

**Departments of Defense and State**  
***Interim Report to Congress***  
**Section 1248 of the National Defense Authorization Act for Fiscal**  
**Year 2010 (Public Law 111 - 84)**

*RISK ASSESSMENT OF UNITED STATES SPACE EXPORT CONTROL POLICY*

***Introduction***

Section 1248 of Public Law 111-84, the National Defense Authorization Act (NDAA) for Fiscal Year 2010, provides that the Secretary of Defense and the Secretary of State shall carry out an assessment of the national security risks of removing satellites and related components from the United States Munitions List (USML). The assessment is to include a review of space and space-related technologies currently on the USML, and the national security risks of removing certain space and space-related technologies from the USML. The report is to provide recommendations for candidates for removal from the USML based on this national security risk assessment; proposed safeguards and verification necessary to prevent proliferation and diversion of space and space-related technologies, confirm appropriateness of end-uses and end-users, minimize the risk that such space and space-related technologies could be used in foreign missile, space, or other applications that may pose a threat to the security of the United States; and proposed improvements to space export control policy and processes.

This interim report provides an initial assessment of the above issues. A more comprehensive assessment is currently underway, as part of the Administration's Export Control Reform (ECR) initiative. The Administration intends to provide a final report to Congress in the latter half of 2011, based on the findings from work now underway in the ECR initiative. Consequently, this report provides an initial conservative starting point for transferring items from the USML to the Commerce Control List (CCL).

Under the ECR initiative, the President has called for focusing export controls on key technologies and items that pose the greatest national security threat – in other words, for building “higher fences around fewer items.” In support of this goal, U.S. Government (USG) departments and agencies have begun an in-depth analysis of USML Category XV (Spacecraft Systems and Associated Equipment), and the corresponding CCL categories.

The ECR initiative's Category XV effort will provide the in-depth analysis needed to answer the questions posed by Congress, by assessing what a “bright line” between the USML and CCL could look like if the President were given the authority to determine the commodity jurisdiction of items in Category XV, including those controlled on the USML by statute. Such a “bright line” could reduce significantly government and industry uncertainty about whether particular items (i.e., commodities/goods/defense articles; technology/technical data; and software) should be subject to the jurisdiction of the International Traffic in Arms Regulations (ITAR) or the Export Administration Regulations (EAR). No items controlled on the USML by statute will be moved off the USML unless and until the authority to do so is provided.

The ECR initiative's Category XV work will provide an in-depth assessment of the risks associated with export of space-related technologies and items, allowing a more definitive answer to questions posed by Congress. The ECR initiative foresees seeking congressional approval to combine the USML and CCL, including for spacecraft systems and associated equipment, into a single risk-based list of controlled items. This risk-based list will have three tiers, each corresponding to different levels of risk associated with various destinations, end-uses, and end-users.

Pending the results of the ECR initiative's in-depth work, this interim report provides an initial, conservative assessment. It recommends only modest changes at this time – not because of having identified concerns about making further change – but because more in-depth analysis is needed (and underway). Therefore, the recommendations contained herein will likely be expanded based on this more in-depth analysis.

### ***Interim Study Approach***

Organizations from within the Departments of Defense (DoD) and State (DOS) conducted an initial assessment, which is summarized in this interim report. Organizations from within the Department of Commerce (DOC), the Office of the Director of National Intelligence (ODNI), and the National Aeronautics and Space Administration (NASA) were consulted in the assessment.

This interim study assessed satellites, satellite systems, subsystems, and components against two criteria: whether they were specifically designed, developed, configured, adapted, or modified for a civil government/military purpose; or whether they possess significant civil government, military, or intelligence applications, which are important to U.S. national security.

If satellites met one or both of the criteria above, then they were not considered for removal from the USML based on this interim study – but will be assessed in more depth as part of the ECR initiative's Category XV review.

