accountancy, complemented by containment and surveillance techniques (e.g. tamper-proof seals and cameras that the IAEA installs at facilities to monitor activities on a continuous basis). EU and US governments endorsed the NSG's efforts 'to reach agreement on strengthened export controls on enrichment and reprocessing technologies and on making the Additional Protocol a standard for nuclear supply'. See 'Declaration on non-proliferation and disarmament', EU–US Summit Declaration, 3 Nov. 2009, <http://www.se2009.eu/polopoly_fs/1.21999!menu/standard/file/st15351-re01.en09.pdf>, Annex 3.

⁵⁹ German Government (note 18), p. 89. For a list of states that have signed an Additional Protocol see annex A in this volume.

⁶⁰ G8 Summit, 'L'Aquila statement on non-proliferation', Declaration, L'Aquila, 8 July 2009, <http://www.g8italia2009.it/G8/Home/Summit/G8-G8_Layout_locale-1199882116809_Atti.htm>.

will have a strong impact on non-proliferation and also on future nuclear export controls.

IV. Supply-side and cooperative measures in the European Union

The full implications of the entry into force of the Lisbon Treaty on 1 December 2009 for non-proliferation and export control policies are yet to become clear.⁶¹ The EU will no longer be divided into three pillars: one supranational (known as the Community) and two intergovernmental (one dealing with foreign and security policy and the other with police and judicial cooperation in criminal matters). Nevertheless, a division of competences between member states and the EU remains. The new high representative for foreign affairs and security policy, Catherine Ashton, together with the Council of the EU (the Council), will determine what level of priority to assign to non-proliferation and export control issues and the way in which the new European External Action Service and other actors dealing with these issues will be structured and resourced. One of the known legal implications is that future revisions to dual-use regulations will come under the co-decision procedure (now to be called the normal procedure), which puts the European Parliament in a very powerful position.

In the conventional arms export control area, 2009 was characterized by the national implementation of decisions made in 2008 at the EU level. In December 2008, the EU's Common Rules Governing Control of Exports of Military Technology and Equipment (Common Rules) replaced the EU Code of Conduct on Arms Exports that had been agreed 10 years earlier.⁶² There were also major developments in the legislation governing EU dual-use export controls in 2009.

The Intra-Community Transfers Directive, which was approved by the European Parliament in December 2008, was adopted on 6 May 2009 and entered into force in June 2009.⁶³ It anticipates the use of global and

⁶¹ On the Lisbon Treaty see chapter 4, section III, in this volume.

⁶² Council Common Position 2008/944/CFSP of 8 Dec. 2008 defining common rules governing control of exports of military technology and equipment, *Official Journal of the European Union*, L335, 13 Dec. 2008, pp. 99–103; and Council of the European Union, EU Code of Conduct on Arms Exports, 8675/2/98 Rev. 2, Brussels, 5 June 1998. On the impact of the EU Code of Conduct see Bauer, S. and Bromley, M., *The European Union Code of Conduct on Arms Exports: Improving the Annual Report*, SIPRI Policy Paper no. 8 (SIPRI: Stockholm, Nov. 2004); Bromley, M. and Brzoska, M., 'Towards a common, restrictive EU arms export policy? The impact of the EU Code of Conduct on major conventional arms exports', *European Foreign Affairs Review*, vol. 13, no. 3 (2008), pp. 333–56; and Bromley, M., *The Impact on Domestic Policy of the EU Code of Conduct on Arms Exports: The Czech Republic, the Netherlands and Spain*, SIPRI Policy Paper no. 21 (SIPRI: Stockholm, May 2008).

⁶³ Directive 2009/43/EC of the European Parliament and of the Council of 6 May 2009 simplifying terms and conditions of transfers of defence-related products within the Community, *Official*

general licences for transfers of military equipment within the EU (instead of licences authorizing individual transactions) and the introduction of a certification scheme for recipient companies. Member states are required to implement the directive within two years and apply implementing provisions by 2012.

