

A Preliminary Assessment of the Space Weapon Issue

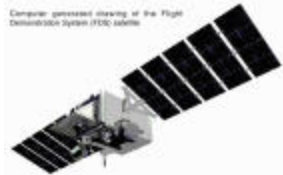
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Assessing the notion of space weapons:

1. Judging SW by their intent and uses
2. SW in space, towards space?
3. Judging SW by their effects

1. Judging SW by their intent and uses (1):

- a. Classical distinction between two classes of SW:
 - a. Kinetic Energy Weapons (as based in space)
 - b. Directed Energy Weapons (as based in space)
- b. Series of KEW experiments in the 60's, 70's and early 80's by the USSR (Co-orbital ASAT)
- c. Possibilities of Laser/HPM types of ASAT (also linked to BMD research)



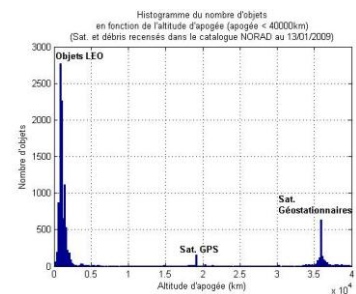
SATKA
-BSTS
-SSTS



Attribution would be here the key challenge
regarding verification

1. Judging SW by their intent and uses (2):

- a. Increasing possibilities for unexpected collisions / close encounters due to crowded segments of orbits
- b. Increasing possibilities of launch associated debris
- c. Evolving technologies make opened programmes getting transformed into possible SW



- Ex: Rendez-Vous techniques increasingly developed
 - U.S. XSS/MITEx, China SJ12/SJ-06F, Europe ATV techniques, German DEOS, Sweden PRISMA, other on-orbit servicing projects
 - Debris removal techniques?



How to attribute, and even interpret possible « accidents » ?
How to define SW without any knowledge about their intent and uses?

2. SW in space, towards space ?

a. The definition of SW must include both orbital and ground-based equipment intended to have any effect on targeted space systems?

- Most of supposed SW have been ground based:
 - China laser tagging in 2006
 - China ASAT test in 2007
 - US Standard Missile in 2008



- Projects of ground-based related technologies: Japan, South Korea, India, ...

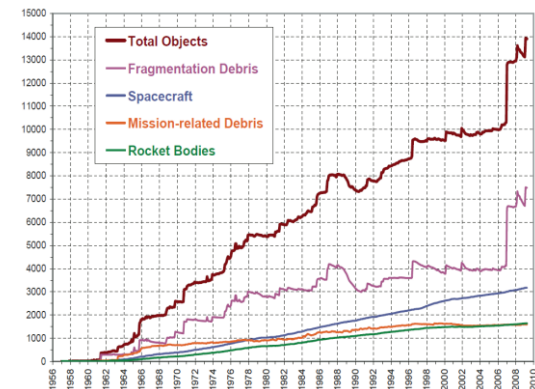
b. Issue: How taking into account such developments in the definition of SW ?

3. Judging space weapons by their effects?

a. SW, once asserted, can also be judged by their effect:

- Temporary vs Definitive
- Anihilation vs physical destruction (possibly creating long standing debris)

b. Possible paths for managing the SW issue ?



Summary: Managing the SW issue

a. SW remain an element of a larger collective security issue

- Direct consequences
- Indirect consequences

b. It creates a necessity for better definitions and better verification means (Cooperative SSA, etc)

- Ill-identified orbital moves/actions
- Ill-identified space vehicles

c. Common need for a combination of tools that will help:

- Confirm the intent
- Consider the whole capability (space and ground based)
- Assess the effects



3 elements as a starting point for a common understanding on the SW issue ?