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Aerospace Export Policy

Moderator:

Dennis Krepp

Director, Sensors & Aerospace Division, BIS

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Overview

- Introduction of Panel
  - Catherine Hamilton, Licensing Director, DDTC, State
  - Robert Monjay, Regulatory and Multilateral Affairs, DDTC, State
  - David T. Flynn, NASA Export Administrator, Office of International and Interagency Relations, NASA-Headquarters
  - Kennedy Wilson, Office of Missile, Biological, and Chemical Nonproliferation , State
  - Dennis Krepp, Director, Sensors and Aerospace Division, BIS
- Focus of the discussion
- Panel Member Presentations
- Questions

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Focus

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- Recent changes to aerospace export control licensing and regulatory policy.
- Hurdles to launch by foreign service providers of U.S. commercial and government satellites
- Impact and scope of the shift in licensing jurisdiction from the USML to the CCL of commercial satellites
- Opportunities this change in jurisdiction provides to the U.S. Space industry
- U.S. export policy associated with Space Launch Vehicles
- U.S. export policy associated with unmanned air systems
- Missile Technology Control Regime impact on exports
- Catch-all requirements to prevent proliferation of missile related technology in the new regulatory environment.

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Panel Member Presentations

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Spacecraft Controls

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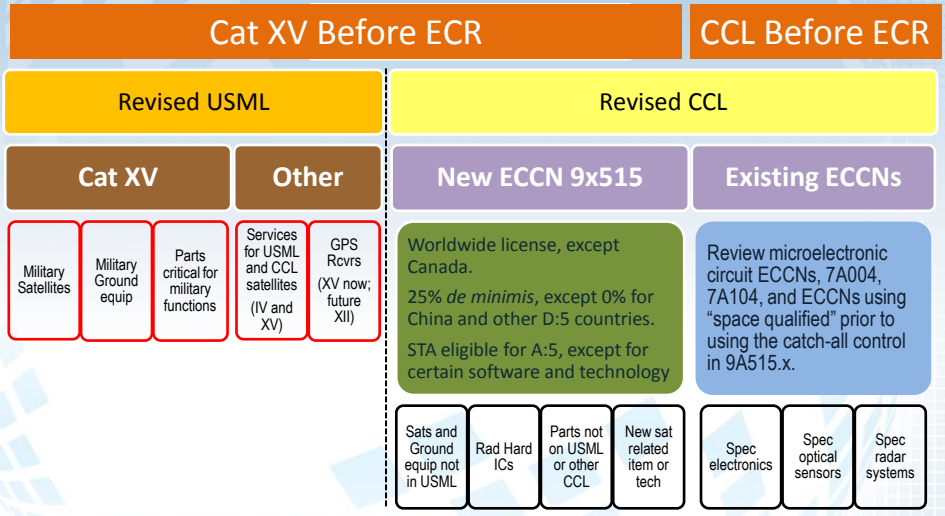

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Ongoing Cat XV/9A515 Discussions

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- Aperture size
- Integrated propulsion
- Autonomous tracking…in real time
- Plasma Thrusters
- GPS??

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QUESTIONS?

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Export Reform: Successes and Challenges



David T. Flynn
NASA Headquarters Export Administrator

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NASA's Export Control Program

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- Formally instituted in November 1995, in close cooperation with the Departments of State and Commerce
  - Among the U.S. Government's first Agency-wide Export Control Programs
  - NASA Policy Directive 2190.1B: *"The NASA Export Control Program"*
  - NASA Procedural Requirements 2190.1B: *"The NASA Export Control Program"*
  - NASA Advisory Implementing Instruction 2190.1: *"NASA Export Control Program Operations Manual"*
- Agency export control policy is centralized in a single office at NASA Headquarters and operated Agency-wide under standardized procedures
- 21 Export Control Administrators and Counsel – appointed by NASA Senior Management – in place at each NASA Center
  - NASA's experts on export control matters

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NASA's Aircraft Fleet

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NASA Unmanned Aerial Vehicles

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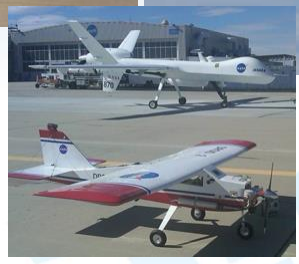

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Compliance Challenges with Aircraft

