



Analiza

KBN

Nr 13 (77) / 2020

23 listopada 2020 r.



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The United States Defense Space Strategy of 2020

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The United States has been beefing up an effort in the space-related security realm for some time now. Organizational changes have been made with more pending, and the conceptual work with regard to space activities is also quickening its pace. The notion of space becoming a “warfighting domain” is being repeated more and more often within the American security establishment. It is not, however, exactly clear what exactly does “space warfare” mean.

The last few years have seen an unprecedented development of organizational forms of the U.S. security-related effort in Earth’s orbit. In March 2018 President Donald J. Trump [mentioned](#) for the first time an intent to create a new separate branch of the U.S. military, tasked to combine the whole military-related activities in outer space. By September 2018, the Department of Defense (DoD) published a [report](#) containing the final architecture of new institutions designed to operate in the space domain. Subsequently, following its provisions, the decision to create a new unified combatant command, the U.S. Space Command (USSPACECOM), was [made](#) on December 18th, 2018. That new unit was supposed to take over a range of space-related tasks from the U.S. Strategic Command. On February 19th, 2019, President Trump [issued](#) the Space Policy Directive – 4, which ordered the Department of Defense to prepare a legislative proposal to establish the Space Force as the sixth branch of the U.S. military. On August 29th, 2019, the USSPACECOM was officially [established](#), with four-star general (USAF) John W. Raymond as a commanding officer. Finally, on December 20th 2019, the United States Space Force (USSF) was [created](#) through the

enactment of the National Defense Authorization Act for FY 2020. It has become the sixth branch of the U.S. military, positioned within the Department of the Air Force. General Raymond was appointed the Chief of Space Operations (CSO) and became one of the Joint Chiefs of Staff. Since this moment he has held two positions: CSO and CO USSPACECOM.

Naturally, the new organization required a new doctrine. Until recently, space-related security issues have been addressed by the [National Space Security Strategy](#), as well as some other general and detailed strategy documents. But the advent of the new branch of the military required a new doctrinal approach and a comprehensive formulation of the tasks it was supposed to fulfil. On June 17th, 2020, the Defense Space Strategy (DSS) has been published by the Department of Defense to serve as a central concept referring to space security and related interests of the United States.

This document, in its published version, is labelled as a “summary”; and so, we may expect that a more detailed version exists. It comprises of an executive summary, three chapters, and very brief conclusions (all the quotations below refer to the [available text](#) of the DSS).

The executive summary offers general observations referring to space activities. The basic notion is that “space is now a distinct warfighting domain”. Such formulation implies that the issue of security in the extraterrestrial realm, and related activities there, must be addressed mainly from the military point of view. Therefore, the Strategy “identifies how DoD will advance spacepower to enable the Department to compete, deter, and win in a complex security environment characterized by great power competition.”

The first chapter, titled “Desired Conditions”, describes how the United States sees the way space activities should be organized to meet the American interest. This preferred future state of affairs in Earth’s orbit is defined in the following statement.

“The space domain is secure, stable, and accessible. The use of space by the United States and our allies and partners is underpinned by sustained, comprehensive U.S. military strength. The United States is able to leverage our use of space to generate, project, and employ power across all domains throughout the spectrum of conflict.”

It is worth noticing that the concept of peace through strength, which is widely [present](#) in the current American security doctrine, is clearly visible here, for a desired state of space security is supposed to be maintained predominantly by the U.S. military power. For that purpose, according to the DSS, the DoD is supposed to pursue three main goals:

- “Maintain Space Superiority”, what essentially means “freedom of operations in the space domain”. To establish and preserve it, the U.S. will deter, and if necessary defeat, any adversary who would try to use Earth’s orbit against the United States, the American allies, partners, or commercial interests of the U.S. entities.
- “Provide Space Support to National, Joint, and Combined Operations”. This provision, in turn, means the ability to offer unhindered support of space systems to every branch of the U.S. military to allow it to maintain superiority over every adversary. This support to warfighting and intelligence effort is currently the chief task of space systems, and it must be continued effectively.
- And finally, “Ensure Space Stability” means that the DoD “will maintain a persistent presence in space in order to: deter aggression in space; provide for safe transit in, to,

and through space; uphold internationally accepted standards of responsible behavior as a good steward of space; and support U.S. leadership in space traffic management and the long-term sustainability of outer space activities.” This sentence is not only a declaration of intent, but it also forms the definition of space security in its broadest sense. Therefore, it should be regarded as one of the most important provisions of the DSS.

