8 July 2013

Dennis Krepp
Office of National Security and Technology Transfer Controls
Bureau of Industry and Security
U.S. Department of Commerce, room 2099B
14th Street and Pennsylvania Avenue NW
Washington, DC 20230

Subject: Export Administration Regulations (EAR): Control of Spacecraft Systems and Related Items the President Determines No Longer Warrant Control Under the United States Munitions List (USML)

Reference: Proposed Rule RIN 0694-AF87
Federal Register/Vol. 78, No. 101, May 24, 2013

Dear Mr. Krepp,

Intelsat Corporation hereby submits comments to the Proposed Rule mentioned above. Intelsat welcomes the Export Control Initiative and appreciates the joint effort of U.S. government agencies to create a more positive list with clearer controls. Intelsat notes with particular appreciation various interactive discussions between BIS, DDTC and DTSA officials and industry representatives. These discussions benefited both Intelsat's understanding and its analysis of the proposed rule.

Intelsat wishes to share the following particular comments:

I. Technology in Proposed 9E515

9E515.a "Technology" "required" for the "development," "production," operation, installation, maintenance, repair, overhaul or refurbishing of commodities controlled by ECCN 9A515, "equipment" controlled by 9B515, or "software" controlled by 9D515.

Note: "Build-to-print technology" excluded from paragraph b. is classified under 9E515.a.

b. "Technology" (other than "build-to-print technology") "required" for the "development," "production," design verification, manufacturability, or quality control for items in ECCN 9A515, except items in ECCN 9A515.b.

<u>The Proposed Rule Does not Clearly Distinguish 9E515.a from 9E515.b.</u>

Intelsat is concerned that the above provisions overlap and are not clear on the intended scope of coverage. From discussions with BIS, Intelsat understands both that BIS acknowledges this confusion, and that BIS intends 9E515.a to be a broader category of which 9E515.b is a subset.

Rather than overlapping definitions, BIS should ensure that these paragraphs are *mutually exclusive sets*. BIS can do this by inserting the phrase: "other than "technology"[1] controlled by paragraphs .b of this entry" into paragraph 9E515.a. BIS included similar text in its rules for aircraft,[2] which appear to more effectively distinguish between categories. Intelsat recommends the following methods for clarifying such distinctions.

Distinction based on Sensitivity

9E515.a and 9E515.b are far too general and do not account for varying sensitivities of technologies for parts and components. The aircraft rule represents a more positive list approach to controlling parts and technologies based on their national security sensitivity. For example, 9E619 divides technologies for items that are STA-eligible, not STA-eligible, and merely AT-controlled.

BIS should apply the approach BIS took with the aircraft rules to 9E515: 9E515 should distinguish between technologies of low, medium, or high sensitivity:

- Low-sensitivity technology should not require licensing or license exceptions (e.g. new 9E515.y);
- Medium-sensitivity production/development technology should be eligible for license exceptions for the 36 STA countries and licensed only for other countries (revised 9E515.a); and
- High-sensitivity production/development technology should generally require licensing (revised 9E515.b). The more sensitive technologies are ones BIS itself suggested commenters more specifically list out, as shown in 9E619.b and 9E616.c.

Intelsat's engineers have reviewed satellite parts at the unit level and identified certain examples that fall into the above categories. A synopsis of their review is provided in Exhibit A.

New 9E515.y for Low-Sensitivity Technology

The several low-sensitivity parts identified tend to be widely available outside the United States. Neither they, nor their technologies, should require control other than to AT-controlled countries. Examples include valves (fill & drain, check,

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[1] See below for comment on the use of the defined term "technology" which has a specific meaning including the elements of "development", "production", and "use." If BIS does not intend for the term "technology" to be so limited, the quotes should be removed.

[2] See BIS, Final Rule on Aircraft, 78 F.R. 22768, 22769 (Apr. 16, 2013).

latch), attenuators, and RF switches. Intelsat proposes that technology for these less sensitive items should be classified as 9E515.y.

Revised 9E515.a for Medium-Sensitivity Technology

The medium-sensitivity parts constitute the largest group. These parts tend to be widely available within the NATO countries and Japan, which suggests that these parts and their associated production and development technologies should be STA-eligible. Moreover, some of these items have the same sensitivity as items in other space-qualified categories that are STA-eligible for production and development data. For example, 3E001 production technology for 3A001-controlled solar arrays is STA-eligible. This suggests that BIS revise its approach to production and development technology related to these items. Technology for these items should be classified under 9E515.a.

Revised 9E515.b for High-Sensitivity Technology

Finally, a small group of parts are high-sensitivity. These parts are generally not available outside the United States, and may deserve a greater degree of control. These include, for example, certain beam forming networks, laser cross-links, and active phased arrays. Non-build-to-print production and development technologies for these units should be specifically enumerated under 9E515.b.

