

**Written Testimony for Patricia Cooper,  
President, Satellite Industry Association (SIA)  
Before the House Foreign Affairs Committee (HFAC) –  
Subcommittee on Terrorism, Non-Proliferation and Trade  
Hearing on Export Controls on Satellite Technology  
April 2, 2009**

Mr. Chairman, Mr. Royce, distinguished members of the Subcommittee; thank you for inviting me to testify today on the critical issue of export controls in the United States. As President of the Satellite Industry Association (“SIA”), I speak here as the unified voice for the leading satellite manufacturers, launch services providers, satellite operators, service providers, and ground equipment suppliers.<sup>1</sup> While the satellite industry is certainly not monolithic, SIA speaks when the industry has a common view on policy, regulatory, and legislative issues that affect its business. We hold such a common view on export controls for satellites and space-related products.

SIA believes that U.S. technological leadership in space and the competitiveness of America’s space sector is a key component to our nation’s security. As key segment of the space industry, the commercial satellite industry endorses strong, sensible and effective export controls which ensure that the most advanced technologies do not fall into the hands of our adversaries.

SIA also believes the time is ripe for Congress to review its decision of more than ten years ago to mandate by legislation that exports of all satellites and related components and technology be controlled by the State Department and licensed pursuant to the

---

<sup>1</sup> SIA Executive Members include: Arrowhead Global Solutions Inc.; Artel Inc.; The Boeing Company; DataPath, Inc.; The DIRECTV Group; Hughes Network Systems, LLC; ICO Global Communications; Integral Systems, Inc.; Intelsat, Ltd.; Iridium Satellite, LLC; Lockheed Martin Corp.; Loral Space & Communications Inc.; Northrop Grumman Corporation; SES Americom, Inc.; SkyTerra LLC; and TerreStar Networks, Inc. Associate Members include: ATK Inc.; Comtech EF Data Corp.; DRS Technologies; EchoStar Satellite, LLC; EMC, Inc.; Eutelsat Inc.; iDirect Government Technologies; Inmarsat Inc.; Marshall Communications Corp.; Panasonic Avionics Corporation; Spacecom Ltd.; Stratos Global Corp; SWE-DISH Space Corp; Telesat; ViaSat, Inc., and WildBlue Communications, Inc. More information on SIA can be found at [www.sia.org](http://www.sia.org)

International Traffic in Arms Regulations (ITAR). Notwithstanding their original intent, SIA believes that the current rules governing exports of satellites sold commercially have resulted in overly broad regulation that disadvantages U.S. spacecraft and component manufacturers in the global marketplace, without necessarily having accomplished the desired intent. This has created an impact on the broader U.S. space industry and raised concerns about the health of the underlying space industrial base supporting the defense, intelligence and civil space communities.

As this Sub-committee well knows, the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 transferred export licensing authority for communications satellites and related components to the U.S. State Department. Section 1513 of that Act specified that *“Notwithstanding any other provision of law, all satellites and related items that are on the Commerce Control List of dual-use items in the Export Administration Regulations (15 CFR part 730 et seq.) on the date of the enactment of this Act shall be transferred to the United States Munitions List and controlled under section 38 of the Arms Export Control Act (22 U.S.C. 2778).”*

Following this Congressional action, “satellites and related items” were added to the U.S. Munitions List (“USML”), including the export of completed commercial satellites for launch, and trade in most U.S. satellite components, as well as certain ground equipment and software to control spacecraft, and technical data related to these products.

Satellites are the only commodities on the USML for which export licensing jurisdiction is mandated by law, rather than regulation. This Congressional mandate has left the Executive Branch with limited discretionary authority over export controls for commercial satellites and all related technologies, including parts and components, technical data, and defense services. SIA questions fundamentally whether commercial satellite technology merits this extraordinary and unique position of legislative oversight in comparison to all other sensitive technologies included in USML.

