July 3, 2013
Via E-Mail (publiccomments@bis.doc.gov)
Regulatory Policy Division,
Bureau of Industry and Security
U.S. Department of Commerce, Room 2099B
14th Street and Pennsylvania Avenue, NW
Washington, DC 20230

Re: 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)

RIN: 0694-AF87

The Commercial Spaceflight Federation (CSF) is the industry association of leading businesses and organizations working to make commercial spaceflight a reality. Our mission is to promote the development of commercial spaceflight, pursue ever higher levels of safety, and share best practices and expertise throughout the industry. On behalf of the CSF, I respectfully submit these comments concerning the proposed rule describing the method in which items removed from the United States Munitions List (USML) will be controlled on the Commerce Control List (CCL).

The CSF commends the Administration's Export Control Reform Initiative for taking steps towards modernizing the USML and placing those items deemed 'dual-use' on the CCL where they can be regulated more appropriately. Commercial communications satellites will benefit from being regulated under the Export Administration Regulations (EAR) due to their broad global applications which will keep the U.S. competitive overseas, and continue to grow our nation's industrial base. I am also pleased to see that training for spaceflight participants in preparation for flight has been kept as an EAR99 item. As the commercial spaceflight industry begins flights, training and preparation for the participants is a crucial step in the process and must be done in a timely fashion.

However, while spaceflight participant training is regulated under the EAR, the vehicles in which they are flying are not. Similar to the dual-use nature of communication satellites and related technology that are being transferred to the CCL, these vehicles have significant commercial applications and economic potential. Commercial suborbital vehicles will be flying many participants and payloads in the coming years, and as the market for these services grows, this industry will bring high-tech jobs to the U.S. and will help preserve our nation's robust space program. The market potential for these vehicles has been independently estimated to be about $1.6 billion in the next 10 years[1], and could well exceed that without costly ITAR restrictions. These restrictions could cost U.S. companies several hundred million dollars in near-to-mid-term revenue, along with the direct economic growth and indirect national security benefits of a stronger industrial base. By keeping these items on the USML, we are effectively ending the competitive advantage the U.S. has as a leader in commercial spaceflight by giving international companies, such as Swiss Space Systems, Copenhagen Suborbitals and EADS Astrium, the opportunity to cut into the international research and tourism markets.

Additionally, the International Space Station was moved to the CCL in 1994 and has served as a platform for international collaboration, advances in science, technology development, and as a tool for inspiring the

[1] According to The Tauri Group's study titled, "Suborbital Reusable Vehicles: A 10-Year Forecast of Market Demand."

next generation of scientists and engineers. Moving manned spacecraft to the CCL would likely bring a similar, if not greater impact for science and STEM education.

We have submitted comments to the Directorate of Defense Trade Controls within the Department of State concerning their proposed changes to the USML, urging the removal of spacecraft that are "man-rated sub-orbital, orbital, lunar, interplanetary or habitat." We believe these items would be more appropriately regulated on the CCL under ECCN 9A515 as amended on the following pages. I urge you to work with the State Department to move these commercial vehicles from the USML to the CCL, and I would be happy to discuss any of our comments further.

Sincerely,

Michael Lopez-Alegria

President

9A515 "Spacecraft" and related commodities, as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, MT, RS, AT

Control(s)	Country chart
NS applies to entire entry	NS Column 1
RS applies to entire entry	RS Column 1
MT applies to 9A515.d when "usable in" "missiles" for protecting "missiles" against nuclear effects (e.g. Electromagnetic Pulse (EMP), X-rays, combined blast and thermal effects)	MT Column 1
AT applies to entire entry	AT Column 1

License Exceptions

LVS: $1500
GBS: N/A
CIV: N/A
STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in 9A515.