There are several reasons for adopting the aircraft approach for 9E515. First, the approach provides a more positive list that would specify technologies and their respective control. Second, inserting a 9E515.y paragraph would add consistency with the 1248 Report, which contained AT-controlled 9E515.y.[3] Moreover, 9E515 would be made more consistent with other rules, such as new 9E619, which was adopted at a later and more advanced stage of export control reform than the 1248 Report. Third, BIS recognized the dual-use nature of 500-series items which justifies a broader STA-eligibility for 9E515 than the 600-series items: "[t]he majority of the items in the "500 series" are commercial items, and while many of the "parts" and "components" have military or intelligence applications, they are dual-use items that have commercial applications."[4] Fourth, a positive list would be consistent with Export Control Reform goals of "higher walls" around more important items.[5] Finally, an approach that bounds control based on more sensitive items would facilitate trade, industrial competitiveness and cooperation with U.S. allies: fundamental to the national security interests of the United States.

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[3] See Rep. on Section 1248 of the National Defense Authorization Act for FY 2010, App. 2, 2-5, 2-6 ("1248 Report"), available at http://www.defense.gov/home/features/2011/0111_nsss/docs/1248_Report_Space_Export_Control.pdf.

[4] See BIS, Proposed Rule on Spacecraft, 78 F.R. 31431, 31435 (May 24, 2013).

[5] See White House Press Release, "Fact Sheet on the President's Export Control Reform Initiative," Apr. 20, 2010, at http://www.whitehouse.gov/the-press-office/fact-sheet-presidents-export-control-reform-initiative ("The goal of the reform effort is "to build high walls around a smaller yard" by focusing our enforcement efforts on our "crown jewels.""").

Suggestion of Review Board with DOD Involvement (new EAR 748.3)

Based on discussions with DTSA, Intelsat recognizes that specifying satellite-related items and technologies may be a substantial task. One potential means to address classifications related to 9E515.a, 9E515.b and 9E515.y (as well as other 9x515.y's) would be to establish a review board.

This approach would be consistent with the BIS final rule for aircraft, which provided for a procedure for classification requests to confirm that an item is not specially designed.[6] The review process requires a consensus determination from the Department of State, Department of Commerce, and Department of Defense.

A similar review mechanism should be available here. First, it would allow for case-by-case determinations based on specific criteria rather than overly broad categorizations reflected by the current 9E515.a and 9E515.b. Second the review process would represent important U.S. equities and expertise that could provide authoritative decisions on national security sensitivities. Third, the scope of "space-qualified" and "required" are similar to "specially designed,"[7] indicating that the review process already finalized would be well-placed to review 9x515 items. Finally, such a process could offer consent-based publication of results, such as DDTC Commodity Jurisdiction ("CJ") determinations, which would facilitate industry self-classification and add transparency to the process.

Distinction Based on Elements of "Use" Technology

Intelsat recommends that 'design verification', 'manufacturability', and 'quality control' should be moved to 9E515.a, and *not* be subject to licensing in the same way as production and development technology.

Although these terms were included in the 1248 Report, the report gave no express *reasoning* for doing so.[8] Discussions with BIS indicate that BIS intended these to capture post-production technology that is "production-like." But "production" and "development" should themselves be sufficient to achieve control objectives, as with 600 series items. For example, the aircraft rules (Proposed 9E610 and 9E619) did *not* carve out design verification, manufacturability and quality control. It makes little sense for 500-series items to be treated any differently. Moreover, including these terms in 9E515.b creates tension with the exclusion of "build-to-print", which contains, for example, "[a]*cceptance, test, or inspection criteria*" in order to verify acceptability. "Design

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[6] See BIS, Final Rule on Aircraft, 78 F.R. 22768, 22724.

[7] See BIS, Proposed Rule on Spacecraft, 78 F.R. 31431, 31440 (""space-qualified" … "Note: The terms 'designed' and 'manufactured' in this definition are synonymous with "specially designed." Thus, for example, an item that is "specially designed" for a spacecraft is deemed to be 'designed' or 'manufactured' for operation at altitudes greater than 100 km and an item that is not "specially designed" for a spacecraft is not deemed to have been so 'designed' or 'manufactured.'").

[8] See Rep. on Section 1248, App. 2, 2-5.

verification" and "quality control" may be part of these criteria. 9E515.b would thus conflict with 9E515.a, which covers "build-to-print" technology.

Maintaining the proposed definition would also be inconsistent with the Export Control Reform goal of allowing US-based companies to coordinate with companies or governments of our NATO-ally countries. For example, as proposed, 9E515.b would preclude the ability to use STA for an on-site representative of a customer purchasing a satellite to verify that the manufacturer is meeting contract requirements for design or quality control for the same. 'Manufacturability' may also cover information used in *marketing* a satellite, and thus delay and deter transactions. It could also impose a license burden for certain basic levels of data required for insurance coverage, thus impeding the ability to buy and sell satellite insurance.