A definition of spacepower is also enclosed in this part of DSS. It is understood as “the sum of a nation’s capabilities to leverage space for diplomatic, information, military, and economic activities in peace or war in order to attain national objectives.” This fundamental definition entails an intent to create and maintain extensive infrastructure and support systems for the comprehensive space security-related effort. It reflects an understanding that activities in Earth’s orbit are very demanding in terms of technology, organization and, above all, funding.

The second chapter of the Defense Space Strategy is titled “Strategic Context”, and describes the current state of the strategic environment with regard to space activities. First and foremost, it is acknowledged that re-emerging great power competition is the most important factor shaping the global security realm. In this context, the DSS states that “space is both a source of and conduit for national power, prosperity, and prestige. As a result, space is a domain that has re-emerged as a central arena of great power competition, primarily with China and Russia.”

Probably the most important conclusion from the whole document is that the U.S. space capabilities, even if they are more important for America than for any other nation, are not adequate from the point of view of the current characteristics of space security. It is, therefore, bluntly stated that “the U.S. defense space enterprise was not built for the current strategic environment. The intentions and advancements of potential adversaries in space are threatening the ability of the United States to deter aggression, to protect U.S. national interests, and to fight and win future conflicts.” Let us reiterate that it is a crucial statement because it implies that the American military is in a difficult position with regard to military assets which define the nation’s security. Thus, it is absolutely imperative for the United States to redouble an effort to create a safe and sustainable space security architecture, encompassing both space-borne hardware and an on-Earth organization.

If outer space has become the “warfighting domain”, the Strategy outrightly blames the U.S. adversaries for this. On the other hand, “growth in allied, partner, and commercial space capabilities has added complexity to space operating environment while creating an unprecedented level of collaborative opportunities”. Here we can clearly see the us-versus-them paradigm, a traditional dichotomic logic projected onto the outer space security arena.

Next, chapter two of the DSS identifies “threats”, “challenges” and “opportunities”. Firstly, it identifies China and Russia as “the most immediate and serious threats to U.S. space operations” with Iran and North Korea considered second-tier competitors. And so, it is observed that the two main adversaries deeply understand the way the American space capabilities are leveraged. They also realize a growing dependency of the United States defense establishment on space applications. On the other hand, it is noted that the Russian and Chinese capabilities have also improved and the “use of space is expanding significantly”, as far as these two countries are concerned. Certainly, the most important consequence of this state of affairs is that the PRC and the RF “consider space access and denial as critical components of their national and military

strategies”. They also “view space as important to modern warfare and consider the use of counterspace capabilities as a means for reducing U.S., allied, and partner military effectiveness and for winning future wars”.

The “challenges” are actually the factors which may limit the American ability to achieve the desired conditions mentioned in chapter one. Firstly, the United States is more dependent on space assets than its adversaries. Secondly, it “has limited operational experience with conflict beginning in or extending into space”. Thirdly, there is no binding international agreement defining “unsafe, irresponsible, or threatening behavior in space”. Fourthly, potential adversaries advance in their capabilities and advancement of the commercial space sector is also exploited by them. Fifthly, it is assumed that the public in the United States, allied and partner countries remain underinformed about reliance on space systems, changes ongoing in outer space, and counterspace capabilities of the adversaries.

And, finally, there are several “opportunities” which “may enhance the Department’s ability to attain its desired conditions”. Firstly, there is an understanding of the importance of space activities for “national security and prosperity” within the nation’s government structures. Secondly, the creation of the U.S. Space Force is an opportunity to “reform every aspect of our defense space enterprise”. Specifically, the new service may bring the necessary cohesiveness to the effort. The same goes with USSPACECOM, which “will bring additional operational focus to deterring threats and shaping the security environment in space”. The Space Development Agency is also listed as one of the new institutions which may bring more effectiveness and allow to focus on crucial aspects of space effort. Thirdly, it is noted that the new leadership and management of space acquisitions may contribute to a faster development of concepts and assets, the latter also having prospects of becoming better integrated, even if somewhat streamlined. Fourthly, the U.S. allies and partners may contribute through the system of cooperation which is built on trust, common values, and shared national interests. And fifthly, the development of commercial space activities is currently very quick and yields continuous fall of prices and rise of the effectiveness of commercial activities. This adds up to growing abilities of the commercial sector which may also contribute to the establishment of new security-related capabilities. Therefore, „the DoD has an opportunity to leverage innovation and cost-effective investments driven by the private sector, presenting opportunities for collaboration to develop game-changing capabilities with a more streamlined and responsive acquisition process.”

The third chapter of the DSS is titled “Strategic Approach”, and it contains an outline of the American strategy designed to meet an objective stated in the first chapter. It is dominated by the notion of militarization and weaponization of the space domain, as “the Department is rapidly transforming its approach to space from a support function to a warfighting domain in order to achieve our desired conditions and strategic objectives over the next 10 years in the face of identified threats, challenges, and opportunities”. Thus, the U.S. is apparently poised to take rapid action to “ensure space superiority and secure the Nation’s vital interests”. According to the DSS, these activities will be organized around the so-called Lines of Effort (LOEs).

