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## Bureaucratic Politics Run Amok: The United States and Satellite Export Controls

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The case of export controls of United States (U.S.) commercial satellites is characterized by bureaucratic politics leading to policy outcomes that are not rational, i.e., the desired outcome of national security is not met and commerce in the satellite sector is harmed. The constraints to rational policy making are a result of competition, conflict, and protectionism, the “bureaucratic politics,” among the relevant actors including the U.S. President and Congress, Department of State (State), Department of Commerce (Commerce), and Department of Defense (DOD). It is bureaucratic politics that result in policies for licensing the export of commercial satellites that are far from orderly, stable, and predictable.<sup>1</sup>

The crux of the political issue revolves around bureaucratic control and jurisdiction over the licensing process for export of commercial satellites. Since commercial satellites represent a dual-use space technology,<sup>2</sup> bureaucratic politics exist between the framing of export controls as a matter of national security versus a matter of business and commerce. The national security advocates, among them the president, congress, State, and DOD, view commercial satellites and the related technologies as items to be controlled for export within the same legal regime that controls export and trafficking of arms. State, through the Office of Defense Trade Controls Policy, is the bureaucratic entity that governs this

regime, known as the International Traffic in Arms Regulations (ITAR) and the associated Munitions Control List (MCL). DOD, through the Defense Threat Reduction Agency (DTRA), assists State in implementing its regulatory authority.

The commercial space advocates, among them the president and congress, especially from 1988 to 1998, Commerce, and the aerospace and defense industries, view commercial satellites as an indicator of U.S. leadership with a strong market share in the global commercial satellite sector. Logically, the way to regulate export of these satellites is through the legal regime that governs dual-use technologies used commercially. This is the Export Administration Regulations (EAR) administered by the Commerce Bureau of Industry and Security. Commerce governs exports through the Commerce Control List (CCL). From 1992 to 1999, this regime applied directly to the export of commercial satellites.

This commercially-oriented approach enabled China to compete within the U.S. market for the launch of commercial satellites. From 1992 to 1996, the Chinese Long March rocket failed in launching commercial satellites manufactured by U.S. companies Hughes Space and Communications (purchased by Boeing in 2000) and Space Systems Loral. As required by the insurance companies covering these companies’ assets, investigations into the launch failures were concluded and submitted to Commerce for approval. Commerce then authorized Hughes and Loral to communicate the technical reports to the Chinese launch officials. The transfer of the reports sparked political controversy over the statutory authority of Commerce to allow such a

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<sup>1</sup>Joan-Johnson-Freese, “Alice in Licenseland: U.S. satellite export controls since 1990,” *Space Policy* 16:3 (2000).

<sup>2</sup>Commercial satellites are clearly intended for commercial use and applications, but do represent applications and technologies that could be used for military purposes and military satellite development.

transfer without the proper review and oversight by the State Department.

Specifically, the controversy focused on the export of knowledge dealing with the reliability of space launch vehicle technology, and more generally, was linked to the issue of ballistic missiles and U.S.-

Chinese relations.

Congress

investigated this issue of transfer through the *Report of the Select Committee on U.S. National*

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*Security and Military/Commercial Concerns with the Peoples' Republic of China* (known as the *Cox Report*), and determined that Hughes and Loral transferred to China, in violation of U.S. export control laws– the Arms Export Control Act of 1976 and the ITAR regime– missile design information and knowledge that improved the reliability of the Chinese Long March rocket useful for civil and military purposes.<sup>3</sup>

The congressional response led to the National Defense Authorization Act for Fiscal Year 1999 that directed sole export control responsibility to the State Department using the ITAR/MCL regime for commercial satellites. State's jurisdiction began in March of 1999, and continues through this writing in 2007. According to many space leaders, the application of ITAR to commercial space technologies is a

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<sup>3</sup>*Report of the Select Committee on U.S. National Security and Military/Commercial Concerns with the Peoples' Republic of China* (United States House of Representatives, 1999). See <http://www.house.gov/coxreport> (accessed 11 December 2006).