Also, as discussed in Part IV, below, Intelsat proposes that BIS replace 9E515.a's disjunctive list of elements of "use," with "use" itself. But should BIS intend to keep the disjunctive elements of "use" in 9E515.a, Intelsat recommends removing '*operations*' from the paragraph. First, operations data is currently exempt under 125.4(b)(5) under the ITAR. This exemption ensures that if a U.S. company acquires a license to export a product on the USML, it does not also need to apply for a second license to provide "operation" data. The EAR should be made consistent with this policy. Second, operations data itself is *not* sensitive, and even more strongly should be excluded for non-munitions. For example, 'operations' data would include baseband unit parameters, i.e., the ground parameters necessary to configure the baseband unit to interface to each specific spacecraft.

<u>Guidance Clarifying Information that is NOT Controlled</u>

Additionally, BIS should also issue notes or guidance clarifying that the following other types of information are *not* controlled: satellite telemetry data; payload performance data, group delay, and in-orbit testing (IOT) results data; and ranging data. The opposite conclusion would run counter to generally accepted interpretations, and dramatically burden manufacturers, operators and insurance providers, who regularly obtain and transmit this information.

First, DOD/DDTC has stated that satellite telemetry is not ITAR-controlled; this telemetry is the wireless transmission and reception of measured quantities for the purpose of remotely monitoring environmental conditions or equipment state. The spacecraft telemetry is exactly that, remote measurements of the satellite environment and states, such as temperatures, voltages, currents, on/off status etc. These are the same parameters that one would use to monitor in any industrial production facility, power plant, or data center. They should not be controlled in either instance.

Second, payload performance data, group delay, and IOT results information—provided that it does not provide any insight to the design, development, test, *or operation* of a satellite—should not be considered EAR-controlled. This data includes the following:

- *EIRP (including antenna gain)*
- *Uplink Gain-to-Thermal Noise (G/T) Ratio*
- *Saturation Flux Density*
- *Transponder Gain Variation*
- *Cross Polarization Isolation*
- *Transponder Phase Response (including Phase Shift)*
- *Frequency Responses (IMUX and OMUX data)*
- *Group Delay (IMUX and OMUX data)*
- *Transponder Amplitude Linearity*
- *Noise Power Ratio*
- *Transponder Frequency Translation Stability*
- *Frequency Plan*

This information would not have risen to "technical data" under the ITAR, and should not be controlled under the EAR.

Third, ranging data (to include Two Line Element (TLE) data) is derived from measurements taken off a satellite post-launch to determine the spacecraft's' exact orbital location at any given time, whether in transfer-orbit phase or on-orbit phase. Ranging data does not provide any insight to the design, development, test, or operation of the satellite. Furthermore, this data is provided to organizations like the North American Aerospace Defense Command (NORAD) and the International Telecommunications Union (ITU) who would then place it on the public domain. Therefore, ranging data has generally not been considered ITAR-controlled. It similarly should not be controlled here.

Intelsat's Proposed Revisions to 9E515

In addition to Intelsat's suggested notes, above, Intelsat proposes revising 9E515, as follows:

> *a. "Technology" (other than "technology" controlled by paragraph .b of this entry) "required" for the "development," "production," or "use" ~~operation, installation, maintenance, repair, overhaul, or refurbishment~~ of items controlled by ECCN 9A515 (except 9A515.y), ECCN 9B515 (except 9B515.y), or ECCN 9D515 (except 9D515.y).*
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> *b. "Technology" (other than "build-to-print technology") "required" for the "development" or "production" ~~design verification, manufacturability, or quality control for items in ECCN 9A515, except items in ECCN 9A515.b~~ of any of the following:*
> *b.1 ….*
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> *y. Specific "technology" "required" for the "development," "production," or "use" of commodities controlled by 9A515.y or 9B515.y, or "software" controlled by ECCN 9D515.y.*

II. Proposed 9A515: BIS Needs to Provide More Specificity for Parts/Components

9A515.x *"Parts," "components," "accessories" and "attachments" that are "space qualified" and not enumerated or controlled in the USML, elsewhere within ECCN 9A515, or an ECCN containing "space-qualified" as a control criterion, i.e., 3A001.b.1, 3A001.e.4, 3A002.a.3, 3A002.g.1, 3A991.o, 3A992.b.3, 6A002.a.1, 6A002.b.2, 6A002.d.1, 6A002.e,*[9] *6A004.c and .d, 6A008.j.1, or 6A998.b.*

Creation of 9A515.y

Per the discussion in Part I above, BIS should include 9A515.y that has only AT-control for satellite-related items of lesser sensitivity. The reasons include many of the same reasons for establishing a 9E515.y, including: (1) export control reform's goals of "higher walls" only for more sensitive items; (2) consistency with the 1248 Report, as well as other rules, such as aircraft; (3) lesser controls for 500 series dual-use items; and (4) limiting control for these items facilitates trade and industrial competitiveness. Further, 9A515.y could benefit from the interagency review mechanism discussed above.

