

Practical tools to facilitate space security, safety and sustainability

First, I am not sure that these three words should be always used together, although some tools can be shared. We need to acknowledge the difference between space security and space safety and sustainability because it has a direct implication on actual tools used to address challenges in these spheres, although an overlap is possible. When we are talking about practical tools in space security it means transparency and confidence-building measures. As for ones in space safety and sustainability it is more of the UN Committee on the Peaceful Uses of Outer Space (COPUOS) business. My personal focus is on hard security, and that's what I will try to address today. The trend towards actual weaponization of outer space is here, but it does not mean that a war in space is something inevitable, and arms race in outer space should not be on the agenda.

Efforts should be focused on understanding the threat perceptions of different actors. These efforts should be carried out in good faith, to try to walk an extra mile to understand the foundations of such perceptions. Only with such approach the indivisible security can replace the security dilemma as a foundational concept for outer space – and other domains as well.

Counter-space capabilities (land-based, air-based or space-based, kinetic and non-kinetic) clearly exist and are being developed and refined, although with rather limited transparency and with different objectives, which in terminal stage can be grouped into “achieve superiority” or “deny superiority”. Naturally, it leads to an arms race, despite the stated end goal of PAROS. Still, I hope that the newly established Group of Governmental Experts on PAROS will contribute to the fulfilment of this goal.

In parallel some sort of extra transparency and confidence-building measures can be elaborated as complementary interim

mechanisms that should not substitute legally binding instruments.

A focus should be on increasing predictability of strategic situation in outer space and trust as well as on limiting the possibility of incidents and accidents, while also not going way to far with intrusiveness. One of the possible ways to address it might be to consider an option of a notification regime similar to the one for Earth-based tests of long-range weapons, that is of NOTAMs and NOTMARs, notifications to airmen and mariners, navigational warnings, etc. In outer space, it is clearly more complicated to establish hazardous areas, or rather ‘volumes of orbits’ where testing and experiments can take place, but the effort can produce some useful and usable outcomes, including for the future peaceful space exploration.

There are obstacles, or rather challenges, for ‘hard’ arms control to strengthen the regime of outer space security. First, currently, many state and non-state actors are investing in space capabilities and by default oppose any possible limits on such capabilities. Second, arms control as a concept is experiencing hard times, and arguments to increase its role as a tool to ensure national security should be revitalized. Third, states have different priorities in this field: some are concerned with safety and security of space assets, including from Earth surface, others are concerned with possible threats from space for terrestrial or outer space infrastructure, and each has its own vision on how space capabilities can be a force multiplier for cross-domain military power – and how to deprive their adversaries of such.

Given the current state of international affairs and the ever-growing great power competition evolving towards great power rivalry we are already in a dangerous situation. However, as the great powers are very dependent on space infrastructure (despite the efforts to establish some alternative enablers) some sort of agreement might be possible to prevent an arms race in outer space, threat, or use of force in, from or against outer space,

including on non-targeting of this infrastructure, at least by destructive attacks and during conflicts that do not involve direct warfighting between those powers.

Ban on any threat or use of force against critical space-based infrastructure and its ground stations, especially the one connected to the nuclear command, control and communications (NC3) can be a very important step towards reversing the current trends and enhancing the strategic stability between the major nuclear powers. However, for such a ban to be effective it needs to be of a much broader and detailed nature compared to the current US initiative on DA-ASAT.

Russian focus remains with the legally-binding mechanisms to prevent an arms race and weaponization of outer space: a draft treaty on the prevention of the placement of weapons in outer space and of the threat or use of force against outer space objects (PPWT) is advertised as a basis for negotiations. TCBMs are considered as a pillar of an international legally binding instrument on PAROS aimed at completely prohibiting the placement of weapons in outer space, the threat or use of force against or by means of outer space objects.

The PPWT initiative is augmented with the political commitment of No First Placement of Weapons in Outer Space (NFP), of which more than thirty States have become members. Its aims are to enhance international peace and indivisible security for all, of course, but also improve the predictability and sustainability of states' activities in the use of outer space.

Given such trends it seems possible that with political will further practical measures might be considered as a starting point for achieving PAROS goal, including the development of a legally binding instrument that will prevent arms race, deployment of weapons, threat or use of force in outer space.

Q&A

i. How can States be encouraged to actively participate in measures such as registration of objects, notifications of launches, and sharing of information? What are existing barriers to greater participation? With UNIDIR & SWF's new space security portal and UNOOSA's new registration portal, how do we ensure the success of these tools?

Increased transparency to address possible misperceptions of state actions in outer space can take form of states and other actors issuing notifications on their intended missions, purposes of different space objects and their activities, as well as terrestrial space-related and counterspace-capable assets. Detailed declaratory policies on military space capabilities and priorities, at least for the major space powers can be helpful as well. As I've mentioned, sort of 'space traffic navigation warnings' could be useful and usable tool, although under current political climate such options probably should be pursued in unilateral manner, at least initially.

ii. Increasingly, States have referenced a need for the creation of a focal point to facilitate information sharing and space situational awareness. Hypothetically, how would such a focal point be set up – how do we ensure its implementation, use, monitoring, and verification?

Existing space situational awareness capabilities can be linked between each other, or through the existing and, hopefully, future risk reduction centers, to have a working hotline that, again, can help to prevent escalation. It can be not a universal, but bilateral and multilateral data exchange links initially, although, of course, there is a challenge that any cooperation is in fact addressed against third parties, e.g. the joint efforts between the US and Japan.

iii. The lack of common understanding regarding terminology is an issue that is often raised by States and other stakeholders as a concern that can negatively impact space security. What can be done to mitigate such danger? How can tools such as UNIDIR & SWF's Lexicon for Space Security assist in such task?

I'd focus here with the fact that the Lexicon, to which I've had an honour to contribute, is a first step towards greater understanding. It may be discussed, debated – and refined by the UN Member States, which will benefit everyone involved, and even become a part of the development of legally-binding instrument for PAROS.

iv. The dual-use and dual-purpose of space systems is often highlighted as an issue that can heighten space security concerns. How can transparency be encouraged while taking into account this dual nature of space systems? Can effective verification and monitoring mechanisms be established that are able to take this dual nature into account?

One example of such dynamics is the current debate about some so-called active defense capabilities for spacecraft that should help to protect those against adversary counterspace capabilities. The very same capabilities can also be used to threaten or attack adversary spacecraft, leading to a textbook case of security dilemma contributing to arms race.