Both Boeing and Loral were fined by the U.S. federal government for the export violations and both companies paid fines in 2002. Boeing was also charged with similar export violations concerning Sea Launch– a joint venture with Russian, Ukrainian, and Norwegian companies– during this same period.

misapplication of the regime and is one of the top space policy issues requiring congressional redress.<sup>4</sup>

### **International and Domestic Environments**

To assess the case of export controls and commercial satellites, it is important to first explain how national security and commercial space advocates' respective policy preferences, needs, wants, demands, and expectations, are influenced by the international and domestic environments. The international and domestic environments date back to the Cold War and the issue of how to control dual-use technologies. The concern, then and now, is that such technologies can be used for the development of arms that can lead to proliferation of ballistic missiles, and nuclear, biological, and chemical weaponry. Dual-use technologies with these potential applications are viewed by national security advocates as sensitive items to be controlled.

One aspect of control lies with the statutory authority within the U.S. for dual-use technologies. This authority lies with the Export Administration Act (EAA) of 1979 in which congress delegated to the executive branch the legal authority to regulate foreign commerce by controlling and licensing exports. EAA is the domestic environment from which the Commerce Department's EAR regime emerged. Of note, the EAA expired in September 1990; reauthorization of EAA took place for short periods with the last incremental extension expiring in August of 2001. Since then, no new congressional legislation has been passed to either reauthorize or rewrite EAA, and the regime functions on the basis of presidential authority under the International Emergency Economics Powers Act.

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<sup>4</sup>*The Space Report: The Guide to Global Space Activities* (Space Foundation, Colorado Springs, Colorado, 2006); and *Space 2030: Exploring the Future of Space Applications* (Organization for Economic Cooperation and Development, Paris, France, 2004).

Within the context of the post-September 11, 2001 (9/11) environment and the resulting emphasis on national security, at times to the detriment of commercial interests, the congressional failure to act on the EAA further strengthens and maintains the State-led ITAR regime for control of commercial satellites. Furthermore, the origins of the EAA are Cold War related and originate from the Export Control Act of 1949. Even though the EAA of 1979 represents a lessening of restrictive export control in comparison to the Export Control Act and subsequent amendments to that Act, the legal regime is a relic of Cold War international politics and national security rivalries.<sup>5</sup> EAA has not been sufficiently adapted as an export control regime for the post Cold War international environment of non-traditional security concerns, developments in space technologies, capabilities and applications, and the emergence of global commercial space activities.

A second aspect of control deals with the Arms Export Control Act of 1976, the basis for the ITAR export control regime. This regime was also established during the Cold War environment and has not undergone any statutory changes. Further, neither State nor DOD made any changes to the implementation modalities of any of these Cold War regimes.<sup>6</sup> During 1999-2000, both the president and congress noted the need to review the arms export control regime to streamline the processing of applications for export licenses. Neither State nor DOD acted on these recommendations. The issue of delays and the cost of bureaucratic compliance in the granting of export licenses is one of the key concerns of the commercial space advocates; these concerns translate into an economic issue for the commercial satellite sector. The economic issue

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<sup>5</sup>Ian F. Fergusson, *The Export Administration Act: Evolution, Provisions, and Debate* (United States Congressional Research Service, The Library of Congress, updated May 5, 2005).

<sup>6</sup>*Defense Trade, Arms Export Control System in the Post-9/11 Environment* (United States Government Accountability Report, February 2005).

also posits a barrier to entry for new space commercial companies, often referred to as alternative space, that are attempting to enter into existing markets, such as space launch services, or to develop new markets, such as space tourism. A third aspect dealing with the control issue exists at the international level. In 1949, a multilateral export control regime called the Coordinating Committee for Multilateral Export Controls (CoCom), involving North Atlantic Treaty Organization (NATO) allies, was established. This regime mirrored U.S. domestic controls as established with the Export Control Act of 1949. CoCom advanced restrictive export controls on sensitive dual-use technologies at the multilateral level. The regime was dissolved in 1994 and replaced in 1996 by the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies. The Wassenaar Arrangement, as compared to CoCom, lessened export controls of dual-use technologies at the international level and is more loosely organized with more limited institutional structures. It relies on consensus by state members, frequently resulting in a lowest common denominator approach for multilateral export control, minimal reporting requirements preventing pre-export consultations among state members, and a lack of authority among state members to block transactions of other state members.<sup>7</sup> In addition, the liberal multilateral regime that emerged with Wassenaar no longer sought multilateral control over commercial satellite technology or expertise. This development influenced the U.S. environment and raised national security concerns when dealing with the export of dual-use technologies. In the end, the liberalization of the international legal regime is a factor that favors the national security space advocates' position and their preference for ITAR as the regime to control and license exports of commercial satellites and the related technologies.

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<sup>7</sup>Ian F. Fergusson, *The Export Administration Act: Evolution, Provisions, and Debate* (United States Congressional Research Service, The Library of Congress, updated May 5, 2005).