Recast of the European Union dual-use regulation

EU Regulation 428/2009 regulating the export, brokering and transit of dual-use items, including software and technology, entered into force on 27 August 2009.⁶⁴ The new provisions are the result of over two years of negotiation by the 27 EU member states and replaces Regulation 1334/2000.⁶⁵ The new law brings the EU in line with the requirements of UN Security Council Resolution 1540 regarding brokering, transit and trans-shipment controls.⁶⁶ Although there were EU-wide controls for dual-use items previously, there were none for brokering and transit. However, some member states already had national provisions in place for brokering and transit. Germany, for example, has used an individual intervention clause (*Einzeleingriff*) to give national authorities the legal power to interdict a border-crossing transaction.⁶⁷ German authorities can also use the recently introduced option of preventive seizure.⁶⁸

Regulation 428/2009 establishes a legal possibility for the national authorities to prohibit the transit of listed dual-use items under certain conditions. The transit of listed dual-use items through the EU can be prohibited if the items are or may be intended for a WMD end-use. However, the new regulation includes no EU-wide possibility to stop the transit of unlisted items, although other EU customs and national provisions may apply. In addition, countries can introduce a licensing requirement at national level. The wording of the new transit provision is identical to the legal construction used for the catch-all WMD end-use provisions in the

Journal of the European Union, L146, 10 June 2009, pp. 1–36. See also Anthony and Bauer (note 3), pp. 476–78.

⁶⁴ Council Regulation (EC) no. 428/2009 (note 31). See also section III above; Wetter (note 31); and Council of the European Union, ‘Security-related export controls I: dual use items and technology’, <<http://www.consilium.europa.eu/showPage.aspx?id=408&lang=en>>.

⁶⁵ Council Regulation (EC) no. 1334/2000 (note 31).

⁶⁶ The EU defines trans-shipment as a sub-category of transit.

⁶⁷ This is possible if there is agreement by 3 ministries (Economy, Foreign Affairs and Finance) that this is necessary in order to (a) ‘guarantee the vital security interests of the Federal Republic of Germany’, (b) ‘prevent a disturbance of the peaceful coexistence between nations’, or (c) ‘prevent a major disruption of the foreign relations of the Federal Republic of Germany’. Außenwirtschaftsgesetz [Foreign Trade and Payments Act], 28 Apr. 1961, as amended most recently on 19 Dec. 2009, <<http://bundesrecht.juris.de/awg/index.html>>, Article 2.

⁶⁸ Gesetz über das Zollkriminalamt und die Zollfahndungsämter (Zollfahndungsdienstgesetz, ZFDG) [Law on the customs criminological office and the customs investigation offices (Customs Investigation Service Law)], <<http://bundesrecht.juris.de/zfdg/BJNR320210002.html>>, Article 35b.

same document, with one significant difference: Article 4 applies to exports of unlisted items to a WMD end-use, while the new Article 6 applies to the transit of listed items to a WMD end-use. Although Regulation 428/2009 establishes the legal powers of the state to intervene and defines the obligations of the exporter and, newly, the broker, it does not impose obligations on the person conducting the transit; hence the role of the transit actor is not legally defined.

The regulation's legal end-use construction is also used for the control of brokering activities. It defines brokering as 'the negotiation or arrangement of transactions for the purchase, sale or supply of dual-use items from a third country to any other third country, or the selling or buying of dual-use items that are located in third countries for their transfer to another third country'.⁶⁹ Ancillary services (e.g. insurance) are explicitly excluded. If a broker has been informed by the competent authorities that the items in question are or may be intended for a WMD end-use, the brokering requires an authorization. If a broker is aware that listed dual-use items are intended for a WMD end-use, he or she must notify the competent authorities.⁷⁰ The regulation explicitly gives member states the possibility to expand both the brokering and transit provisions at the national level, for example, through extraterritorial controls and an expanded range of items.