Satellites and their associated systems, subsystems, and components that did not meet the exclusion criteria were further evaluated for the national security risks associated with transfer to the CCL. The study took the following factors into account: whether the capability, if held by an adversary, would substantially diminish U.S. and allied warfighter technology advantage(s); whether the capability entails sensitive or state-of-the-art technical know-how, enabling, or otherwise sensitive space technologies with military or intelligence applicability; and whether the capability enables advanced military or intelligence-gathering capabilities from space. Economic impacts, diplomatic concerns, and foreign export controls were also considered. Export controls of the following commercial satellite-producing countries were reviewed: Canada, France, Germany, Israel, Japan, Russia, and the United Kingdom. Information necessary for the integration and launch of commercial COMSATs by foreign launch service providers was also considered for removal from the USML. However, launch and satellite failure investigations were not considered for removal as part of this interim study.

## ***Interim Study Findings***

Based on the interim analysis, the risk associated with moving commercial COMSATs from the USML is manageable from a national security perspective, with a few narrowly defined exceptions. Most components related to commercial COMSATs could also be transferred to CCL control, without posing an unacceptable security risk.

Therefore, at this time it, with certain exceptions, conditions, and limitations, commercial COMSATs, related components (including those components in common with military and civil government satellites), and information necessary for integration and launch of these satellites by foreign launch service providers, could be removed from the USML without posing an unacceptable security risk. The items would be transferred to the CCL under properly defined licensing and control conditions, such as interagency consensus on how these items are controlled, and the implementation of Special Export Controls (SECs) to mitigate potential risks to U.S. national security for export licenses issued by the DOC. Again, such removal would require providing authority to the President to do so.

Several elements of commercial COMSATs are critical to U.S. national security and should remain on the USML pending completion of the ongoing ECR initiative Category XV review. They include: satellite design methodology and manufacturing know-how, USML Category XV(e) satellite apogee engines, USML Category XV(d) radiation-hardened microelectronics, and satellite thruster propellants controlled under USML Category V. Evaluation of these technologies and items in the ECR initiative review may result in a determination that some classes of items would be eligible for certain license exemptions in an eventual single list construct.

Adequate control of satellite and related items through the EAR requires legislative, procedural, and regulatory changes for these items to be moved to the CCL. Transfer to the CCL ***without the identified risk-mitigating license controls, procedures, and safeguards in place could present a risk to U.S. national security.*** The interim findings on the specific conditions necessary for the transfer of these items from the USML to the CCL are identified in the recommendations section of the report. As noted, however, the interim findings were made without consideration of the comprehensive ECR-based review of the controls on Category XV items nor the changes to licensing policies and processes envisioned in the ECR effort. It is likely, therefore, that these findings will change as a result of the more comprehensive analysis being undertaken through ECR.

The examination of foreign export control policies for space-related technologies revealed that satellites designed for military use are controlled as military items by most commercial satellite-producing nations. However, commercial COMSATs are generally controlled as dual-use items. This is consistent with controls set out in the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technology.

The rapid pace of technological development in the field of space exploitation poses unique challenges and risks to the space industrial base. U.S. national security interests would be best served by vesting the President with the authority to develop flexible and timely responses to these technological changes.

This interim study did not recommend multi-mission satellites (satellites with a primary mission payload plus a different secondary payload), remote sensing satellites, scientific research and experimental (SRE) satellites, and Positioning Navigation and Timing (PNT) satellites (and their unique subsystems and components) for removal from the USML due to the potential significant military or intelligence capabilities that could be included in these classes of satellite. The USML Category XV review under the ECR initiative will undertake a more detailed review of these classes of satellites, and some subsets may be recommended for removal from the USML.