Include Notes Specifying Jurisdiction of COMSEC Encryption and Hosted Payloads

BIS should include a note clarifying that commercial communications satellites containing COMSEC Encryption and military or non-military-related hosted payloads remain subject to the EAR.

Prior to the transfer of satellites to the ITAR, the EAR clearly expressed that "commercial communications satellites are subject to Commerce licensing jurisdiction even if they include the individual munitions list systems, components, or parts identified on the United States Munitions List (USML)."[10] For COMSEC, the ITAR expressly excluded Telemetry Tracking & Control encryption from Category XIII when embedded in a commercial satellite, but this exclusion is no longer present under the current and proposed rules for Category XIII. Furthermore, Intelsat understands through conversations with DTSA that COMSEC incorporated into commercial satellites was not intended to make a satellite ITAR-controlled. Finally, COMSEC encryption is a requirement for a commercial satellite to carry DOD traffic, so without a see-through rule disclaimer, this could hamper USG use of commercial satellites.

For hosted payloads, commercial satellites may have multiple payloads with solely commercial functionality on the same satellite with a military payload associated with Proposed Category XV(e)(17).[11] Companies like Intelsat could be negatively impacted. Subjecting the entire satellite to ITAR-control increases costs and prevents industry from providing independent services to *both commercial and USG agencies.* This would limit the available satellites for USG/DOD use and

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[9] Note, there is no 6A002.e; it was moved to 6A002.a.1.d. See 77 F.R. 30353, BIS, Wassenaar Arrangement 2011 Plenary Agreements Implementation (July 2, 2012), http://www.gpo.gov/fdsys/pkg/FR-2012-07-02/html/2012-15079.htm. This ECCN should be removed from paragraph.

[10] 15 C.F.R. Pt. 774, Supp. No. 1, ECCN 9x005 (1998).

[11] DDTC Proposed Rule on Spacecraft, 78 F.R. 31444, 31451 (May 24, 2013).

hinder DOD's pursuit of more cost effective and increased access to space.[12] Furthermore, diversion risk could still be addressed by licensing requirements for the DOD payload with military functionality.

III. Proposed Revisions to 9B515.a

> 9B515.a *Test, inspection, and production "equipment" "specially designed" for the "production" or "development" of commodities enumerated in ECCN 9A515 or USML Category XV.*

Per the discussion related to COMSEC in **Part II**, above, Intelsat requests clarification on the classification of encryption simulators used to test COMSEC encryptors when installed on a foreign manufactured satellite.

IV. Definitions

Current Definition of "Technology"

> "Technology" *"Specific information necessary for the "development", "production", or "use" of a product."*[13]

Intelsat notes that the definition of "technology" does not appear to be fully compatible with how it is used in 9E515 – as well as proposed and final 600-series technology-related paragraphs. "Use" is *"operation, installation (including on-site installation), maintenance (checking), repair, overhaul* ***and*** *refurbishing."*[14] "Use" is *conjunctive* – that is, its elements must *all* be present to constitute "use." But 9E515.a and b include *disjunctive* contents or elements of "use." For example, mere operations information not necessary for repair would neither be "use," nor "production," nor "development." Thus, as a threshold matter, it would not be "technology" in the first place. Yet BIS appears to intend to control the individual elements of "use" in 9E515.a and all the new 600-series technology ECCNs.

For 9E515, Intelsat recommends that BIS should replace the disjunctive elements of "use" with "use" itself. This would provide clarity because conjunctive "use" constitutes "technology," while the mere elements of "use" do not. Moreover, "use" is already defined and traditionally understood: BIS would not have to create a new definition. Finally, replacing the disjunctive elements with "use" would be consistent with the dual-use nature of 500-series items, "the majority of [which] are commercial items [or] dual-use items that have commercial applications."[15] Other dual-use technology ECCNs under the EAR *do not* include

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[12] See Air Force, Hosted Payload Solutions, Industry Day Presentation (Feb 19, 2013) [Excerpt Provided as **Exhibit B**] ("HoPS Top-Level Strategy: Pursue a commercially hosted space capability in order to secure affordable and resilient access to space; Maximize hosting opportunities to provide choices and competitive pricing; Leverage robust commercial base and practices").

[13] 15 C.F.R. § 772.1 (2013).

[14] 15 C.F.R. § 772.1 (2013) (emphasis added).