While UN Security Council Resolution 1540 was the main motivation for the revision of Regulation 1334/2000, many other issues were also put on the table once discussions were opened. This partly accounts for the length of the discussions. Another reason was the number of issues generated by the 2004 Peer Review.⁷¹ Furthermore, legal reviews take time, even at national level, and in this instance agreement had to be reached between 27 countries. For example, the decision either to make all dual-use transits subject to a licensing requirement or to prohibit a small number of dual-use transits with a suspected WMD end-use has very different practical implications for EU member states, depending on the volume of transits (in general) and dual-use transits (in particular) through their territory. The discussions revealed the lack of international or EU-wide agreement on definitions of the terms 'brokering', 'transit' and 'trans-shipment', and implementation of their related 1540 requirements. Some issues were left to national discretion, such as how to proceed once a transit is stopped or interrupted.

Regulation 428/2009 is directly applicable in all 27 member states. It requires each state to take the necessary steps to implement and enforce the regulation and to put in place effective, proportionate and dissuasive

⁶⁹ Council Regulation (EC) no. 428/2009 (note 31), Article 2. 'Third countries' are all countries outside the EU.

⁷⁰ Council Regulation (EC) no. 428/2009 (note 31), Article 5.

⁷¹ Anthony, I. and Bauer, S., 'Transfer controls', *SIPRI Yearbook 2005*, pp. 699–719.

sanctions for violations and national laws to implement the regulation. This major task for member states started in 2009 and will continue in the coming years. Prior to EU accession, candidate countries are required to align themselves with the EU *acquis*.⁷² The revision therefore affects accession, candidate and potential candidate countries.

Combating the proliferation of weapons of mass destruction

The 'New lines for action by the European Union in combating the proliferation of weapons of mass destruction and their delivery systems' (New Lines) of December 2008 further develops and complements the EU's 2003 WMD Strategy.⁷³ The New Lines set ambitious goals to achieve by the end of 2010. Among these is the 'better use' for the EU of WMD clauses in agreements with third countries, a concept that was first introduced by the EU's 2003 WMD Strategy.⁷⁴ During 2009 a WMD clause was agreed with Central American countries, China, South Korea, Indonesia, Iraq and the Gulf Cooperation Council.⁷⁵ The EU-Syria Association Agreement, which includes a WMD clause, is awaiting entry into force.⁷⁶ Negotiations with Brunei Darussalam, Libya, Malaysia, the Philippines, Russia, Singapore, Thailand and Viet Nam are ongoing.⁷⁷ However, the record so far is mixed and the differences in the wording of the clause in each case illustrate that proliferation norms are easily compromised where economic interests are at stake.⁷⁸ At the same time, the EU has actively initiated and funded cooperative projects to combat proliferation, including in the area of export controls.

⁷² The *acquis communautaire* is the body of common rights and obligations that is binding on all EU member states.

⁷³ Council of the European Union, Council Conclusions and new lines for action by the European Union in combating the proliferation of weapons of mass destruction and their delivery systems, 17172/08, Brussels, 17 Dec. 2008; and Council of the European Union, 'EU Strategy against Proliferation of Weapons of Mass Destruction', Brussels, 12 Dec. 2003, <http://europa.eu/legislation_summaries/foreign_and_security_policy/cfsp_and_esdp_implementation/133234_en.htm>.

⁷⁴ The EU introduced the non-proliferation clause, also known as the WMD clause, in 2003 as a way to encourage its non-EU partners to enhance their participation in and implementation of multilateral non-proliferation instruments. Grip, L., 'The EU non-proliferation clause: a preliminary assessment', SIPRI Background Paper, Nov. 2009, <http://books.sipri.org/product_info?c_product_id=394>.

⁷⁵ Council of the European Union, Six-monthly progress report on the implementation of the EU Strategy against the proliferation of weapons of mass destruction (2009/I), 11490/09, Brussels, 26 June 2009, p. 36.

⁷⁶ Delegation of the European Union to Syria, 'EU-Syria Association Agreement', <http://www.delsyr.ec.europa.eu/en/eu_and_syria_new/cooperation_agreements_and_priorities_2.htm>.