Moreover, the USML Chapter containing satellites and associated components (Category XV on “Spacecraft Systems and Associated Equipment”) remains largely untouched from ten years ago. In a one-size fits all manner, it captures all satellite products and components, even those that may have been the cutting edge of space technology in the late 1990s, but which are no longer deemed militarily sensitive today – and which in many instances are widely available from non-U.S. sources. Careful review and update of the satellite-related technologies included USML should be a first priority, in order to ensure that licensing and oversight resources are not being expended on products of limited military or competitive value in today’s context.

The commercial satellite industry is an important element in the U.S. economy, contributing year-on-year growth, innovation and revenues. U.S. satellite companies generated an estimated 40 percent of the \$123 billion global satellite industry in 2007, according to SIA’s own studies. Satellite companies are also part of the larger aerospace industry, which the Aerospace Industries Association calculates as totaling \$204 billion in sales in 2007, of which \$33 billion was for the U.S. sales of space systems.

Overall, the world satellite industry has grown steadily since 2002, posting an average annual growth rate of 11.5 percent. The satellite services sector is the largest revenue source for the global industry overall, stemming from communications services that rely on satellites for their connectivity -- distribution of television content, telecommunications and Internet backbone services, corporate communications networks, public safety communications, and defense communications applications. The strongest driver has been consumer satellite services, such as satellite television, which expanded from about half of the 2002 market to nearly two-thirds of 2007 revenues. In contrast, the global satellite manufacturing sector overall has remained relatively steady, at or around \$3 billion annually, with some fluctuations following the dot-com years. The world market for satellites and satellite-related components is a tight and highly-contested marketplace. In each of the past two years, just 21 satellites were ordered, with prices ranging from between \$200-500 million, depending on their technical complexity.

The four major U.S. prime manufacturers – Boeing, Lockheed Martin, Orbital and Space Systems/Loral – are used to competition from their traditional European rivals in the world marketplace, EADS Astrium and Thales Alenia Space. U.S. manufacturers have aggressively competed for and won bids at home and abroad, both for smaller spacecraft, as well as for more complex satellites. At the prime manufacturing level, relative market shares for the U.S. satellite manufacturing sector have remained steady at around 40 percent for the past two to three years. This is a notable drop from the 65 percent market share that U.S. manufacturers held ten years ago, when the decision to capture satellites under the ITAR was made.

SIA is concerned about the U.S. satellite manufacturing sector's ongoing ability to compete for the relatively limited number of commercially-competed communications satellites. Until recently, most satellites manufactured anywhere in the world required the inclusion of U.S. componentry or subsystems that are regulated under the ITAR. In other words, virtually all satellites had some measure of ITAR regulation, no matter where they were made, so that any added time, cost or uncertainty stemming from ITAR-compliance was shared by all manufacturers.

This is no longer the case. In the past few years, European manufacturers have developed the capability to produce the requisite parts and components for a spacecraft without U.S. content. One European manufacturer, Thales Alenia space, has begun to market an "ITAR-Free" satellite. Because European countries do not export control satellites as munitions, as does the U.S., these "ITAR-Free" satellites are traded as commercial/dual-use products under far less stringent controls. We know of at least six such "ITAR-Free" satellites sold to date, the first to Chinese and Hong Kong satellite operators, and more recently to Indonesian, Egyptian and European satellite operators. We also anticipate that German and Israeli manufacturers will soon join Thales in beginning to market "ITAR-Free" satellites. Additionally, manufacturers from India, Russia, and China are now marketing complete satellites to customers beyond their own domestic satellite operators, offering increasing technical sophistication.

