A Preliminary Assessment of the Space Weapon Issue

Xavier Pasco
Senior Research Fellow,
FRS - Paris
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)
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Attribution would be here the key challenge regarding verification

SATKA - BSTS - SSTS
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?