[15] See BIS Proposed Rule on Spacecraft, 78 F.R. 31431, 31435 (May 24, 2013).

the disjunctive elements of "use." Applying disjunctive "use" is more appropriate for military 600-series ECCNs, in that it is more consistent with the ITAR definition of "technical data."

BIS's other options are not as ideal. For example, if BIS merely removes the quotations from "technology" as listed in 9E515, it may raise questions as to what the unquoted technology would mean, and BIS may then have to create another definition to clarify. Alternatively, BIS could maintain the reference to *disjunctive* "use" and revise the definition specifically for items transferred from the USML. For example BIS could add a note to the definition of "technology" or refer instead to a definition of "space-qualified technology." This option is also not ideal, because controlling disjunctive "use" is inconsistent with 500-series items or other dual-use items on the EAR.

In addition, BIS should also include a note that specifies what is *not* included in "technology." For example, in the ITAR, "technical data" contains such a note.[16] Something similar would provide more clarification on the level of information BIS does not intend to control. This is particularly important for BIS's proposed technology paragraphs for 500- and 600-series, paragraphs which appear to more closely approximate DDTC's definition of "technical data."

<u>Aircraft Rule's Final Definition of "Build-to-Print Technology"</u>

> *Build-to-Print Technology. (1) This is ''production'' ''technology'' that is sufficient for an inherently capable end user to produce or repair a commodity from engineering drawings without:*
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> > *(i) Revealing ''development'' ''technology,'' such as design methodology, engineering analysis, detailed process or manufacturing know-how;*
> > *(ii) Revealing the production engineering or process improvement aspect of the ''technology;'' or*
> > *(iii) Requiring assistance from the provider of the technology to produce or repair the commodity.*
>
> *(2) Acceptance, test, or inspection criteria pertaining to the commodity at issue is included within the scope of ''build-to-print technology'' only if it is the minimum necessary to verify that the commodity is acceptable.*[17]

If BIS does not revise 9E515.b, BIS should clarify its definition of "build-to-print" technology and some of the elements in Proposed 9E515.b, with which it appears to conflict. For example, "acceptance, test or inspection criteria," even if it is the "minimum necessary to verify that the commodity is acceptable" may conflict with "quality control" and "design verification." A contract may specifically

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[16] 22 C.F.R. §120.10(a)(5) (2013) ("[technical data] does not include information concerning general scientific, mathematical or engineering principles commonly taught in schools, colleges and universities or information in the public domain …. It also does not include basic marketing information on function or purpose or general system descriptions of defense articles.").

[17] BIS, Final Rule on Aircraft, 78 F.R. 22659, 22727 (Final § 772.1).

require design verification *in order* to verify that the commodity is acceptable. These terms should be defined and more clearly distinguished from build-to-print.

Current and Proposed Definition of "Space-Qualified"

Intelsat notes BIS already expanded the definition of "space-qualified" from how Section 772.1 read earlier this year. Prior to June 20, 2013, the definition had been the following:

> *Space-Qualified. "Products designed, manufactured* **and** *tested to meet the special electrical, mechanical or environmental requirements for use in the launch and deployment of satellites or high-altitude flight systems operating at altitudes of 100 km or higher.*[18]

As of June 20, 2013, BIS altered the definition to the following:

> *Designed, manufactured,* **or** *qualified through successful testing, for operation at altitudes greater than 100 km above the surface of the Earth. Note: A determination that a specific item is "space qualified" by virtue of testing does not mean that other items in the same production run or model series are "space qualified" if not individually tested*[19]

BIS mentioned the new definition in its May 26, 2013 Proposed Rule guidance, noting the Wassenaar's adoption, the 1248 Report and U.S. Government comments on "specially designed."[20]

This definition appears to be an expansion. Prior to June 2013, "space-qualified" was *conjunctive* and limited to items *tested to meet* certain requirements. But as just revised, the definition is *disjunctive*, such that an item designed but *not successfully tested* would be covered. BIS's Proposed Note, which makes "designed" and "manufactured" equivalent to "specially designed," does provide some limitations.[21] However, the note does not go far enough.

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[18] 15 C.F.R. 772.1 (Jan. 2013) (emphasis added).

[19] BIS, Wassenaar Arrangement 2012 Plenary Agreements Implementation, 78 F.R. 37372, 37384 (emphasis added).

[20] See BIS, Proposed Rule on Spacecraft, 78 F.R. 31431, 31434 ("The Wassenaar Arrangement adopted the revised definition after the Departments of State and Defense submitted to Congress the 1248 Report, describing the proposed controls on "space qualified" items not controlled elsewhere. In addition, the revised definition was adopted after the U.S. Government had received and considered public comments on its proposed definition of "specially designed," which would be the control parameter in its other ".x" catch-all controls").