While price, quality and technical capabilities previously defined the competitive landscape, it is increasingly clear that U.S. export controls have affected American firms' ability to compete globally. Whether for real or perceived reasons, many international satellite customers maintain a strongly-held perception that U.S. export controls are unpredictable, excessively stringent and time-consuming. In addition, to European firms marketing spacecraft as "ITAR-Free," we are anecdotally observing increasing numbers of satellite operators from around the world preferring to purchase satellites that exclude U.S. technology and avoid the concomitant ITAR requirements. In some cases, proposals require delivery of technical data in timetables that are simply not feasible, given the needed time to secure the requisite ITAR approvals, licenses and Congressional notification. Some European Space Agency programs now have explicitly required "ITAR-Free" bids.

These developments represent an added constraint on U.S. companies' ability to win business from traditional international satellite customers, posing a longer-term competitiveness concern. Addressing this challenge requires action on two fronts: first, redouble the ongoing efforts to make ITAR licensing process more efficient, timely, and predictable. We applaud the significant progress made by the State Department toward this end and support further streamlining. Second, and more critically, the USML must be closely evaluated to focus exclusively on those products that merit control – those products that are technologically critical to our nation's security or competitiveness. As it now stands, the satellite category simply includes everything, with no differentiation or mechanism to reflect changes in technological sensitivity, military requirements or availability from non-U.S. sources.

In the ten years since satellites were added to the U.S. Munitions List, U.S. industry has dedicated significant resources to secure the requisite approvals to export commercial satellites. U.S. satellite manufacturers may need as many as six separate licenses required for a single commercial communications spacecraft, from marketing to design to manufacture to launch. The administrative costs of ITAR compliance were documented in a 2008 study from the Center for Strategic and International Studies (CSIS) entitled

“Health of the U.S. Space Industrial Base and the Impact of Export Controls.” The report cited an average cost of \$50 million per year for the industry’s ITAR compliance, with licensing issues costing as much as \$600 million per year of lost revenues.

Much could be gained by further streamlining and rationalizing the licensing process, Different and distinct ITAR licenses are required throughout the marketing, design, construction, launch and operational phases. From the outset, satellite licenses are required to exchange the marketing and technical data needed to actually sell a commercial spacecraft to a prospective satellite operator customer, to discuss spacecraft design with non-U.S. component suppliers and to return faulty foreign components that were imported without any licensing requirements. U.S. manufacturers need a license for the technical data required to integrate U.S. spacecraft on non-U.S. launch vehicles, as well as the actual physical shipment of the completed spacecraft to an offshore launch facility. Additional licenses are required for the onboard fuels used in the launch and eventual “stationkeeping” or control of the satellite and the specialized ground equipment used for tracking, telemetry and control of the spacecraft during launch, deployment and then during the lifetime of the satellite.

U.S. export policies have a significant effect throughout the satellite industry, due in part to the Congressional requirement that the ITAR includes virtually all satellite-related products and components, also because the satellite manufacturing, services, launch and ground equipment sectors are highly interdependent. Satellite operators – the eventual customers– often require ITAR licenses to discuss the technical specifics of the spacecraft they operate with their international television, telecom and Internet customers, or their operational control of the satellites they “fly.” By some of our operator members’ estimates, ITAR adds administrative costs of nearly \$1 million annually to owner/operators of commercial satellites. The effective cost of ITAR is even greater for smaller and start-up companies, particularly those not otherwise serving the defense market and fluent in such export control requirements. Our concern is not only that compliance is costly and time-consuming; rather, we question whether the current U.S. export controls are achieving the national security objectives originally envisaged

when the switch to State Department licensing was mandated by Congress a decade ago. As stated in the CSIS study, “...(C)urrent export control policy has not prevented the rise of foreign space capabilities and in some cases has encouraged it.”

Our industry’s efficiency and competitiveness has a direct bearing on our industry’s ability to retain high-quality, high-paying jobs within the U.S. All sectors of the satellite industry – manufacturers of spacecraft and ground equipment, launch services, and satellite services – require highly-skilled, often highly-trained workers throughout the U.S. Direct U.S. employment related to the satellite industry amounted to a quarter of a million in 2007, including 16,000 in the spacecraft manufacturing sector, nearly 80,000 in the launch services sector and another 50,000 in the satellite services sector, according to the U.S. Bureau of Labor Statistics.

