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U.S. and Multilateral Export Controls on UAS Transfers

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Missile Technology Control Regime (MTCR)

- Created 1987; originally 7 governments (G-7).
- Original focus on ballistic and cruise missiles.
- “Informal and voluntary association”- not a treaty
- Currently 34 “Partners” i.e., member governments
- Purpose: “limit the risks of proliferation of **weapons of mass destruction** (i.e. nuclear, chemical and biological weapons), by controlling transfers that could make a contribution to **delivery systems (other than manned aircraft) for such weapons**”
- Documents: MTCR Guidelines (policy) and Annex (control list)

MTCR Essentials

- Currently covers ballistic missiles (including sounding rockets and space launch vehicles), cruise missiles and **“other unmanned aerial vehicles.”**
- Also major components (e.g., engines, guidance systems), technology and production facilities for above.
- All MTCR Partners are committed to control the transfer of all MTCR systems/ components/technology to all other countries, including other MTCR Partners.
- **“It is understood that the decision to transfer remains the sole and sovereign judgement of the Government.” – MTCR Guidelines**

Categories of MTCR Systems and Components

Category 1: “capable of delivering at least a 500 kg "payload" to a "range" of at least 300 km”

Note: must exceed both range and payload parameters.

Category 2: All other items on MTCR Annex

Per MTCR Guidelines, all transfers of MTCR Category 1 systems/components confront a “strong presumption of denial.”

Category 1 transfers are supposed to be “rare” and require specific government-to-government assurances.

Category 1 UAVs

MTCR Partners added UAVs in 1992 because of perceived similarity between UAV technology and cruise missiles.

“Complete unmanned aerial vehicle systems (**including cruise missile systems, target drones and reconnaissance drones**) capable of delivering at least a 500 kg "payload" to a "range" of at least 300 km.”

Why MTCR Included UAVs

Early drones were similar to cruise missiles at the time. Target drones were fast and intended to simulate performance of manned combat aircraft. Recon drones tried to evade interception and AAA.



Ryan BQM-34 "Firebee"
USAF Museum

U.S. Policy on MTCR Transfers

United States has overcome the “strong presumption of denial.”

Examples:

- **Tomahawk and Reaper for the UK**
- **NATO AGS**
- **Predator for Italy and Turkey**
- **Eurohawk for Germany**
- **Global Hawk for Korea (pending Congressional notification)**

Allegedly, some other MTCR Partners have done so as well.

USG Policy on Category 1 UAS Transfers

1993: USG will not support acquisition or development of Cat 1 systems by countries that are not MTCR Partners.

- **Note: Israel, India, Singapore, Gulf states are not MTCR Partners.**

2001: Internal guidelines (agreed by DOD and State) for overcoming “strong presumption of denial”

- **Guidelines remain classified but seem limited to US treaty allies who are MTCR Partners.**

PROBLEM

UAS technology has changed since 1980s. Originally, equated with cruise missiles (like SLVs and ballistic missiles).

Several contemporary UAS exceed MTCR Cat 1 parameters (range/payload) but are not realistic WMD delivery vehicles (objective of MTCR).

- Examples: Predator, Global Hawk, Hummingbird

U.S. UAS assets are over-stretched. Allies and friendly countries are willing to pay to share the UAS burden. ISR mission is generally considered “stabilizing.”

But MTCR “strong presumption of denial” is a significant policy barrier to transfer of such UAS if they are Cat 1.

Even lighter-than-air UAS confront “strong presumption of denial”



Historically, lowest speed associated with a cruise missile actually intended for WMD delivery was about 725 km/hour.



Past Efforts To Change MTCR

In 2006-07, Bush Administration and UK proposed to change MTCR so some ISR-type UAS would no longer be considered Category 1 and subject to “strong presumption of denial.”

- Proposed adding parameters like speed, maneuverability, and radar cross-section to distinguish from WMD delivery vehicles.

Failed to achieve consensus at 2007 MTCR Plenary, although most Partners reportedly supported US/UK approach.

- MTCR can only be changed by consensus of all 34.

Current Administration has decided not to pursue such a change.

More recently, one other MTCR Partner (not US) has reportedly proposed excluding lighter-than-air UAS (e.g., LEMV) from Category 1.

- **Currently undergoing technical review (e.g., definition of “lighter-than-air”).**
- **Will reportedly be discussed at MTCR inter-sessional meeting this month in Paris.**
 - **Again, change will require 34-government consensus.**

USG position unknown.

Current Efforts to Change U.S. Policy

U.S. industry has pressed USG to resume push to change MTCR and update internal USG guidelines for overcoming “strong presumption of denial.”

- **Aerospace Industries Association President Marion Blakey has discussed MTCR/UAS issue several times with Under Secretary of State Ellen Tauscher and with DOD.**
- **Other industry representatives have raised repeatedly, particularly with DOD.**

Countries interested in acquiring Category 1 UAS from the US have also pressed State and DOD.