[21] BIS, Proposed Rule on Spacecraft, 78 F.R. 31431, 31440 ("Note: The terms 'designed' and 'manufactured' in this definition are synonymous with "specially designed." Thus, for example, an item that is "specially designed" for a spacecraft is deemed to be 'designed' or 'manufactured' for operation at altitudes greater than 100 km and an item that is not "specially designed" for a spacecraft is not deemed to have been so 'designed' or 'manufactured.'").

For example, a part need only be '*designed'* – and not successfully tested – to be a "space-qualified" part controlled by 9A515.x.[22] Both the proposed note to "space-qualified" and the definition of "specially designed" imply that almost any non-fastener part for use in commercial satellites would be considered "designed," and thus "space-qualified."[23] This may be so even if the part were not finished or successfully tested. This may run the risk of intent-based control rather than functionality based control. Moreover, this broadens the reach of *other* ECCNs already associated with space-related items, for example, by not requiring successful testing.

So that testing does not get written out of the requirements for "space-qualified" Intelsat recommends that an aspect of testing be *included* in definition of "specially designed," as it relates to parts.

Current Definition of "Required"

> *Required. Peculiarly responsible for achieving or exceeding the controlled performance levels." Such "required" "technology" or "software" may be shared by different products. For example, assume product "X" is controlled if it operates at or above 400 MHz and is not controlled if it operates below 400 MHz. If production technologies "A", "B", and "C" allow production at no more than 399 MHz, then technologies "A", "B", and "C" are not "required" to produce the controlled product "X". If technologies "A", "B", "C", "D", and "E" are used together, a manufacturer can produce product "X" that operates at or above 400 MHz. In this example, technologies "D" and "E" are "required" to make the controlled product and are themselves controlled under the General Technology Note. (see the General Technology Note.).*[24]

The definition of "required" hinges on the technology "[p]eculiarly responsible for achieving or exceeding the controlled performance levels;" however, the lack of clear objective criteria such as performance parameters for parts and components makes this definition either meaningless or impossible to apply.

For example, in conjunction with the new definition of "space-qualified," a part need only be '*designed'* – and not successfully tested – to be a "space-qualified" part controlled by 9A515.x.[25] Both the Proposed note to "space-qualified" and the definition of "specially designed" imply that almost any non-fastener part for use in commercial satellites would be considered "designed," and thus be "space-qualified." But the "controlled performance" level is unclear. Is it merely "space-qualified?" If so, then *any* production technology "responsible for achieving" 'design' for use in space would be sufficient to be "required." Such a parameter is either without meaning or not specific enough to apply.

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[22] See BIS, Wassenaar Arrangement 2012 Plenary Agreements Implementation, 78 F.R. 37372, 37384 (June 20, 2013).

[23] See BIS, Final Aircraft Rule, 78 F.R. 22659, 22727 (Final § 772.1).

[24] See 15 C.F.R. § 772.1 (2013).

[25] See BIS, Wassenaar Arrangement 2012 Plenary Agreements Implementation, 78 F.R. 37372, 37384 (June 20, 2013).

Intelsat requests that BIS clarify the meaning of this performance parameter, or otherwise resolve the ambiguity of the "space-qualified" and "required" for parts.

Current Definitions of "Reexport" & "Transfer"

> *Reexport. "Reexport" means an actual shipment or transmission of items subject to the EAR from one foreign country to another foreign country. For purposes of the EAR, the export or reexport of items subject to the EAR that will transit through a country or countries, or be transshipped in a country or countries to a new country, or are intended for reexport to the new country, are deemed to be exports to the new country. (See § 734.2(b)of the EAR.) In addition, for purposes of satellites controlled by the Department of Commerce, the term "reexport" also includes the transfer of registration of a satellite or operational control over a satellite from a party resident in one country to a party resident in another country.*[26]

> *Transfer. A shipment, transmission, or release to any person of items subject to the EAR either within the United States or outside the United States. In-country transfer/transfer (in-country). The shipment, transmission, or release of items subject to the EAR from one person to another person that occurs outside the United States within a single foreign country.*[27]

Intelsat notes that, since commercial satellites will be returned to the CCL, more clarification is needed surrounding the transfer requirements of an on-orbit satellite registration. For example, will authorizations of transfers of ownership of a *company* be based on a company's place of incorporation or ownership percentage? These definitions also do not provide clarification on one's ability to transfer registrations in-country. Intelsat requests that BIS address these issues in either a note or guidance.

V. Program Licensing Options

Intelsat requests clarification that BIS export licenses can streamline licensing where programs (like insurance) include multiple parties, in multiple countries with multiple third-country nationals and dual nationals. For example, can licenses cover multiple programs for different satellites with a similar group of end users? Both Assistant Secretary Wolf and Intelsat's separate discussion with SNAP-R officials have indicated that this is possible, but BIS should ensure it is clarified by regulations, guidance, or both.

