



Centre Français sur les Etats-Unis (CFE)

Space Export Control Update September 2004 to November 2005

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Executive summary

· Dans le contexte de l'après-11 septembre et bien souvent sur initiative américaine, un certain nombre de nouveaux textes internationaux visant à limiter la prolifération des technologies NRBC (nucléaire, radiologique, biologique et chimique), balistique et des technologies duales se met en place.

· Cette évolution ne peut qu'entraîner de nouvelles entraves à l'exportation pour les entreprises du secteur aérospatial aux Etats-Unis. Malgré les efforts de l'administration Bush pendant son premier mandat, aucun assouplissement des régulations d'exportation de matériel sensible ne s'est concrétisé.

Cet échec contraste avec les progrès enregistrés sur des dossiers ponctuels :

· Pour des raisons de politique régionale, les échanges spatiaux avec l'Inde sont désormais encouragés. Des accords officiels prévoyant le lancement commercial de satellites américains par des lanceurs indiens sont en discussion (en revanche, l'embargo sur les lancements chinois reste en place).

· De même, l'achèvement du programme d'ISS va vraisemblablement entraîner l'assouplissement de l'Iran Non-Proliferation Act (INA), seul moyen de rendre possible l'achat de navettes russes.

· Enfin, une nouvelle activité spatiale doit désormais être prise en compte par le législateur américain. Les vols commerciaux suborbitaux intervenus aux Etats-Unis ont donné lieu à des demandes d'exportation des engins spatiaux utilisés, et les risques de prolifération doivent être circonscrits.

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Introduction

Governments control the export of domestic goods and services to accomplish national security and foreign policy objectives. Space products are controlled primarily for national security reasons due to their dual-use capability for both military and civil applications.

Satellites and launch vehicles technologies make up two of the six most heavily regulated dual-use technologies, others being high performance computers, encryption technology, stealth materials, and machine tools. Specific regulated technology of space products include, to name a few, propulsion systems, positioning thrusters, signal encryption, mating and separation mechanisms and multiple satellite/reentry vehicle systems.¹

Points of debate on export controls

The export regulatory regimes of the United States are frequently criticized. Perhaps the most debated topic, and the one most pertinent to space export controls, is the trade off between national security and economic benefits. If advanced technology is exported to potentially hostile countries, this will undermine national security. At the same time, forbidding American firms to export their products to certain countries and groups reduces the demand for the firm's product and their potential profitability. This situation is exacerbated when the product requires economies of scale to produce successfully, allowing the development and production costs to be spread out among a number of sold units. This is often the case with satellites and launch vehicles. Furthermore, when foreign nations with similar advanced technologies are allowed by their governments to export the technology, they gain a competitive advantage in the market.

Another frequent point of debate on space export controls in the U.S. concerns what government department participates in licensing decisions and the time frame and transparency of the licensing review process.

Recent Events

A number of events affecting space export controls have occurred since the last CFE publication on the subject.² The following contains information over the September 2004 to November 2005 time-period. Most notable are renewed multilateral discussions on international agreements controlling the proliferation of nuclear and missile technology, the potential amendment of the Iran Non-Proliferation Act, the new U.S. partnership with India on space technology, and the debate on the regulation of suborbital spacecraft exports.

¹ Ian Fergusson, *The Export Administration Act: Evolution, Provisions, and Debate*, CRS Issue RL31832, updated May 5, 2005.

² CFE reports annually on the evolution of U.S. export control regulations. The last report to do so is: *Les grands thèmes de l'actualité spatiale aux Etats-Unis*, LN, August 2004.

1. Multilateral Export Control Initiatives, Regimes and Agreements

The United States is a member in several multilateral export control initiatives, regimes and agreements that seek to prevent the proliferation of nuclear, radiological, biological and chemical (NRBC) weapons, their means of delivery, such as ballistic missiles, as well as dual-use technologies.³

The international trade of space products is primarily affected by regimes controlling the dissemination of dual-use technologies and ballistic missile technologies. However, most NRBC regimes or initiatives also have a bearing on the export activities of aerospace companies.

The principal international regime that regulates dual use technology is the Wassenaar Arrangement (WA) on Dual-Use Goods and Munitions.^{4 5} Ballistic proliferation falls under the Missile Technology Control Regime (MTCR) and the more recent International Code of Conduct Against Ballistic Missile Proliferation.

Other relevant nonproliferation control regimes and initiatives with which the U.S. is involved include the Proliferation Security Initiative, UN Resolution 1540, and the G-8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction.⁶

Many of these regimes or initiatives have been created in the last few years, often following a U.S. initiative. This increase in world attention to weapon proliferation is largely due to recent events, including the September 11, 2001 terrorist attacks, the discovery of a nuclear proliferation network in Pakistan (managed by A. Q. Khan), and nuclear security threats expressed by Libya and North Korea.