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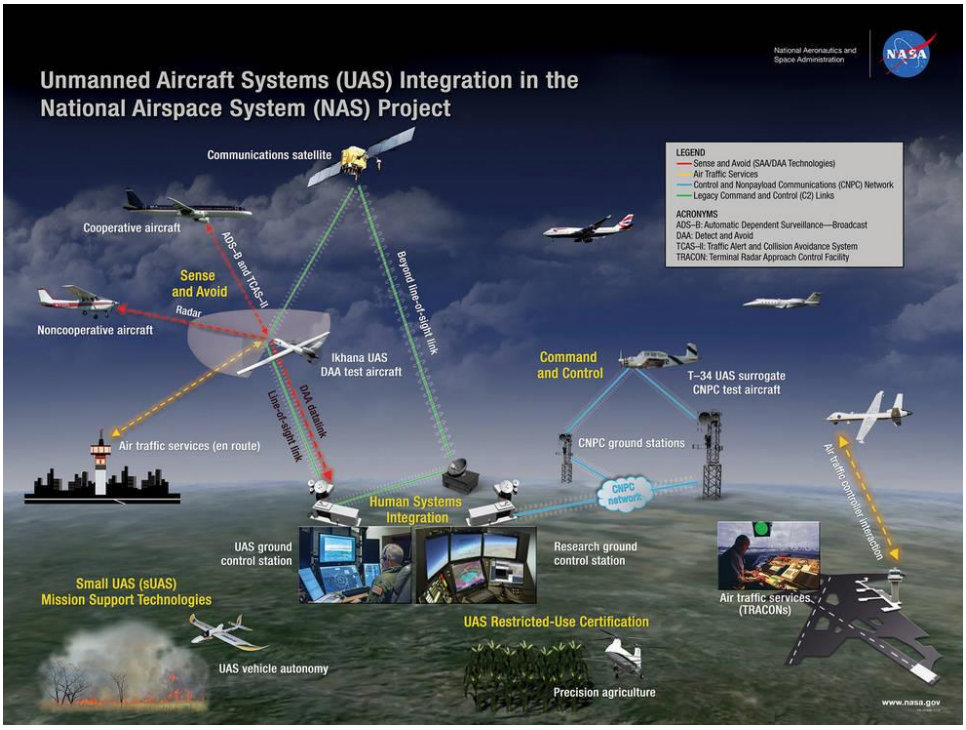
- Maintain up to date inventory of aircraft and regulatory jurisdictions (to include spare parts)
- Careful planning of overseas deployments (including transport of maintenance manuals and records, mission equipment and spares, in country tours)
- Careful review and coordination of any international partner (limitation of platform information, controlling access to platform, control of participation during missions)
- Early coordination with regulators in advance of any license submission



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International Space Station

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- International agreement with Canada, ESA, Japan and Russian Federation
- ISS is subject to EAR as 9A004
- Prior to export reform, technical data required for the detailed design, development, manufacturing, or production of the ISS was subject to the ITAR Category XV
- License exception GOV used for hardware destined to ISS less than 45 days before launch
- License exemption 126.4(a) used for technical data shared with international partners
- On Nov 10, 2014 technology moved to EAR jurisdiction
- Production and development technology now eligible for GOV to Canada, ESA and Japan partners

ND POLICY

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Orion Multipurpose Crew Vehicle

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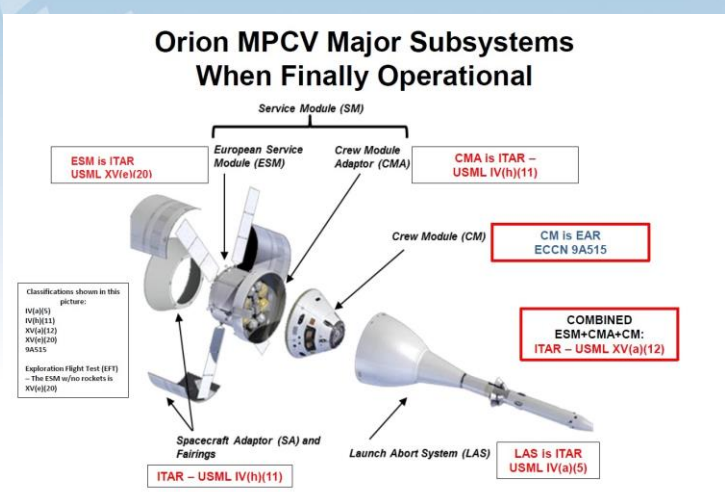

