Evolution of the strategies of use of space for military purposes

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The strategies of military use of space have largely structured space activity since the beginnings of space exploration. The context of the 1950s in which these activities appeared was first that of the confrontation between the American and Soviet blocks. The new focus on space was initially rooted in the race for military and strategic supremacy. Paradoxically, this agenda has for a long time determined what space is about, with the primary objective of mutual surveillance, which was ultimately to benefit the stability of the strategic balance.

This era of stability seems to be in question today, with the symbolic turning point on January 11, 2007, the date of China's first anti-satellite test, which *ipso facto* became a new major player in the military landscape of space. This event can be seen as a novelty that has destabilized the initial balance. The numerous reactions throughout the world denouncing this Chinese decision and its consequences have manifested the fear of seeing space fall into a new and more dangerous era, being open to direct or indirect military confrontations in orbit. But above all, this event confirmed the transformation of the military uses of space that has taken place over the last thirty years. Space-based systems have gradually become part of the defense systems used directly in operations and they will henceforth constitute a target of choice during future conflicts. This is also what the January 11, 2007 test was all about.

Since that date, space activity itself has undergone profound and rapid upheaval. The context is marked by an accelerated industrialization, which has in turn led to a proliferation of objects in orbit and the entry of new players, whether they are new space-going countries or new private players in the process of deploying infrastructures. The very conditions of security in space have been transformed. As users of space, the armed forces are in the front line and will have to adapt to these transformations both to limit the risks to their capabilities and to make the best use of their new environment in order to make it a real lever for their action. For the military, this ability to operate in space is unprecedented. Forged by the years of the Cold War, military space programs have long been marked by the incremental improvement of observation programs in the broad sense (in the optical or electromagnetic domains in particular) but relatively few direct military uses, whether on Earth or in space. It is true that the first ASAT activities took place in the 1960s and 1970s (in particular the Soviet campaigns of 1968-1972 and 1976-1982), but the effort made in this field never led to the launch of real large-scale space or counter-space weapons programs.

This is not to say that space was of little interest to the political powers of the time. The analysis of this past effort shows indeed the persistence of public investment with as a constant a military sector that has remained particularly active for the two great powers. On the contrary, the best-established link between the space sector and governmental activity concerned the military sector. This link has been historically dominant with a very early investment by the United States and the Soviet Union in space activities, designed to meet the new needs arising from the advent of nuclear weapons in the 1950s. In the United States, this is even the main factor explaining the considerable budgets that were invested, year after year, in the military space sector until today[1]

In fact, the connection between space and military uses has remained very solid over the decades. A cursory analysis of this evolving connection shows how much stronger it has grown. The initial objectives were not abandoned, but new ones were added, leading to the emergence of new uses of space today. This classification of the different types of military uses of space leads to an interpretation in successive “layers”. This explains the constantly renewed dynamism in the defense world.

1. Today, the United States alone accounts for approximately 50% of global public investment. Despite estimates clouded by the secret nature of certain programs, it can be estimated that they devote nearly 60% of this budget to their military activities.

"Strategic" space: The historical "space-nuclear" link

The military activity, although not the most spectacular component of the space effort, has nevertheless been one of the most constant, if not one of the most important, since the beginning. This was particularly the case in the United States and in the Soviet Union where space activity was directly born out of the rise in nuclear arsenals. It is because in the ten years between 1945 and 1955, the United States and the Soviet Union were able to develop nuclear warheads capable of equipping future ballistic missiles that the political powers of both countries saw the interest in using space.

This relationship between "space" and "nuclear" was not only based on the filiation between the technologies necessary for the development of ballistic missiles and those that would lead to space launchers. It also derived from the need (felt very quickly and formalized in 1955 in the United States on the basis of reports published as early as 1946) to have permanent and invulnerable means of surveillance and possibly of targeting opposing missiles. While airborne means were soon to come up against their limitations in this field[2], space-based means of reconnaissance, warning and targeting became a priority, given the developments in offensive assets. The doctrine of mutual assured deterrence (MAD) has led to the perception that these assets[3] are a sort of life insurance and would thus contribute to making space a mutually recognized sanctuary.

This relationship between space and nuclear weapons has always made the space-based capabilities a means to make better use of nuclear ballistic weapons, not to replace them. As a consequence, and as American historical documents show, programs aiming at weaponizing space, very regularly proposed since the beginning, have had only a limited acceptance by successive political and military powers. A simple political calculation suggested that the strategic cost of space weapons in orbit greatly exceeded their benefit. In the context of mutual deterrence, it was better to accept the reciprocal use of observation satellites to assess the state of the enemy's arsenal, than to run the risk of another confrontation that could endanger these mutual observation capabilities. The very guarantee of nuclear balance implied the possibility of "seeing" the adversary's capabilities and verifying the adherence of the parties to the common rules of arms control. Threatening the existence of these means was therefore not in line with these strategic objectives. In the first place, the dissuasive character of a satellite interception did not seem to have been demonstrated: the "*development of a U.S. anti-satellite interceptor,*

2. Gary Powers' U-2 spy plane was shot down by Soviet air defence in 1960. In August 1960, the first satellite photographs were transmitted to the American authorities..