This year, DOD approved a new policy for support on UAS transfers, presumably including when the USG should overcome the “strong presumption of denial.”

- **Classified, and binding only on DOD (not State).**
- **Reportedly contains list of countries to which DOD would support transfer of specific Cat 1 systems.**
- **Outlines of DOD policy may be inferred from Feb. 23, 2011 memo from Director of Defense Security Cooperation Agency VADM Landay, which is public**
(www.dsca.mil/samm/policy_memos/2011/DSCA%2011-11.pdf)
- **Contains 20 questions to be answered in context of FMS case involving Cat 1 UAVs or UCAVs. Includes whether NATO and MTCR Partner.**

What To Do Pending Change in MTCR or USG Policy?

1. **Ask for an exception to presumption of denial.**
 - DSCA memo provides insight into what DOD is likely to support. (State invariably more cautious.)
 - Unlikely to be approved, particularly if recipient is not an MTCR Partner.
2. **Fee for Service** (less problematic than a sale)
3. **Design or modify UAS so it does not exceed both the range and payload parameters for Category 1.**

Why Not Cat 2 vice Cat 1?

State's preferred approach, and they say they will help.

- Sensors/payload getting smaller/lighter, can stay <500 kg.
- Last year, press reports that Predator XP got USG approval for export.

But not likely to work for most Cat 1 UAS.

- Industry designs first for home country use, not export.
- Modifying Cat 1 to Cat 2 costs money. Who pays?
- Foreign buyer wants original capability, not less.
- If sensors get smaller/lighter, will want to pack more in.

For Partnership Capacity and interoperability, you want Ally to have much the same capability as US.



CONCLUSION

US alone cannot meet demand for persistent ISR—Allies willing to help.

- ~15 nations have expressed interest in Global Hawk alone; more discouraged by “strong presumption of denial.”

Allies having C4ISR benefits U.S. national security.

- Reduces DoD’s unit cost, builds Partnership Capacity and interoperability, extends U.S. influence, regionally stabilizing (CT, counter-narcotics, counter-piracy).

Supports defense industrial base.

- Over \$80B market forecast worldwide in next 10 years.

Other countries are ready to fill needs if we do not.

- China and Israel both make UAS, and they are not MTCR Partners.



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Backup Slides



Current MTCR Partners

Argentina

Australia

Austria

Belgium

Bulgaria

Brazil

Canada

Czech Republic

Denmark

Finland

France

Germany

Greece

Hungary

Iceland

Ireland

Italy

Japan

Korea

Luxembourg

Netherlands

New Zealand

Norway

Poland

Portugal

Russia

South Africa

Spain

Sweden

Switzerland

Turkey

Ukraine

United Kingdom

United States

Original Partners

MTCR Annex Definition of "Range"

“The maximum distance that the specified rocket system or unmanned aerial vehicle (UAV) system is capable of travelling in the mode of stable flight as measured by the projection of its trajectory over the surface of the Earth.”

Also:

“For UAV systems, the "range" will be determined for a one-way distance using the most fuel-efficient flight profile (e.g. cruise speed and altitude), assuming ICAO standard atmosphere with zero wind.”

MTCR Annex Definition of “Payload” (for UAVs other than cruise missiles)


- **Munitions of any type (e.g. explosive or non-explosive);**
- **Mechanisms and devices for safing, arming, fuzing or firing;**
- **Countermeasures equipment (e.g. decoys, jammers or chaff dispensers) that can be removed without violating the structural integrity of the vehicle;**
- **Signature alteration equipment that can be removed without violating the structural integrity of the vehicle;**
- **Equipment required for a mission such as data gathering, recording or transmitting devices for mission-specific data and supporting structures that can be removed without violating the structural integrity of the vehicle;**
- **Recovery equipment (e.g. parachutes) that can be removed without violating the structural integrity of the vehicle.**
- **Munitions supporting structures and deployment mechanisms that can be removed without violating the structural integrity of the vehicle.**

MTCR Success Stories

Credited with contributing to cancellation of Argentina-Libya-Iraq Condor II ballistic missile program in early 1990s.

Brazil, South Africa, South Korea, and Taiwan also shelved or eliminated missile or space launch vehicle programs.

Some Eastern European countries, such as Poland and the Czech Republic, destroyed their ballistic missiles, in part, to better their chances of joining MTCR.



But MTCR Has Not Completely Halted Missile Proliferation

China has applied (unsuccessfully) to join MTCR and pledged (since early 1990s) to abide by MTCR Guidelines and Annex.

- US nonproliferation sanctions on China for transfers to Pakistan and Iran.

India, Iran, North Korea, and Pakistan (not MTCR Partners) have active ballistic and/or cruise missile programs. Some are not averse to sharing missile technology.

North Korea probably main source of ballistic missile proliferation in world today.