## Communications Channels

Given an understanding of the policy preferences of the relevant actors, what then are the communications channels through which the policy of export control is applied? This is largely a function of the relevant bureaucratic strategic cultures. The strategic cultures of the national security advocates versus the space commerce advocates frame the political debates and arguments. This framing represents the organizational lenses, images, and “rules of the game” regarding export controls of commercial satellites.

Commercial space advocates frame the export control issue through the lens of foreign availability of technology. The contention is that the proliferation of technology cannot be effectively controlled and U.S. dominance of space technology cannot be assumed. The globalization of space commerce points to the fact that unilateral controls will not stop foreign states from acquiring the technologies. Thus, U.S. dominance in space commerce is diminished, while foreign businesses win new markets and gain incentives to enter into new markets.<sup>8</sup> All this is complicated by the fact that as space commerce is increasingly global many components in the commercial satellite sector are manufactured worldwide and considered commercial commodities. ITAR is not designed to deal with the global nature of the industry and the outcome provides an incentive for foreign commercial satellite developers to reduce dependence on U.S. satellite components due to delays associated with the U.S. export licensing process. The emerging trend is one where U.S. satellite manufacturing companies, which must

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<sup>8</sup>Export controls on space commerce create risk through uncertainties, result in losses of markets because of impacts on space industry’s ability to serve international markets, and prevent efficient industry restructuring to the forces of globalization. See *Space 2030: Exploring the Future of Space Applications* (Organization for Economic Cooperation and Development, Paris, France, 2004).

adhere to ITAR restrictions, are at a growing disadvantage as inventory of “ITAR-free,” i.e., no U.S. manufactured components, satellites expand abroad.<sup>9</sup>

In addition to the economic argument, space commerce advocates see a link between national security and robust export control industries, and favor an export control regime that is streamlined, less complex, and not an impediment to exports. As an example, Commerce presumes that the issuing of an export license is routine unless good cause can be shown otherwise. Space commerce advocates argue that national security is undermined when exports are impeded, resulting

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in the loss of U.S. market share. The limitation of U.S. satellite components through export controls leads to greater foreign research and development (R&D) investments in this area. In turn, these foreign R&D investments can be leveraged to achieve parity and even surpass the U.S. technological lead. In conclusion, space commerce advocates frame commercial satellite technology as possessing no inherent strategic or military relevance, a view shared with the state members of the Wassenaar Arrangement with the exception of the U.S.<sup>10</sup>

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<sup>9</sup>In Europe, Alcatel Alenia Space and the European Aeronautic Defense and Space Company have both made it company policy to build ITAR-free commercial satellites.

<sup>10</sup>Wassenaar Arrangement state members in addition to the U.S., include: Argentina, Australia, Austria, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, Netherlands, New Zealand, Norway, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, and United Kingdom.

In contrast, the national security advocates maintain that there is a need to control commercial space exports as sensitive military technologies. This control prevents the proliferation of technologies that could be used by hostile, rogue states against the U.S. or its allies, secures DOD's reliance on the commercial sector for R&D as a result of declining defense budgets in the 1990s, and sustains the U.S. military use of commercial space assets for operations, including commercial satellites for telecommunications and remote sensing purposes. National security is framed in ideological and "war-fighting" terms—limiting the diffusion of technology advances U.S. foreign policy interests and enhances national security. The framing of export control as a national security issue compelled congress to place commercial satellites and related technologies within the authority of the ITAR/MCL regime.<sup>11</sup> The Chinese Long March "satellite scandal" discussed earlier and the events of 9/11 served to strengthen this worldview and weaken political attempts to reform the export control regime.

### Conversion and Outputs

Since the view herein is that the case of export controls is one of bureaucratic politics leading to policy outcomes that are not rational, how the relevant organizations interact, i.e., the U.S. President and Congress, and the relevant bureaucracies, is crucial to understand. A rational policy-making process suggest outputs that serve the desired communications channels of at least one group of advocates. In this case, the policy outputs, albeit unintended, do not ideally realize the policy preferences of either the national security or commercial space advocates. On one hand, ITAR can damage national security by placing legal and bureaucratic restrictions on the U.S. military use of commercial space assets that

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<sup>11</sup>It is the sense of the U.S. Congress that business interests must not be placed above national security interests. See Strom Thurmond National Defense Authorization Act for Fiscal Year 1999.