Wassenaar Arrangement (WA) on Dual-Use Goods and Munitions

The Wassenaar Arrangement was created in 1996 as a successor to the Coordinated Committee (CoCom), the dual-use control regime during the Cold War era. Space products fall into Category 5-Telecommunications, Category 6-Sensors and Lasers, Category 7-Navigation and Avionics, and Category 9-Propulsion.⁷

Plenary sessions are held each year to discuss and amend the Wassenaar Arrangement. The last session was in December 2004, in which several modifications were made to the List of Dual-Use Goods & Technologies and Munitions List. A list of changes can be found on the link listed below.⁸ On October 2005, an outreach session of industry, government and think tanks involved in the production and trade of conventional arms

³ Sharon Squassoni, *Proliferation Control Regimes: Background and Status*, CRS Report RL31559, Updated February 10, 2005.

⁴ Richard Grimmett, *Military Technology and Conventional Weapons Export Controls : The Wassenaar Arrangement*, CRS Report RS20517, March 27, 2000.

⁵ See <[http://www.wassenaar.org/list/WA-LIST%20\(04\)%202.pdf](http://www.wassenaar.org/list/WA-LIST%20(04)%202.pdf)>

⁶ The U.S. participates in many other international non-proliferation regimes or initiatives, such as the Australia Group, the Nuclear Suppliers Group and the Nunn-Lugar Cooperative Threat Reduction Program.

⁷ See <[http://www.wassenaar.org/list/WA-LIST%20\(04\)%202.pdf](http://www.wassenaar.org/list/WA-LIST%20(04)%202.pdf)>

⁸ December 2004 Wassenaar Arrangement Plenary Agreement Implementation. See <<http://www.t-b.com/files/Regs%20Jul2005.htm>>

and dual-use goods and technologies met to discuss ways to strengthen export controls.⁹

Missile Technology Control Regime

The Missile Technology Control Regime is an international organization established in 1987 with the purpose of prohibiting the export of missile delivery systems technology. Members of the MTCR are missile supplier countries who agree to create and coordinate national export policies preventing proliferation of ballistic technologies. The 34 participating countries follow MTCR Guidelines and a list of all common controlled items is found in the MTCR Equipment, Software and Technology Annex. Technology listed relevant to space exports include ballistic missiles, space launch vehicles, sounding rockets, cruise missiles, and other UAVs.¹⁰

Last year's MTCR plenary meeting was held in October 6-8, 2004. Specific updates included a desire to control missile exports to Northeast Asia, the Middle East, and South Asia, and to enhance export controls to keep them relevant to technological development.¹¹ It has also been noted that the regulation of suborbital vehicle technology, such as the successors to Scaled Composite's SpaceShipOne, fall under the control of MTCR, as such vehicles can be modified into air-launched ballistic missiles.

This year's plenary was held from September 12-16 of 2005. Significant events pertinent to space export controls include the welcoming of India's announcement to adhere unilaterally to the MTCR guidelines, the sharing of studies and reports on missile proliferation activities, renewed commitments to strengthen export controls, the recognition of new proliferation threats in the Middle East, South and East Asia, and the announcement of new efforts to consult with relevant international bodies that can help promote MTCR's objectives. The Plenary also agreed to several amendments to the MTCR annex.¹²

The U.S. Munitions List (part of the ITAR) is regularly updated to reflect agreements made at the MTCR plenary sessions.

The International Code of Conduct Against Ballistic Missile Proliferation

The International Code of Conduct Against Ballistic Missile Proliferation (ICOC) was inaugurated on November 25, 2002 and is intended to be a supplement to the Missile Technology Control Regime.¹³ It was set up by MTCR members for the purpose of including other, non-supplier, countries of the world into ballistic anti-proliferation efforts.

On October 27, 2004, the United Nations First Committee on Disarmament and International Security approved a draft resolution on the ICOC. Among the measures in the draft directly relevant to space export controls include "To exercise the necessary vigilance in the consideration of assistance to Space Launch Vehicle programs in any

⁹ Press Statement for Outreach to Industry Seminar, October 3, 2005. See <<http://www.usun-vienna.rpo.at/>>

¹⁰ See <<http://www.mtcr.info/english/>>

¹¹ See <<http://www.mtcr.info/english/>>

¹² See < <http://www.sipri.org/contents/expcon/mtcr05.html>>

¹³ See<<http://www.state.gov/t/np/rls/fs/27799.htm>>

other country so as to prevent contributing to delivery systems for weapons of mass destruction, considering that such programs may be used to conceal Ballistic Missile programs.”