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Production and Test Equipment

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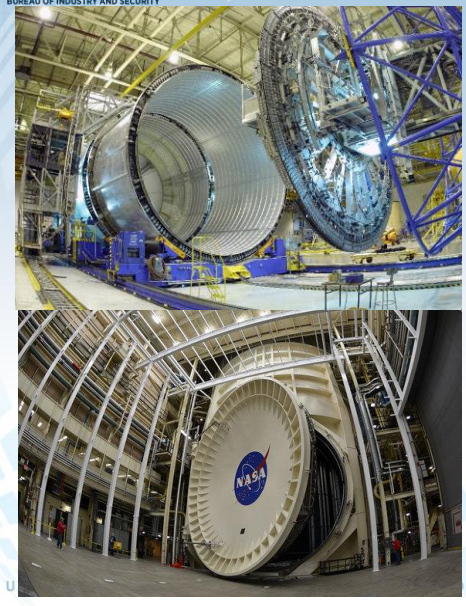

- Much of NASA large-scale production and environmental testing equipment is now subject to the EAR
- Export Reform has facilitated international collaboration and onsite participation
- Challenges still remain to ensure control of technology
- Working with foreign partners require international agreements and all foreign nationals accessing NASA technology or assets require vetting and export authorizations

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Mars Rovers Before and After Export Control Reform

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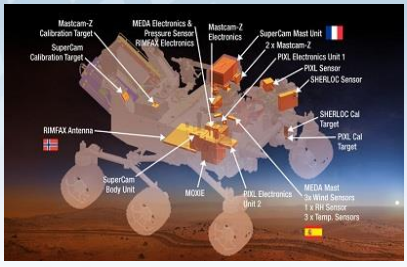
Mars 2020



- CCL 9A515.a
- 3 International Partners
- Eligible for GOV

Mars Science Laboratory Curiosity Rover

- USML Cat XV
- 13 International Partners
- 10 Export licenses & 30 TAAs

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NASA Sounding Rocket Program

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- Most missions involve both EAR and ITAR items and authorizations
- Careful coordination with any foreign partner
- Early coordination with regulators well in advance of seeking licenses
- Consideration of onsite security for overseas deployments
- Requires careful planning for shipping, consideration of how items are packaged, and under which authority items are licensed

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NASA and International Partners

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- NASA international partners are generally government agencies due to the significant level of investment and legal requirements
- Each Partner funds its respective contributions, but contributions need not be equivalent
- Cooperation must be consistent with foreign policy objectives of each Partner
- Projects/Partnerships:
  - Must have scientific and technical merit and meet NASA program objectives
  - Must be mutually beneficial (demonstrate specific benefit to each Partner)
  - Are structured to protect against unwarranted technology transfer
  - Are structured to establish clearly defined managerial and technical interfaces to minimize complexity
  - Are documented in a written, binding agreement, closely coordinated with the U.S. Department of State and other U.S. government agencies as needed

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NASA and Nontraditional Partners

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- Efforts to engage non-traditional partners have been ongoing, mostly in support of NASA's science objectives Building on existing relationships
- Close coordination with other U.S. Government agencies and consistent with emphasis on S&T cooperation and STEM initiatives
- NASA engagements have resulted in significant interest from the highest levels of foreign governments
- Initial NASA focus is on opportunities that are:
  - Mutually beneficial
  - Easy to implement at low cost
  - High impact in terms of results/societal benefits

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National Space Transportation Policy 2013

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- United States Government payloads shall be launched on vehicles manufactured in the United States unless an exemption granted through an interagency review process
- Coordinated by the Assistant to the President and National Security Advisor and the Assistant to the President for Science and Technology and Director of the Office of Science and Technology Policy
- An exemption is not required for United States Government use of foreign launch vehicles to support:
  - No-exchange-of-funds basis agreements involving international scientific programs
  - Scientific payloads for which no U.S. launch service is available
  - Hosted payload arrangements on spacecraft not owned by the United States Government

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Questions?