rely on a robust satellite industry.<sup>12</sup> This includes risks to the military use of: commercial satellites for operational support; advanced satellite technologies developed in the commercial sector; and foreign suppliers for satellite components and services needed for military operations. On the other hand, export control of commercial satellites vis-à-vis ITAR has made the U.S. space and satellite component industry less competitive internationally and contributed to a weakening of U.S. market position.<sup>13</sup>

How did the issue of export controls of commercial satellites result in policy outputs that are not desired? The answer to this question lies in the nature of how the relevant political actors serve as conversion structures. Prior to 1992, export control of commercial satellites fell within the purview of the ITAR regime, but beginning in 1988 President Reagan began to loosen export restrictions on commercial satellites to keep U.S.

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<sup>12</sup>Thomas Moorman, *U.S. Space Industrial Base Study* (Booz-Allen & Hamilton: McLean, Virginia, 2000).

<sup>13</sup>Since the application of the ITAR regime for export control of commercial satellites in March 1999, U.S. global share of commercial satellite manufacturing revenues fell to 41% in 2005 from 51% in 2000; U.S. commercial satellite component suppliers captured 90% of the global market in 1995, whereas by 2000 they retained only 56%; U.S. satellite firms lost approximately \$5 billion between March 1999 and the end of 2001; and, from 1999 to 2004, it is estimated that U.S. share of the lucrative geostationary satellite market declined by 16%. See *State of the Satellite Industry Report* (Futron Corporation, Washington, DC, June 2006); Robert D. Lamb, *Satellites, Security, and Scandal: Understanding the Politics of Export Controls* (University of Maryland, College Park, Center for International and Security Studies at Maryland, January 2005); *Space 2030: Exploring the Future of Space Applications* (Organization for Economic Cooperation and Development, Paris, France, 2004); and *State of the Space Industry* (International Space Business Council, Washington, DC, 2000).

industry competitive in global markets and to advance national space policy for the development of the commercial space sector. The following Bush and Clinton administrations shared these policy preferences and acted to these ends. Bush and Clinton used presidential legal authority to waive trade sanctions with China put in place through congressional legislation following the Tiananmen Square massacre. The sanctions waived included commercial satellites for export to launch on the Chinese Long March. The policy conflict between the president and congress set the stage for the Chinese satellite scandal and the resulting 1999 congressional legislation that reversed the loosening of export controls initiated by Reagan.

The theme of policy conflict continued as Bush made use of presidential authority to extend EAA and pocket vetoed a congressional bill that would have amended and extended the full EAA on a permanent basis.<sup>14</sup> In this bill, congress took more of a national security position on the export of dual-use items in conflict with Bush's post Cold War commercial view for the increased role of economic power in national security. Bush sustained this view by removing all items from MCL that were on the CoCom dual-use list. This led to split jurisdiction, from 1992-1996, between State and Commerce for export controls. An interagency review process initiated by Bush determined which of the dual-use items listed on MCL could be transferred to CCL. Under the Commerce Department's business-friendly licensing process, these transfers made it easier to export some commercial satellites for foreign launches. Less advanced commercial satellites

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were exported as commercial goods under the EAR regime. Throughout the story of commercial satellite export controls, State and Commerce have both sought influence and authority, and split jurisdiction was viewed by the actors as a compromise way to resolve this dispute.<sup>15</sup> Nevertheless, the differences in strategic cultures of each bureaucracy sustained the struggle for political influence over export controls.

As a result of split jurisdiction, the technical parameters for determining whether commercial satellites should be treated as munitions or dual-use commercial goods became unworkable by 1995. One of the issues that emerged was that the export regulatory bureaucracies at Commerce, State, and Defense lacked the requisite technical expertise to determine which technologies to control as munitions versus which could be exported as commercial commodities.<sup>16</sup> This was exacerbated by the fact that regulatory monitors were asked to implement near impossible tasks—apply overlapping, self-contradictory rigid sets of rules and track all hardware for export without explicit guidance on what to protect for reasons of national security and what are commercial commodities. Consequently, split jurisdiction was abandoned as a policy preference by the actors. In October 1996, and until March 1999, congress assigned Commerce primary jurisdiction. Since then, commercial satellites and related technologies are listed on MCL and regulated for export by State.

The moves undertaken by the political actors to transfer jurisdiction to Commerce were met with countermoves by State export officials determined to exert their full authority to the extent permissible by law. The political process

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<sup>15</sup>Marcia S. Smith, *Space Launch Vehicles: Government Activities, Commercial Competition, and Satellite Exports* (United States Congressional Research Service, The Library of Congress, updated 1 January 2006).