Proliferation Security Initiative

The Proliferation Security Initiative was launched by President Bush in May 2003 as an effort to form a partnership of UN member states to prevent the actual transit of NRBC weapons, their delivery systems, and related materials to hostile nations and groups. It includes naval exercises whereby military ships are trained to accost merchant ships and control their load. Most recently, Argentina, Iraq, and Georgia have endorsed the PSI Statement of Interdiction Principles.¹⁴

UN Resolution 1540

Proliferation of controlled technologies is often made possible by falsifying information and documentation, and by groups colluding on transport routes so as to trade goods outside of national export control regimes. To address this, President Bush proposed UN Resolution 1540 in April 2004, which was subsequently adopted by the UN Security Council. The Resolution requests of UN countries that they introduce non-proliferation rules and sanctions into domestic law. Reports outlining the steps they have taken to carry out the resolution are required by each state.¹⁵

The G-8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction

The Global Partnership Against the Spread of Weapons and Materials of Mass Destruction was proposed by President Bush and implemented by the G-8 leaders in June 2002. The goal is to help countries of the former USSR to securely decommission NRBC arsenals that are no longer needed, thereby preventing hostile regimes and groups from obtaining these technology. The U.S. and the rest of the World are committed to provide ten billion dollars each over the next ten years for this initiative (which is why it is often called “10 + 10 over 10”).

In 2004, Australia, Belgium, the Czech Republic, Denmark, Ireland, the Republic of Korea, and New Zealand joined. In Sept 2004, Ukraine was admitted to the partnership, and other former Soviet Union states are currently seeking entrance.¹⁶ The U.S. is also actively assisting other nations in developing the Export Controls and Border Security Assistance (EXBS) program and the International Counterproliferation Program (ICP).¹⁷

All these agreements translate into U.S. internal law and affect commerce of space products and technologies.

¹⁴ See <<http://www.state.gov/t/np/rls/other/46858.htm>>

¹⁵ U.S. Initiative to Prevent Proliferation, Bureau of Nonproliferation and Public Affairs, May 27, 2005, see <<http://www.state.gov/t/np/rls/other/46896.htm>>

¹⁶ See <<http://www.state.gov/t/np/c12743.htm>>

¹⁷ GPWG Annual Report 2005, Consolidate Report Data, Annex A. See <<http://www.ransac.org/>>

2. U.S. bodies and regulations

Space products, including all space launch vehicles, satellites and technical data for the development and production of the International Space Station, are controlled under the International Trade in Arms Regulations (ITAR), established by the Arms Control Exportation Act (1976), and managed by the State Department's Directorate of Defense Trade Controls (DDTC). Within the ITAR is the U.S. Munitions List, containing all technology that is regulated. Of the 21 different categories of products, space products fall under two: Category IV-Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs and Mines; and Category XV-Spacecraft Systems and Associated Equipment, the latter including all satellites and their technology.

Before jurisdiction of all space products was given to the State Department in 1999, the Department of Commerce's Bureau of Industry and Security (BIS) regulated various dual-use space technology under the authority of the Export Administrations Act. The Export Administration Regulations laid out the export licensing policy and procedures and listed the specific regulated space technology in its Commerce Control List.¹⁸

During Bush's first term, there were several attempts to loosen U.S. export controls, following active lobbying from U.S. aerospace companies eager to export satellites components and have their satellites launched by foreign countries. The White House received a NSC report in 2004 that recommended waivers for close allies such as the UK and Australia, the removal of telecommunication satellites components from the ITAR list and the modification of the Export Administration Act, the Export Administration Regulations and the Commerce Control List. Conservative members of Congress disagreed on the ground that this threatened U.S. security. There was also a disagreement between Congress and the Administration on whose authority was needed to alter the export rules of munitions. The outcome of this was that Congress effectively barred any loosening of the export control regime.

There has been no new effort to loosen export control regulations since then. Instead, most of the interest this year has focused on the loosening of the INA.

3. Iran Non-Proliferation Act

The Iran Non-Proliferation Act (INA) was enacted by the U.S. government in 2000 for the purpose of controlling exports to Iran from the U.S. and foreign countries that contain technology related to weapons of mass destruction, missiles and conventional weapons. In particular, section 6 of the Act prohibits the U.S. from making payments to Russia on all activities associated with the International Space Station unless it is deemed that Russia is taking step to lessen proliferation to Iran.¹⁹

The Act is currently being considered for amendment or suspension. The problem is that the U.S. needs to continue to make payments to Russia for Soyuz launch vehicles while

¹⁸ U.S. Commerce Control List, Category 9 - Propulsion Systems, Space Vehicles and Related Equipment. See <<http://www.access.gpo.gov/bis/ear/pdf/ccl9.pdf>>

¹⁹ Sharon Squassoni and Marci Smith, *The Iran Nonproliferation Act and the International Space Station: Issues and Options*, CRS Issue Brief RS22072, March 2, 2005.

the space shuttle fleet continues to be repaired, and potentially in the time-period between the shuttle's retirement and the introduction of the new Crew Exploration Vehicle. Previously, NASA was able to purchase Russian launch services to the ISS through a "Balance Agreement" established between NASA and Russia that required Russia to provide 11 Soyuz crew rotations of U.S. and Russian personnel, but this agreement will end with the last of these 11 Soyuz flights in late 2005.