This is particularly important where Proposed 9E515.b, as currently written, covers production- and development-related technology for *every* 9A515.x part and component, thus making licensing a necessity.

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[26] 15 C.F.R. § 772.1 (2013).

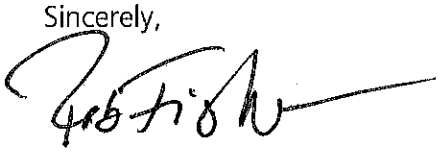
[27] 15 C.F.R. § 772.1 (2013).

VI. Level of Collaboration with Foreign Partners

Since a goal of Export Control Reform is in part to allow greater collaboration with U.S. allies, Intelsat requests that BIS permit the U.S. and foreign partners to discuss satellite engineering and design methodology, as well as perform collaborative anomaly resolution, under licenses. Under the ITAR, this has historically been restricted *even from licenses.* Now that such methodology would be discussed for 500-series items, which BIS recognizes should be treated differently from 600-series technology, restrictions on this practice should generally cease. Moreover, such restrictions may otherwise make licenses meaningless and waste the time spent by both industry and BIS in the authorization process. Intelsat requests that BIS clarify this policy.

Thank you for providing the opportunity to share Intelsat's comments. If you have any questions or need information, please contact the undersigned at 202-944-6901 or via email at robert.fisher@intelsat.com or Ruth Bedore, Principal, Licensing and Determinations at 202-944-7629 or via email at ruth.bedore@intelsat.com.

Sincerely,



Robert Fisher
Associate General Counsel

Exhibits

Exhibit A

Exhibit A: Commercial Satellite Part Availability and Sensitivity (by Unit)[1]

Bus/ Repeater/ TC&R?	Generic Unit Name	Non-US source Country	Alternate Non-US Availability?	High-Sensitivity	Medium-Sensitivity	Low-Sensitivity
Repeater	Antenna feed	Canada			x	
Repeater	Antenna Reflector, shaped		Europe/Canada		x	
Repeater	Antenna subreflector, shaped		Europe/Canada		x	
Repeater	Attenuator		Europe			x
Bus	Attitude Control Electronics		Europe		x	
Bus	Battery Control Electronics		Europe		x	
Bus	Battery Switch		Europe		x	
Repeater	Beam Forming Network (including ground-based beam formers)			x		
Repeater	Beacon transmitter	Norway			x	
Bus	Bipropellant thruster		Europe		x	
Repeater	Butler Matrix		Europe			x
Repeater	Channelizer		Europe	x		
Bus	Check valve		Europe			x
Repeater	Circulator/ isolator		Europe			x
TC&R	Command Receiver	Japan/ Europe			x	
Bus	Configuration Control Electronics		Europe		x	
Bus	DC/DC converter		Europe		x	
Bus	Digital Control Electronics		Europe		x	
Bus	Digital Data Recorder		Europe		x	
TC&R	Diplexer		Europe			x
TC&R	Directional coupler		Europe			x
Repeater	Downconverter		Europe		x	
Bus	Electrostatic Discharge Protection Unit		Europe		x	
Bus	Fill & Drain Valve		Europe			x
Bus	Fuse unit		Europe			x
Bus	Hardline Command & Telemetry Unit		Europe		x	
Bus	Heater Control Unit		Europe		x	
Repeater	High Power Filter (Temp compensated)			x		
Bus	Holddown assembly		Europe			x
TC&R	Hybrid		Europe		x	
Bus	Infrared Earth Sensor	Japan			x	
Repeater	Input filter		Europe		x	
Repeater	Input multiplexer		Europe		x	
Repeater	IP Router (Space-qualified)			x		
Repeater	Isolator		Europe			x
Repeater	Laser cross-link			x		
Bus	Latch Valve		Europe			x
Repeater	Limiting Channel Amplifier				x	
Repeater	Linearized Channel Amplifier		Europe		x	
Bus	Lithium-ion battery	Japan			x	
Repeater	Low noise amplifier		Europe		x	
Bus	Main satellite thruster		Europe		x	
Bus	Momentum Wheel		Europe		x	
Repeater	Onboard Processor (RF)			x		
Repeater	Ortho Mode Tranducer		Canada		x	
Repeater	Oscillator		Europe		x	

[1] This chart does not intend to include items in 9A515.x that are expressly excluded: 3A001.b.1, 3A001.e.4, 3A002.a.3, 3A002.g.1, 3A991.o, 3A992.b.3, 6A002.a.1, 6A002.b.2, 6A002.d.1, 6A002.e, 6A004.c and .d, 6A008.j.1, or 6A998.b.