<sup>16</sup>*Preserving America's Strength in Satellite Technology, A Report of the CSIS Satellite Commission* (Center for Strategic and International Studies, Washington, DC, 2002).

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<sup>14</sup>The congressional bill pocket vetoed by President Bush was the Omnibus Export Amendments Act of 1990.

underlying the transfer to Commerce's jurisdiction was characterized by bureaucratic politics and conflicts. Both export control bureaucracies sought regulatory authority and their self-interest to do so became a goal in-and-of-itself. The bureaucratic politics concept that "where you sit defines who you are" applies directly in this case; State and Commerce regulators were explicitly tied to the strategic cultural perspectives of their organizations. As policy preferences for Commerce's jurisdiction moved to fruition by 1996, State pursued enforcement regulations that made it increasingly difficult and costly for satellite companies to export if even a single component remained subject to State control through MCL.

Congressional reaction to the Chinese affair and the sustained efforts of national security advocates advancing their case for export controls led to congressional legislation that resulted in sole State jurisdiction in 1999. This action was reactive rather than rational. One indication of this is that the export violations committed by Hughes, Loral, and Boeing did not damage U.S. national security in any material way; the expertise transferred to China only marginally benefited Chinese missile programs by improving launch reliability.<sup>17</sup> Many of the breaches were little more than technical violations of State export control regulations dealing with services that could "in theory" be applied for national security purposes.<sup>18</sup>

The policy output of State jurisdiction is suboptimal; rather than seeking a compromise, State countered the preferred policy preferences of the commercial space advocates. Given the drive for bureaucratic self-preservation, State

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<sup>17</sup>*Report of the Select Committee on U.S. National Security and Military/Commercial Concerns with the Peoples' Republic of China* (United States House of Representatives, 1999).

<sup>18</sup>Robert D. Lamb, *Satellites, Security, and Scandal: Understanding the Politics of Export Controls* (University of Maryland, College Park, Center for International and Security Studies at Maryland, January 2005).

took the congressional mandate for sole jurisdiction and unilaterally implemented its approach, through administrative rule making, to realize its national security perspective.

This raises a number of issues. First is the issue of what was intended by the *Cox Report* recommendations, which had prompted congress to give State commercial satellite licensing authority. It is not clear whether the recommendations intended to control the export diffusion of technology from solely a national security standpoint, or to control the technology diffusion in a way to satisfy both national security and commercial advocates' preferences. This ambiguity provided State the opportunity to advance their national security perspective. Concomitantly, officials at State expressed their desire to work with space commercial businesses by facilitating and approving ITAR applications, and viewed the political problem as rooted in the congressional mandate for State's sole jurisdiction and enforcement of the export control law.<sup>19</sup> In fact, State does approve the vast majority of export license applications.<sup>20</sup> The issue with the export control of commercial satellites within the ITAR regime is not one of denial of licenses, but rather in how State enforces the law. Enforcement leads to excessive delays and bureaucratic compliance with export regulations that are a cost to the commercial satellite sector.

What is also clear is that State is enforcing the law in ways that are not necessarily what congress intended, yet congress itself fails to act on this problem. To illustrate, the *Cox Report* called for: congressional reauthorization of EAA; continuous updating of the export control regime; and streamlining the licensing procedures to provide greater transparency, predictability, and

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<sup>19</sup>Interview, Ann Ganzer, Director of the Office of Defense Trade Controls Policy, Department of State, The Space Show, 12 February 2006. See [www.thespaceshow.com](http://www.thespaceshow.com) (accessed 4 June 2007).

<sup>20</sup>Since the listing of commercial satellites within the ITAR export control regime in 1999, only 1% to 2% of all export license requests are denied.



certainty. In all these areas, neither State nor congress took any substantive actions. Not only did State act unilaterally to do other than what was recommended by the *Cox Report*, but congress also failed in its basic oversight role to hold State accountable to congressional policy preferences. This dynamic, together with the events of 9/11, stalled reform advocates' efforts. Although there is pending legislation in congress to follow through on the *Cox Report* recommendations, the advocates are in the minority. The proposed congressional Satellite Trade and Security Act of 2001 went as far as to restore Commerce jurisdiction, though the measure failed to advance, and through the 110<sup>th</sup> Congress of today there have been no serious attempts to introduce subsequent legislation or to put the issue on the agenda.<sup>21</sup> Other barriers to reform include export risks and organizational constraints on expediting State's process for exporting commercial satellites.<sup>22</sup> These barriers stem from the fact that technical expertise at State and Defense is lacking. Even though some incremental advances in addressing these barriers have taken place, as recommended by the *Cox Report*, the policy lesson of spilt jurisdiction is that determining risk is in many ways unworkable and the control of satellite exports through the national security lens does not readily lend itself to streamlining the licensing process.

