



UK Mission
Geneva

**UN OPEN-ENDED WORKING GROUP ON REDUCING SPACE THREATS
THROUGH NORMS, RULES AND PRINCIPLES OF RESPONSIBLE
BEHAVIOURS**

Topic 2: Current and future earth-to-space threats by States to space systems

STATEMENT BY THE UNITED KINGDOM

H.E. Mr Aidan Liddle, Permanent Representative to the Conference on Disarmament
Geneva, 13 September 2022

Mr Chair,

We listened with interest this morning to the presentations on current and future earth-to-space threats by States to space systems.

As the panellists made clear, there is a range of capabilities that currently exist to target space objects from Earth. These include:

- Direct Ascent Anti-Satellite Missiles
- Directed Energy Weapons (e.g. lasers)
- Electronic Warfare (e.g. Jamming and Spoofing)

These capabilities can be used in ways that have widespread and often unpredictable effects and present risks for international security and strategic stability. Therefore, in considering how to prevent an arms race in outer space, it is vital to examine the earth-to-space dimension of the problem.

Mr Chairman,

Let me first make a few points about **Direct Ascent Anti-Satellite Missiles**. As pointed out by Victoria Samson of the Secure World Foundation this morning, this capability has existed for several decades and has been tested destructively and non-destructively many times by several countries.

A concerning feature of this capability is that the perception of threat emerges not only from the potential use of such weapons but also the testing of them.

Given our increasing security and socio-economic reliance on space, we believe that destructive testing of direct ascent anti-satellite missiles can be conclusively regarded as irresponsible.

Not only is destructive testing of direct ascent anti-satellite missiles damaging to the space environment and therefore detrimental to the interests of all states, it could also lead to misperception and miscalculation. An affected State may not be able to distinguish between a “shoot-to-miss” test, a destructive test, or an indication the State testing the missile wished to start a conflict

We therefore welcome the commitment made by the USA and others to not destructively test direct ascent anti-satellite missiles. This is a good example of a responsible space behaviour: it addresses a real and pressing problem, it is implementable because it is verifiable and would reduce mistrust and miscalculation.

This is clearly a priority area for international agreement.

Mr Chairman,

Let me turn to **directed energy weapons**.

Directed energy weapons purposefully focus energy, such as laser, particle, or microwave beams to interfere with space systems. In theory such a capability can be used at a range of power-levels to deny, degrade, disrupt, deceive or destroy space objects.

However, it is also worth noting that lasers have peaceful uses in tracking satellites and in communications.

At the present level of technological development, the mostly likely use of directed energy weapons against space objects would be to dazzle (temporary) or blind (permanent) intelligence, surveillance and reconnaissance (ISR) satellites in order to conceal activities on Earth.

There are several risks associated with such activity. Intelligence, Surveillance and Reconnaissance satellites are essential for strategic stability. They are, for example, important for detecting ballistic missile launches or understanding whether preparations for such launches are being made.

Dazzling or blinding a country's Intelligence, Surveillance and Reconnaissance satellite may cause that country to wonder whether a launch is imminent and to prepare response options irrespective of whether a launch is planned. There is therefore a risk of miscalculation and escalation. The stakes are even higher if the missiles in question contain nuclear warheads.

Space systems play a key role in ballistic missile early warning systems and can play an important role in nuclear command and control, which means space security and responsible behaviours in space have a direct role in reducing the risk of escalation to nuclear conflict.

Another consideration with respect to directed energy weapons is that a country may permanently blind rather than temporarily dazzle the sensor of an intelligence, surveillance and reconnaissance satellite. The country which operates the target satellite has no way of knowing the intent of the country that is using the laser. Again there are risks of miscalculation and uncontrolled escalation.

Mr Chairman,

Let me also say a few words about the future of directed energy weapons as the mandate of this group is to discuss both current and future threats.

In future lasers powerful enough to destroy targets at a distance may be developed. Such lasers would likely have a variety of defence uses, including to attack satellites and for Ballistic Missile Defence and other uses.

As the technology advances and the power and impact of such systems increases, there will be a need for states to talk about their usage and testing for military purposes in order to foster transparency, predictability, and avoid miscalculation and uncontrolled escalation.

Finally let me make a brief point about **Electronic Warfare**, which concerns the interference with signals that flow between equipment on the ground and satellites.

Electronic Warfare capabilities are used for military operations. There are examples in which the use of such capabilities has affected civilian operations. As we have said, there are risks of miscalculation and escalation that can arise, and it may not always be easy to predict the extent and impact of such collateral impacts.

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