## ***Interim Study Recommendations***

Subject to adjustment based on the outcome of the comprehensive ECR analysis of satellites and their associated systems, subsystems, and components controlled in Category XV of the USML, and the envisioned changes to the U.S. export licensing system, the interim findings are as follows:

1. Consider transferring commercial COMSATs, their systems, subsystems, components, and information necessary for the integration and launch of these satellites by foreign launch service providers to the CCL, **with the following exceptions:**
  - a. Satellite design methodology and manufacturing know-how;
  - b. Satellite or USML part/component failure review, evaluation, and/or assessment;
  - c. Defense articles and defense services related to launch failure investigation; and,
  - d. USML Category V satellite thruster propellants, USML Category XV(d) radiation-hardened microelectronics, and USML Category XV(e) satellite apogee engines;  
*(These items in d. could be exported under the EAR if incorporated into or for use in a commercial COMSAT and when authorized for export on the same license as the satellite);*

**And under all of the following conditions:**

- e. Items transferred to the CCL would be initially designated as “significant items” (SI) under ECCN 9A004, and would require a license, without exception;
- f. Items could be subsequently assigned a lower level of CCL control, with interagency consensus.*** Interagency members should include DOC, DoD, DOS, and others as appropriate. The assignment of appropriate controls could take place either at the exporter’s request or when a license is reviewed.
- g. Items designated as SI would not be eligible for *de minimis* treatment; and
- h. Special export controls (e.g., monitoring and oversight) would need to be authorized and implemented for certain exports to mitigate national security risks. Recommendations by DoD or DOS for special export controls on DOC-licensed exports would have to be accepted and implemented.
- i. The Missile Technology Export Controls (MTEC) group would review applicable EAR export license requests for satellite components to ensure that non-proliferation policies and risks are considered.

***Absent these risk-mitigating conditions (1.e-i, above), these items in (1) should not be considered candidates for transfer to the CCL.***

**Candidates for transfer include:**

- i. Technical data for: marketing, proposal, insurance placement, customer assurance data for contract oversight, satellite-launch vehicle integration, and operator and satellite operations training;
- ii. Bus subsystems and components of commercial COMSATs are exportable as CCL items, including those that are common with other types of satellite missions or non-commercial end uses;
- iii. Hardware such as payload interface or attachment fittings needed to attach commercial COMSATs to a launch vehicle, and to encapsulate the satellite;
- iv. Satellite data on form, fit, mass, electrical, mechanical, environmental constraints, dynamic loads, telemetry, launch pad access, launch parameters, safety, transportation, facility requirements and launch decision to ensure a safe “ride” to orbit;
- v. Customer operator training and satellite operations support (e.g., transfer orbit maneuver, satellite checkout, and normal operation); and,
- vi. Support services for commercial COMSAT on-orbit satellite anomalies for the purpose of returning mission capability. Failure review of EAR-controlled systems, subsystems, or components will require a separate EAR license as appropriate. However, a “satellite failure” requires a USML license because satellite design/manufacturing information would be needed in a subsequent failure review.

2. Re-establish a process to facilitate periodic reviews to determine space items and technologies on the USML that can be transferred to the CCL. The DOC, DoD, DOS, ODNI, and NASA should participate in this process. Others could participate on an ad hoc basis.

3. Retain Positioning Navigation and Timing (PNT) satellites, multi-mission satellites, remote sensing satellites, and scientific research and experimental (SRE) satellites and their unique subsystems and components on the USML. The ECR initiative Category XV review will be performed to ascertain whether certain sub-classes of these satellites would be appropriate for removal from the USML.

4. Provide the President with the authority and flexibility to determine the export licensing jurisdiction of satellites and related components, currently required by law to be on the USML, in order to implement the functional recommendations above. Furthermore, DoD would need the authority and flexibility to apply and implement special export controls by way of monitoring activities on a discretionary basis for satellite and launch-vehicle programs regardless of export jurisdiction. Legislation or regulatory changes may be needed to apply special export controls on EAR licenses. The cost of implementing special export controls should be reimbursed to DoD by the applicants, regardless of export license jurisdiction. This cost recovery is consistent with the current practice of implementing SECs.