A congressional bill to expedite the State Department process for exporting commercial satellites, particularly to states considered friendly to the U.S., such as NATO allies and other major non-NATO allies, was signed into law in 2004. With this bill, every effort was made to allay national security concerns, while attempting to find ways to not only sell commercial satellites

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<sup>21</sup>In addition to the Satellite Trade and Security Act of 2001, congressional sponsors have proposed amendments to the Export Administration Act and other separate bills that would return export licensing authority for commercial satellites to Commerce.

<sup>22</sup>The inability to accurately measure risk to national security is one of the most serious problems for the system of export controls.

abroad, but to allow the transfer of information necessary to bid on new projects as well as respond to business requests for information on existing systems. Of note is that in 2000, following the *Cox Report* recommendations, congress allocated additional funds to State to allow for addressing the issues of technical expertise and expediting the licensing process. At that time, State unilaterally acted to shift these funds within the bureaucracy away from the congressional intent. The 2004 mandate by congress is more closely monitored, and State is working to deal with the expertise and delay barriers. One significant effort underway is the development of an electronic filing system for export licenses at State.

The policy dynamic discussed earlier, State countering Commerce, persisted under sole State jurisdiction. State unilaterally reversed the Commerce approach that exempted many items from requiring licenses,<sup>23</sup> extended ITAR controls to U.S. allies for commercial satellites,<sup>24</sup> and advanced regulations that required return of hardware to its state of origin for repair. State also issued retroactive regulations for the Technology Assistance Agreements (TAAs) governing technology transfers for satellites that had been licensed by Commerce. TAAs are required for marketing discussions and the exchange of basic

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<sup>23</sup>Commerce exempted basic items, like screws and knobs for example, from export control.

<sup>24</sup>The Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 included language that MCL shall not necessarily apply to the "export of a satellite or related items for launch in, or by nationals of, a state that is a member of NATO, or that is a major non-NATO ally of the United States." In implementing ITAR, State interpreted this exception to apply only to the mandated monitoring activities. Further, the expanded definitions of satellite related components, and the additions of defense technical services and space insurance business meetings as new areas needing export licenses, led to the bureaucratic "micro-regulation" of the U.S. commercial satellite industry in response to accusations initially related to China.

technical information with insurance companies and launch service providers for satellites exported and launched. State's retroactive approach created a situation where new technology transfer licenses and TAAs had to be issued for satellites already operating in orbit. State even acted to reverse Reagan's decision that exempted fundamental research information from an export license.<sup>25</sup> Export directives to control such information affect the National Aeronautics and Space Administration (NASA), universities, and industry R&D as they require licenses for any collaboration with foreign nationals on fundamental research. In addition, State and Defense practice intrusive monitoring, allowing monitors' access to proprietary knowledge. Despite this, industry has not objected in any direct way due to a fear of congressional reaction and their dependence on governmental contracts.<sup>26</sup>

general sense was that U.S. business and commercial interests should never trump national security interests. State succeeded in advancing their national security worldview as the U.S. national interest, a costly situation for commercial space and their advocates.

### **Conclusions**

The commercial satellite export case posits damaging consequences for U.S. technology and business leadership in space. The political process began with the incremental political liberalization of export controls in response to the changing international post Cold War environment and the rapid increase in space commerce globally. The process then transitioned to congressional action to overturn the then existing satellite export control regime in favor of Commerce jurisdiction. All the while, the process was driven by bureaucratic politics between Commerce and State. In the context of the post 9/11 world and the security concerns the attack generated, the

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<sup>25</sup>In 1985, President Regan issued an ITAR exemption for fundamental research conducted at U.S. universities. National Security Decision Directive 189, 21 September 1985.

<sup>26</sup>In March of 2007, the Coalition for Security and Competitiveness, that does include a number of professional associations that represent the aerospace industry, began advocating for export control reform on dual-use items. See [www.securityandcompetitiveness.org](http://www.securityandcompetitiveness.org) (accessed 25 June 2007).