While SIA’s members tend to be prime satellite manufacturers, launch providers and their operator customers versus the component and subcontractor community, we also share the concerns raised by the CSIS study that the ITAR controls on satellites may have had unintended consequences in their more profound effect on smaller companies that supply the prime manufacturers. The U.S market for satellite components may simply not be big enough to sustain such second- and third-tier providers without access to the larger world market. More critically, it seems that rather than controlling sensitive technology, ITAR may have created incentives for off-shore companies to develop home-grown comparable capabilities that undercut domestic suppliers.

The CSIS report also found that overly broad export regulations for space technology have had unintended consequences for national security. This concern is not just an industry or academic observation – it is being echoed by the defense, intelligence and civil space communities. SIA notes in particular the March 17, 2009 testimony by General Kevin P. Chilton, Commander of U.S. Strategic Command before the Strategic Forces Subcommittee of the House Committee on Armed Services. General Chilton testified that “...*I remain concerned that our own civil and commercial space enterprise, which is essential to the military space industrial base, may be unnecessarily constrained*”

*by export control legislation and regulation. Clearly, legitimate national security concerns must continue to underlie the need to restrict the export of certain space-related technologies, equipment, and services. However, appropriate flexibility to permit relevant technology transfers to allies, or decontrol of some technologies in a timely fashion when commercial availability renders their control no longer necessary should be considered to help ensure our space industrial base for the future."*

The satellite industry remains committed to U.S. export policies that safeguard sensitive technology. There are, however, strong national security and economic reasons for Congress and the Administration to re-evaluate both the appropriateness and effectiveness of mandating that virtually all satellite technology exports be controlled under the ITAR. SIA believes that the current one-size-fits all treatment of communications satellites has resulted in overly broad regulation of space technology and no longer reflects today's economic, competitive and national security contexts. This has created unintended and unnecessary competitive disadvantages for U.S. spacecraft and component manufacturers – at a time when the U.S. can least afford it.

SIA encourages Congress to adopt legislation that would return the authority to set export licensing policy for satellites and related items to the Executive Branch - where it resides for all other technologies on the USML. With such clear authority, the Administration could then develop objective and consistent criteria to determine which specific technologically and/or militarily-sensitive satellite technologies should remain controlled under the ITAR and which no longer need to be so controlled. By returning this authority to the Executive Branch, Congress would enable the Administration to update and regularly review the satellite and satellite-related products listing which has remained virtually untouched for ten years. We would also encourage the Congress to revisit the satellite-specific controls – including the current financial thresholds for additional Congressional notification and the activities that require Department of Defense monitors – instituted in the original 1999 NDAA language to bring satellite export control policies in line with treatment of other comparable product areas and today's commercial and national security contexts.

Finally, SIA believes that the imperative to review – and revise - U.S. policy regarding the export of US commercial technology is distinct from concerns regarding the launch of U.S. satellites on Chinese launch vehicles. Rigorous safeguards and additional regulations govern the licensing of any U.S. spacecraft or related technology for launch from China. Since 1999, no U.S. communications satellite or related technologies have been launched on Chinese launch vehicles – nor has permission to do so been sought, to our knowledge. We urge that consideration of this complex and country-specific issue not impede timely Congressional consideration of legislation that supports US exports, and the US jobs dependent upon them, by enabling the Executive Branch to determine the appropriate licensing treatment to be accorded exports of US commercial satellites.

Restoring Executive authority for export control of satellites will tighten our focus more closely on the most militarily sensitive technologies, and reflect more accurately the state of technology and commerce in the satellite sector. It is our belief that such reform will result in a healthier satellite sector, reinforcing the American industrial position in the global marketplace and at home and safeguarding both jobs and critical space technology for the nation.

On behalf of the members of the Satellite Industry Association, thank you again for the opportunity to testify, and I look forward to your questions.