Exhibit A: Commercial Satellite Part Availability and Sensitivity (by Unit)[1]

Bus/ Repeater/ TC&R?	Generic Unit Name	Non-US source Country	Alternate Non-US Availability?	High-Sensitivity	Medium-Sensitivity	Low-Sensitivity
Repeater	Output filter		Canada		x	
Repeater	Output multiplexer	Canada			x	
Repeater	Phased Array (Active)			x		
Bus	Positioning Mechanism		Europe		x	
Bus	Power Control Unit		Europe		x	
Bus	Power Distribution Unit		Europe		x	
TC&R	Preselect filter		Europe		x	
Bus	Pressurant tank		Europe		x	
Bus	Pressure regulator		Europe			x
Bus	Pressure transducer		Europe		x	
Bus	Propellant filter		Europe			x
Bus	Propellant guage		Europe		x	
Bus	Propellant tank		Europe		x	
Bus	Pyrotechnic valve		Europe		x	
Bus	Reaction wheel		Europe		x	
Repeater	Reflector (Unfurlable)			x		
Repeater	RF antenna tracking system (monopulse)				x	
Repeater	RF C-switch	Europe				x
Repeater	RF load		Europe			x
Repeater	RF Power Divider		Europe		x	
Repeater	RF receiver		Europe		x	
Repeater	RF T-switch		Europe			x
Bus	Ring Laser Gyro		Europe		x	
Repeater	R-switch	Canada				x
TC&R	Secure Command Decrypter			x		
Bus	Serial Interface Electronics		Europe		x	
Bus	Solar Array	Japan			x	
Bus	Solar Array Drive		Europe		x	
Repeater	Solid State Power Amplifier	Japan			x	
Bus	Space Inertial Reference Unit				x	
Bus	Star Tracker		Europe		x	
Bus	Structural panel w embedded heat pipes	Japan			x	
Bus	Sun sensor		Europe		x	
TC&R	TC&R antenna		Europe		x	
TC&R	Telemetry transmitter	Japan/ Europe			x	
Repeater	Test coupler		Europe			x
Repeater	Traveling Wave Tube Amplifier	Europe			x	
Repeater	Waveguide circulator	Canada				x
Repeater	Waveguide termination		Europe			x
Bus	Wheel Drive Electronics		Europe		x	
Bus	Xenon flow controller		Europe		x	
Bus	Xenon ion thruster	Russia			x	
Bus	Xenon Ion Propulsion System				x	

[1] This chart does not intend to include items in 9A515.x that are expressly excluded: 3A001.b.1, 3A001.e.4, 3A002.a.3, 3A002.g.1, 3A991.o, 3A992.b.3, 6A002.a.1, 6A002.b.2, 6A002.d.1, 6A002.e, 6A004.c and .d, 6A008.j.1, or 6A998.b.

Exhibit B

UNCLASSIFIED

Hosted Payload Solutions (HoPS)

Industry Day

CHIEF, HOSTED PAYLOAD OFFICE: Lt Col Mark Brykowytch

PROJECT MANAGER: Capt Eric Rabarijaona

CONTRACTING OFFICER: Mr. Timothy Huling

HoPS IDIQ Strategy

- **HoPS Top-Level Strategy**
  - Pursue a commercially hosted space capability in order to secure affordable and resilient access to space
  - Maximize hosting opportunities to provide choices and competitive pricing
  - Leverage robust commercial base and practices

- **Flexibility required to meet diverse mission requirements (mission areas, orbits, purpose)**
  - Ability to perform up front systems engineering studies to enhance mission success, minimizing execution/schedule risk
  - Centralized contract vehicle ensures HPO applies past lessons learned
  - Implement streamlined & reproducible acquisition to secure fleeting opportunities

HoPS Mission Candidates

Organization	Mission	Orbit/ Configuration	Approximate Launch
NASA	TEMPO	GEO Medium	2018
MC	Experiment	GEO Medium	2017
IS	IR Payload	GEO Medium	2018
SD	Scientific	LEO Modular	TBD
WM	Space Weather	TBD	TBD
MC	Comm	GEO Medium	TBD

UNCLASSIFIED

HoPS Mission Candidates

Military-Related Payloads:
- MC is MILSATCOM (Military Satellite Communications Systems Directorate).
- IS Infrared Payload is a mission for the Air Force.
- SD is the Air Force Space Development and Test Directorate.

These would be covered by Proposed Cat. XV(e)(17).

Organization	Mission	Orbit/ Configuration	Approximate Launch
NASA	TEMPO	GEO Medium	2018
MC	Experiment	GEO Medium	2017
IS	IR Payload	GEO Medium	2018
SD	Scientific	LEO Modular	TBD
WM	Space Weather	TBD	TBD
MC	Comm	GEO Medium	TBD

Non-Military Payloads:
- NASA's TEMPO will measure air pollution.
- Space Weather is associated with NOAA.

These may be covered by Proposed Cat. XV(e)(18).