List of Items Controlled

Unit: End items in number; "parts," "components," "accessories," and "attachments" in $ value

Related Controls: Spacecraft, launch vehicles and related articles that are enumerated in the USML, and technical data (including "software") directly related thereto, launch services, and launch failure analysis for items in 9A515.a, are "subject to the ITAR." A license is required under the ITAR for a "U.S. person" to provide "defense services" to a foreign person for a "spacecraft" to be launched from outside the United States, even if that "spacecraft" may be exported under License Exception STA. See 22 CFR 120.9. All other "spacecraft," as enumerated below and defined in section 772.1, are subject to the controls of this ECCN. See also ECCNs 3A001, 3A002, 3A991, 3A992, 6A002, 6A004, 6A008, and 6A998 for specific "space-qualified" items and 9A004 for the International Space Station.

Related Definitions: ~~N/A~~ Manned Sub-orbital Spaceflight Vehicles

Items:

a. "Spacecraft," including satellites, manned or unmanned space vehicles, whether designated developmental, experimental, research or scientific, not enumerated in USML Category XV.

Note: ECCN 9A515.a includes commercial communications satellites, remote sensing satellites not identified in USML Category XV, planetary rovers, and planetary and interplanetary probes.

b. Ground control systems and training simulators "specially designed" for telemetry, tracking, and control of the "spacecraft" in paragraph 9A515.a.

c.1. "Manned Sub-orbital Spaceflight Vehicles" designed to operate at an altitude of 130 km or less and to carry humans and/or research payloads;

Note: 9A515 c.1. controls spaceflight vehicles that are designed to be launched and recovered at the same geographical location.

c.2. Aircraft specially designed for the carry and release of "Manned Sub-orbital Spaceflight Vehicles" at altitudes less than 18.288 km [60,000 ft];

Note: 9A515 c.2. controls the carrier aircraft whether or not it is carrying the Manned Sub-orbital Spaceflight Vehicle"

d. Microelectronic circuits rated, certified, or otherwise specified or described as meeting or exceeding all the following characteristics and that are "specially designed" for defense articles, "600 series" items, or items controlled by 9A515:

(1) A total dose of 5×10^5 Rads (Si) (5×10^3 Gy (Si));

(2) A dose rate upset threshold of 5×10^8 Rads (Si)/sec (5×10^6 Gy (Si)/sec);

(3) A neutron dose of 1×10^{14} n/cm^2 (1 MeV equivalent);

(4) An uncorrected single event upset sensitivity of 1×10^{-10} errors/bit/day or less, for the CRÈME-MC geosynchronous orbit, Solar Minimum Environment for heavy ion flux; and

(5) An uncorrected single event upset sensitivity of 1×10^{-3} errors/part or less for a fluence of 1×10^7 protons/cm^2 for proton energy greater than 50 MeV.

Note 1: Application specific integrated circuits (ASICs) "specially designed" for defense articles are controlled by Category XI(c) of the USML regardless of characteristics.

Note 2: See 9A515.x for controls on "space qualified" microelectronic circuits that are not rated certified, or otherwise specified or described as meeting or exceeding the characteristics in paragraph .d.

Note 3: See 3A001.a for controls radiation-hardened microelectronic circuits "subject to the EAR" that are not controlled by 9A515.d or 9A515.x.

Note 4: Microelectronic circuits that are "specially designed" for defense articles on the USML or for "600 series" items are controlled under 3A611.x.

e. through w. [Reserved]

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, 6A004.c and .d, 6A008.j.1, or 6A998.b.

Note 1: "Parts," "components," "accessories," and "attachments" specified in USML subcategory XV(e) or enumerated in other USML categories are subject to the controls of that paragraph or category.

"Manned Sub-orbital Spaceflight Vehicles". "Suborbital rockets" that are "reusable launch vehicles" and designed to carry humans onboard. (Note: "suborbital rocket" and "reusable launch vehicle" are defined under Title 14 CFR Chapter III Subchapter A, Part 401.5.)

> *"Suborbital Rocket" - Suborbital rocket means a vehicle, rocket-propelled in whole or in part, intended for flight on a suborbital trajectory, and the thrust of which is greater than its lift for the majority of the rocket-powered portion of its ascent.*
>
> *"Reusable Launch Vehicle" - Reusable launch vehicle (RLV) means a launch vehicle that is designed to return to Earth substantially intact and therefore may be launched more than one time or that contains vehicle stages that may be recovered by a launch operator for future use in the operation of a substantially similar launch vehicle.*