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Author: Ms. Gaia Ravazzolo
Istituto Affari Internazionali, Italy

Ms. Maria Vittoria Massarin
Istituto Affari Internazionali, Italy

SP(E)ACE: MAPPING THE PATH OF GROWING SPACE MILITARIZATION AND WEAPONIZATION

Abstract

Space, a realm of scientific exploration and international cooperation, could transform into a domain of military competition and conflict; despite existing international norms (such as the OST) and agreements (such as the 2021 draft resolution on "Reducing space threats through norms, rules and principles of responsible behaviours") aimed at preventing the weaponization of space, current trends suggest an inevitable trajectory towards increased militarization. This paper examines the evolving landscape of space militarization, exploring the driving forces behind this phenomenon and projecting future perspectives in light of emerging technologies and geopolitical realities. In the contemporary context of hybrid warfare, the weaponization of space isn't solely driven by traditional state actors. Non-state malicious entities, empowered by the accessibility of advancing technologies, pose significant threats to the security and safety of space-based assets. Conversely, as nations continue to invest heavily in space capabilities to bolster national security and assert dominance, coupled with the expanding commercialization of space, the boundaries between civilian and military applications become increasingly blurred. Satellite technology, space-based surveillance, and communication systems, initially developed for peaceful purposes, are now being repurposed for military and hostile objectives: a preamble for future space-to-space threats (for example, in-orbit-servicing could be used to damage platforms). Of particular concern are advancements in anti-satellite (ASAT) weapons and directed energy weapons (DEWs), which could represent significant escalations in space-based capabilities. ASAT tests conducted by major powers underscore a willingness to challenge established norms and pose grave risks to the orbital environment. DEWs, with their capacity to disrupt or destroy spacecraft remotely, introduce new dimensions of vulnerability to space assets. The spectre of space terrorism looms large in the face of growing space weaponization. Non-state actors emboldened by access to advanced technologies could orchestrate attacks against space infrastructure, disrupting global communications networks and jeopardizing satellite-dependent services. This potential convergence of future space-to-space non-kinetic and kinetic attacks presents formidable challenges for space security, demanding comprehensive strategies to mitigate risks. Despite growing militarization and weaponization of space, international cooperation and diplomacy persist. Multilateral efforts to establish norms and promote transparency in military space activities are essential for stability and conflict prevention. Diplomatic initiatives, backed by robust space surveillance and SSA, can build trust among space-faring nations. In conclusion, addressing the root causes of space militarization and adopting collaborative governance can lead to a secure and sustainable space environment for future generations.