⁷⁷ Council of the European Union, Six-monthly progress report on the implementation of the EU Strategy against the proliferation of weapons of mass destruction (2009/II), 17387/09, Brussels, 9 Dec. 2009, p. 5.

⁷⁸ Grip (note 74).

Cooperation with non-European Union partner countries on export control

In December 2009 the Council adopted a decision in support of continued EU activities that promote the control of conventional arms exports and the principles and criteria of the Common Rules among third countries.⁷⁹ The 2009 decision will fund regional seminars on conventional arms export control in accession, candidate and European Neighbourhood Policy (ENP) countries during 2010 and 2011. This initiative, unlike the 2008 joint action, will also support staff exchanges and visits by officials from partner countries to export control authorities in the EU. The two-year project will be implemented by the German Office of Economics and Export Controls (Bundesamt für Wirtschaft und Ausfuhrkontrolle, BAFA).

The initiative complements the EU assistance and cooperation programmes in the dual-use area that are funded through the EU budget and also implemented by BAFA, in close cooperation with other EU member states. The main difference between conventional and dual-use outreach initiatives is the financial gap: dual-use export control cooperation has had consistent funding since 2005 for an ever-increasing number of countries, while the conventional export control area has only had ad hoc financing for individual activities and at a much lower level.⁸⁰ The dual-use activities are funded by one of the EU financial instruments for external action, the Instrument for Stability (IFS). The IFS's Multi-annual Indicative Programme for 2009–11, adopted on 8 April 2009, provides €123 million (\$171 million) for chemical, biological, radiological and nuclear (CBRN) risk mitigation, including strengthening export control and combating illicit trafficking.⁸¹ Additional funding to combat such trafficking is available from other parts of the IFS.

⁷⁹ Council Decision 2009/1012/CFSP, which provided €787 000 for conventional outreach initiatives for 2010–11, is a follow-on to the Mar. 2008 joint action on outreach on the then EU Code of Conduct on Arms Exports, which provided €500 500 towards conventional outreach initiatives for 2008–2009. Council Joint Action 2008/230/CFSP of 17 Mar. 2008 on support for EU activities in order to promote the control of arms exports and the principles and criteria of the EU Code of Conduct on arms exports among third countries, *Official Journal of the European Union*, L75, 18 Mar. 2008, pp. 81–85; and Council Decision 2009/1012/CFSP of 22 Dec. 2009 on support for EU activities in order to promote the control of arms exports and the principles and criteria of Common Position 2008/944/CFSP among third countries, *Official Journal of the European Union*, L348, 29 Dec. 2009, pp. 16–20. On Council Joint Action 2008/230/CFSP see also Anthony and Bauer (note 3), pp. 473–74.

⁸⁰ The IFS's indicative budget for 2009–11 proposed €6–10 million for 'assistance and cooperation on export control on dual-use goods'. European Commission, 'The Instrument for Stability: Multi-annual Indicative Programme 2009–2011', Brussels, 8 Apr. 2009, C(2009)2641, <http://ec.europa.eu/external_relations/ifs/docs/>, p. 19. On the funding of conventional outreach activities for 2008–11 see note 79.

⁸¹ European Commission (note 80).

V. Conclusions

The multiplicity of actors involved in proliferation-sensitive transactions and their inherent complexity requires adjustments not just of the concepts and language, but also of related laws as well as licensing and enforcement mechanisms. These also necessitate stronger international cooperation because even those states that do not produce dual-use items may be involved (e.g. as transit and trans-shipment points or through the jurisdiction over their nationals who act as brokers and freight forwarders). International cooperation and assistance increasingly overlap, and there is a need to move beyond the supplier-recipient paradigm and towards cooperative arrangements. The export control regimes cannot escape from this trend. Transparency and outreach to non-members have become essential functions of the regimes. Further challenges will be posed by the need for licensing and enforcement practices and legal provisions to keep pace with technological developments. While traditional export control set-ups do not fully address proliferation's complexity, they are adjusting.