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Export Licensing and the Missile Technology Control Regime (MTCR)

Kennedy Wilson
U.S. Department of State
Bureau of International Security and Nonproliferation
Office of Missile, Biological, and Chemical Nonproliferation (ISN/MBC)

UPDATE CONFERENCE ON EXPORT CONTROLS AND POLICY

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MTCR: What it is …

- 34 MTCR Partners control a common list of items (MTCR Equipment, Software and Technology Annex, or the MTCR Annex) according to a common policy (MTCR Guidelines).
- The MTCR restricts transfers of missiles, and equipment and technology related to missiles, capable of a range of at least 300 km.
  - A Category I or MTCR-class missile is capable of delivering a payload of at least 500 kg to a range of at least 300 km.
  - Transfers of Category I missiles are subject to a strong presumption of denial regardless of destination/purpose.
- MTCR controls are implemented by each country in accordance with its national laws and regulations.
- The MTCR Guidelines and Annex are open to all countries to implement and we encourage all countries to do so.
- The MTCR and its Annex have been implicitly endorsed on multiple occasions by the United Nations Security Council.

The MTCR Guidelines (export control policies) and Annex (list of export-controlled items) are the international standard for responsible missile-related export behavior.

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MTCR Category I

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- Unconditional "strong presumption of denial" regardless of purpose
  - Transfer of Category I production facilities are prohibited absolutely
  - Transfer of other Cat I items authorized only on rare occasions
  - Such transfers must be extremely well justified vs. Guidelines factors
- Examples of Cat I Items:
  - Any rocket or self-propelled flying object with inherent 300/500 capability, such as ballistic and cruise missiles, target drones, sounding rockets, space launch vehicles
  - Listed subsystems of Cat I systems, such as rocket motors/engines, reentry vehicles, guidance sets
  - Tradeoff/inherent capability
  - Systems that incorporate Category I subsystems that are separable, removable, or duplicable

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Missile Technology Export Control Group (MTEC)

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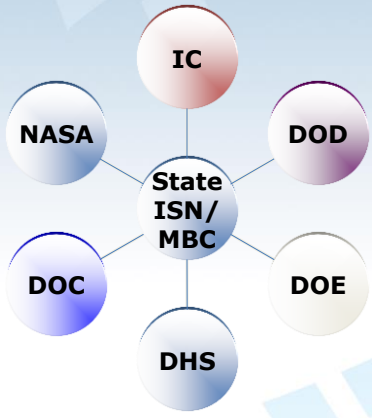

- Interagency, State-chaired (by ISN/MBC)
- One of many government agency reviews
- Decides by consensus
  - Recommendations rarely overruled
  - Non-consensus cases elevated for decision

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MTEC Process

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- Meets weekly for nonproliferation policy review
- Reviews proposed U.S. missile technology exports
  - Munitions – International Traffic in Arms Regulation
  - Dual-use – Export Administration Regulation
- Transfers evaluated on a case-by-case basis
  - Item
  - End Use
  - End User
- Review includes:
  - A thorough risk assessment, taking into account the nonproliferation factors specified in the MTCR Guidelines
  - Export enforcement/end-use monitoring and intelligence information
  - Determination of consistency with U.S. laws, regulations, and policies including:
    - National Security Presidential Directive (NSPD)-17, National Space Transportation Policy, National Space Policy, UAS Export Policy, Legislation, and Sanctions Decisions

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Space Launch Vehicles

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- MTCR Guidelines: Not intended to impede national space programs or international space cooperation as long as such cooperation could not contribute to delivery systems for WMD.
- SLVs inherently WMD-capable; SLV and ballistic missile technology interchangeable: "could not contribute" hard to meet.
- 2013 National Space Transportation policy:
  - U.S. will maintain its general policy of not supporting the development or acquisition of space transportation systems in non-MTCR countries.
  - Consistent with USG nonproliferation policies, the United States will also not encourage new MTCR country space transportation programs. ("New" = programs the U.S. did not support prior to the advent of MTCR in 1987)
  - U.S. will work to stem the flow of advanced space technology or expertise to unauthorized parties.
  - Departments and agencies are responsible for protecting against adverse technology transfer in the conduct of their programs.

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U.S. UAS Export Policy

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- Announced February 17, 2015 (Factsheet on DOS website)
- Stringent standards for the sale, transfer, and subsequent use of U.S.-origin military UAS, including armed systems, and U.S.-origin commercial UAS.
  - Sensitive systems must go FMS.
  - All U.S.-origin military UAS recipients must agree to principles of proper end-use.
  - End-use assurances, EUM, and other possible security measures.
  - All commercial UAS will be reviewed under the requirements and licensing policies described in the EAR.
- Maintains longstanding U.S. MTCR commitments.
- Work with other countries to shape international standards for the sale, transfer, and subsequent use of military UAS.