The first LOE is labelled “Build a comprehensive military advantage in space.” According to this Line the United States is compelled to “transform its space enterprise by: reforming its organizations; fielding resilient architectures; building capabilities to counter hostile uses of space; and developing spacepower expertise, doctrine, and operational concepts commensurate with the threat”. Within this field of interest, the establishment of the U.S. Space Force and other new institutions is considered as a crucial vehicle of achieving the primary goal. There are also several

specific objectives within this LOE, such as: expanding the USSF, evolving of doctrinal foundations of military spacepower, developing and expanding “space warfighting expertise and culture”, fielding of the new, robust space capabilities, countering the threat posed by “hostile use of space” and improvement of the intelligence capabilities together with command and control system.

The second LOE is titled “Integrate military spacepower into national, joint, and combined operations.” In essence, it means that “military spacepower achieves its greatest potential when combined with all other forms of military power”. The establishment of the USSPACECOM is one of the most important actions with respect to that. The Strategy also declares that “DoD components will prioritize necessary resources for this LOE for the duration of the DSS timeframe”. To do so: USSPACECOM capabilities must be improved, “operational authorities and update rules of engagement” should be realigned, “space warfighting operations, intelligence, capabilities, and personnel” should be integrated with existing military structures, and “allies and partners” should be integrated into “plans, operations, exercises, engagements, and intelligence activities.”

The third LOE is titled “Shape the strategic environment”, and it refers first and foremost to the actions directed to “deter of the aggression and attacks in space and, if deterrence fails, be capable of winning wars that extend into space”. The other dimension of the strategic environment is the day-to-day stability of the space domain. In this context, the Strategy observes that international rules referring to what is the acceptable behavior in space and what is not “are nascent or, in some cases, non-existent”. Therefore, the United States must work with its allies and partners to “reduce the possibility of mishaps and misperceptions”. This LOE is considered critical for the short term, and it contains specific objectives with regard to the informing of the international community and internal public about “adversarial threats in space”, deterrence and extended deterrence which also refer to commercial interest. Co-ordination of distribution of the information about space threats and promotion of favorable standards and norms is also envisioned in the document.

And finally, LOE four, titled “Cooperate with allies, partners, industry, and other U.S. Government departments and agencies”, expands some of the motives included in the first three lines, but states that partnering is “a distinct LOE in its own right.” Interagency cooperation, working with international and commercial partners is a crucial factor as far as many of these bodies possess “space capabilities [...] already integral to collective security”. Allies and partners may also contribute to burden-sharing in the development and use of “cooperative opportunities in policy, strategy, capabilities, and operational realms”. Specific objectives within this LOE include: information sharing, co-ordination of space policies, collective promotion of “favorable standards and norms of behavior in space”, expanding of “cooperative research, development, and acquisition”, use of the commercial technologies, and adaptation of “DoD’s approach to the commercial licensing approval process.”

It is difficult to assess in detail the role and influence of such an overarching document within the framework of this piece. So, in the following we will concentrate on one crucial issue. The most important feature of the U.S. Defense Space Strategy, which is determining its significance for the shaping of the American security doctrine, is that it labels outer space “a warfighting domain”. This notion is, however, as widely used as vague or even misleading, what puts the value of the whole doctrine in question.

Space systems have been used for military purposes since the very beginning of the Space Age as a force multiplier or instrument of information gathering. These tasks were executed for deterrence and support of combat missions. By that, space systems have been present in terrestrial battlefields for decades. But instead of becoming yet another battlefield, Earth's orbit has remained a sanctuary, what means that no weapon has been stationed there and no ground-based anti-satellite (ASAT) system has been deployed. If it is supposed to change, if the space domain is to turn from sanctuary to the battlefield, either space-based weapons or ground-based ASAT must become a reality. Only this would enable combat in outer space with the use of orbital systems.

In real terms, however, the idea that space combat may become a reality in the near future is doubtful at least. There is no place for an extensive argument here, but still we believe that it is unclear if any of the world powers, apart from the United States, does intend to develop ASAT weapons to the stage of mature combat systems and to field them in meaningful quantities. This is, first of all, because the procurement of an anti-satellite force which would be significant from the point of view of overall strategic balance undoubtedly will be enormously expensive. What is more, and in fact crucial, the effectiveness of the currently tested systems against forthcoming large satellite constellations is highly questionable. Therefore, we believe that any kind of ASAT weapons which is projected as feasible today, and so might be fielded within the next decade, would surely be very expensive and presumably mostly ineffective.