The Iran Nonproliferation Amendments Act (S.1713) has passed the Senate and House allowing NASA to continue buying Soyuz spacecraft up to 2012. An early version of the bill was passed in September in the Senate which prohibited all payments to Russia starting in 2012 (i.e., the launch vehicles could still be used after this date if already paid for before 2012), but the House modified the bill so that all contracts related to ISS payments with Russia need to be terminated by 2012. The Senate passed the House's modified version on November 10, 2005.²⁰

4. New Partnership with India on Space Technology

The United States is increasingly recognizing India as a strategic economic, political and technologic partner²¹. On January 2004, the United States and India formed the Next Steps in Strategic Partnership (NSSP). Among other things, this partnership will enhance cooperation on space technology and create a conducive environment for the trade of high-technology products. On September 24, 2004, the Bureau of Industry and Security published a rule reflecting the initial steps the U.S. has taken in the Partnership.

Among the steps included are removing the Indian Space Research Organization (ISRO) Headquarters from the Department of Commerce Entity List and removing export license requirements linked to space technologies for the several ISRO subsidiaries still listed on the Entity List.²² This was effective as of July 2005. All restrictions on Indian space technologies are now lifted.

As a result, the U.S. is currently working with India to set up agreements that will allow the launch of U.S. satellites or satellites containing U.S. components by Indian launchers. The State Department is negotiating a Technical Safeguards Agreement that will set up standard provisions for space technology exchanges, such as those that exist regarding China and Russia.

Meanwhile, a Commercial Launch Agreement is being discussed by the U.S. Trade Representative and his Indian counterpart. This will set up the basic principles for satellite launches. Because market demand remains so low, launch quotas, such as those attributed to Ukraine or China in the 1990s, will not be put in place this time around.

The good-will now demonstrated by the U.S. towards India is in sharp contrast to American attitudes towards China. The embargo on Chinese space launches set up at the end of the 1990s remains in place.

²⁰ See <<http://www.spacepolitics.com/>>

²¹ See CFE report : *Les coopérations spatiales entre l'Inde et les Etats-Unis*, LN, avril 2005.

²² See <<http://usinfo.state.gov/gi/Archive/2005/Oct/25-812932.html>>

5. Licensing and regulatory oversight of passenger spacecraft

Since the success of the suborbital flight of Space Ship One in October 2004, debate has begun on how to regulate the sale of suborbital vehicles and flight technology to foreign countries. One of the first hurdles faced by the suborbital flight industry with regard to export controls was Scaled Composites' inability to transfer technology information to UK company Virgin Galactic, the subsidiary of Richard Branson's Virgin Group, which is seeking to buy several of the successor ships of SpaceShipOne (which Scaled Composites manufactures). Virgin Galactic has complained that current U.S. export controls create long delays in placing orders for vehicles and difficulties for foreign companies to fund U.S. technology development programs. As a result of current regulation, Burt Rutan, president of Scaled Composites, has stated he is discouraging potential foreign buyers from purchasing his vehicles until the U.S. suborbital industry is more developed and export controls are loosened. Besides the UK, Scaled Composites has also stated it has received interest from other nations to purchase suborbital vehicles, such as the United Arab Emirates.²³

Recent U.S. government action on suborbital vehicle and technology export controls include the granting of permission in August 2005 by the U.S. State Department's Directorate of Defense Trade Controls to Scaled Composites to exchange technical (i.e., a Technical Exchange Agreement) info with Virgin Galactic in a new joint venture.

Congressman Dana Rohrabacher (R-CA), former chairman of the House Subcommittee on Space and Aeronautics, is arguing for a revision of suborbital export controls and proposed the development of a two-tier export regime where there are looser regulations for U.S. allies.²⁴ The current chairman of the committee, Rep. Ken Calvert, seeks to work with Rohrabacher to create streamlined controls.²⁵

²³ Irene Mona Klotz, *Space Race 2: Red tape for SpaceShipTwo*, United Press International, April 27, 2005.

²⁴ There is already a two-tier regime in place for the export of U.S. satellites. This regime streamlines the licensing process for Nato countries and other US allies.

²⁵ See <http://www.spacepolitics.com/archives/2005_04.html>