It is also worth noticing, and we think it is a very significant fact, that the United States has at its disposal the Ballistic Missile Defense System (BMDS) which may be used as an ASAT system. It is a global enterprise designed to defend the U.S. soil, the American allies, partners and deployed forces against limited strikes with the use of ballistic missiles of various kinds. The BMDS comprises of ground-based fixed and mobile units, and a large number of sea-borne launchers. The United States adamantly holds that the purpose of the BMDS is solely defensive and it is tasked only to destroy ballistic missiles on their suborbital paths. But many of the interceptors deployed throughout the world are capable of fighting incoming missiles on orbital altitudes, thus they can be adapted to engage satellites in orbit. This ability has actually been [proven](#) in 2008 when U.S. Navy guided-missile cruiser "Lake Erie" destroyed the defunct USA-193 satellite.

Several variants of the SM-3 missile are particularly capable of destroying satellites in low-earth orbits. According to [available budget projections](#), as of the end of 2020, the number of SM-3s in the inventory should be higher than 400 units based onboard of 46 U.S. Navy cruisers and destroyers and in a fixed installation in Romania. This means that any contender who would try to challenge the American future space systems with ASAT weapons would be immediately confronted with the large American anti-satellite force highly capable against existing space assets. As far as Russia and China are concerned, it would rather be useless to create such an unfavorable asymmetry or embark on the new arms race with an uncertain prospect. Of course, both countries are in the process of developing anti-satellite weapons systems, but it does not mean that they actually intend to field them in significant quantities. It remains to be seen if these novel weapons are going to become a strategic reality, or they are just a bargaining chip, a sort of an insurance policy or political tool in the quest for international prestige.

On the other hand, hostile activities directed to disrupt adversaries' space systems are being conducted on a regular basis. Blinding, dazzling, jamming, spoofing is the everyday reality in space, but it is hardly a "warfighting". It is, instead, a sort of irregular, somewhat chaotic struggle to harm one another but without risking an all-out conflict which would obliterate all the systems of all the

parties to the conflict, especially if the so-called [Kessler effect](#) (or Kessler syndrome) is triggered. This irregular struggle brings successes and achievements and benefits participants in many ways but lacks dangers associated with the arms race and actual combat.

Despite this reality, the DSS and other American strategic documents insist that Earth's orbit has become a warfighting domain. This notion is also present on numerous statements by influential politicians, not only in the United States but in other Western countries as well. As these provisions and announcements do not reflect facts, they only mean that human activities in space are increasingly being securitized. We believe that this is the most important factor which shapes the space security environment, at least as far as the American position in it is concerned. And this tendency is going to persist even after the change in the White House.

As we have mentioned, the securitization of space is a global phenomenon, but the United States is certainly in the lead. This is mainly because the American defense and security establishment understands that the U.S. edge over other countries which are developing space systems, has been diminished. Furthermore, the burgeoning commercial space industry transforms outer space from the military domain to the sphere of civilian activities. The latter issue has been increasingly important for the economic and social development on Earth. All of this means that the U.S. military is effectively losing its dominance in space as it is confronted with other countries' military space activities and the growing preponderance of the commercial sector. The supremacy of the United States in outer space is, therefore, definitely poised to be reduced, as far as the military realm is concerned. This makes the U.S. security establishment somewhat nervous and makes it seek ways to retain the American position of the leading force in all of the space activities. The securitization of human exploitation of outer space seems a very convenient tool to do just that.

In the nearest future we will therefore witness an increasing determination of the United States to portray space as a warfighting domain, which will be supported by the Chinese and Russian efforts to advertise their prowess in space. But it is doubtful if additional resources could be mustered to make space "warfighting" come true, due to the realities described above. We will, of course, witness an effort to increase the resilience of existing missions attributed to various space systems, and to off-set eventual advent of ASAT systems in the future, but it hardly qualifies as warfighting. It is still just enhancing the existing capabilities of space systems in their supportive role for the security-related efforts on Earth. On the other hand, ground-based ASAT weapons systems are in the inventory of the U.S. military, and the United States is going to remain the sole world power, wielding this kind of weaponry. That is because it is rather doubtful if any of the other key countries would like to risk an all-out arms race in space. And finally, the true space weaponization which would encompass space-based weapons fighting other space-based weapons or conducting combat missions against terrestrial targets remains a rather distant future. Currently, there are no viable technological solutions which could yield in meaningful combat systems of that sort in the foreseeable future.

Citation: Marek Czajkowski, 'The Syrian-Turkish Conflict and its Implications for Russia – A Follow-Up', *KBN Analysis* 2020, no. 13 (77), 23 November.