3. The secret use of which will be hidden behind the expression "national technical means" used by the disarmament treaties.

while technically feasible", indicated Brent Scowcroft, Gerald Ford's national security adviser, in 1976, "*will not contribute to the survivability of U.S. space assets. Other types of U.S. responses are available to deter the Soviets from offensive actions in space.*"[4] On the other hand, it was recognized that any "*preparation for satellite interception would be contrary to the spirit if not the letter of the SALT protection of "national technical means*"[5] with the prospect that stimulating "*satellite interception (would not be in the interest of the United States) since we are more dependent on intelligence from space sources and would have much to lose*"[6]. At the same time, as early as 1960, confidence in the effectiveness of ballistic missiles in delivering their nuclear payloads disqualified from the outset complicated and costly projects aimed at placing missiles in orbit. In the end, everything seemed to dissuade the use of space as a new field of maneuver.

This historical link persists and remains the basis of the military space activities of the world's main nuclear powers, with the continuous development of efficient space techniques for acquiring information on nuclear arsenals and delivery systems. It is also worth noting the particular dynamic R&D efforts made on certain types of sensors (infrared, hyperspectral, etc.), which have benefited from the revival of efforts to develop anti-missile defenses, particularly in the United States. China also appears to be increasing its efforts in this direction, with a recent test of an anti-missile weapon. The publicity that has been given to China is certainly also intended to demonstrate to the world the country's ability to design complex packages for detection, tracking and ballistic interception. As such, it seems legitimate to consider the space developments linked to the Anti-Ballistic Missile (ABM) as a continuation of the "historical" link between space and nuclear in new and very related fields, which we will see with other current military activities.

Space becomes a "force multiplier"

The end of the Cold War brought about a first upheaval for military space, with the addition of a new type of link between space activities and military activity. In the aftermath of a series of regional conflicts inaugurated by the

4. Memorandum from the President's Assistant for National Security Affaires (Scowcroft) to President Ford, 26 April 1976, published in 2009 : W. B. McAllister, *Foreign Relations of the United States, 1969-1976*, Volume E-3, Documents on Global Issues, 1973-1976, Washington D.C., United States Government Printing Office, December 2009.

5. Strategic Armaments Limitation Talks, a treaty signed in 1972 between Richard Nixon and Leonid Brezhnev.

6. Memorandum from the National Security Advisor (Scowcroft) to President Gerald Ford, 24 July 1976, published in 2009 : William B. McAllister, *Foreign Relations of the United States, 1969-1976*, Volume E-3, Documents on Global Issues, 1973-1976, Washington D. C., United States Government Printing Office, December 2009. Discussions were nevertheless beginning to point to the potentially obsolete nature of this position and a decision was finally taken in 1977 to launch an underwater interceptor programme. The test was successful in 1985 but did not lead to any further action.

Gulf War, followed by the Kosovo War, and then by conflicts that occurred more recently in the Middle East, space capabilities were recognized to have gradually contributed to the shaping of the military balance of power in the field. Space is decisive for ensuring superiority in terms of intelligence, but also for conducting complex operations at a distance, when they involve, for example, the use of drones or precision-guided munitions. In this sense, they are frequently combined with the use of air strategy, since they would, according to their promoters, extend its effectiveness by eventually giving rise to the birth of a new "paradigm" in the "art of war". More broadly, the priority military objective, which appeared after the Gulf War and was then confirmed in the Balkans, consisted in setting up new methods of gathering information. This choice reflects the changes in the world of intelligence, which must deal with military objects that are often difficult to identify, because they are mobile and different from Soviet ballistic weapons. The idea of adapting American space assets, which had been prepared for decades to monitor the Soviet adversary, to cater to these new needs gradually took hold. The effort had to be focused on the quality and the pervasiveness of the available means of information gathering, through the progress made in the field of sensors and the progressive implementation of complete space systems intended either for ballistic surveillance or for more traditional observation. Military observation satellites now needed to be both capable of very high precision and flexible enough to monitor large areas. This new emphasis on space in the conduct of military operations has led to an effort to adapt the defense capabilities to new strategic conditions. There has been much deliberation along these lines, particularly in the United States, where the space effort has literally been fueled by the broader effort to overhaul the military capabilities, which began in the 1990s.

This was a founding period, sowing the seeds of the transformations whose effects we see today. From a general point of view, the space sector was perceived as the linchpin of future military architectures, around which forces and their employment should be organized. In line with the sometimes-fantasized idea of a "revolution in military affairs"[7], information from space must be available for use directly at the lowest level of the battlefield, right down to the soldier, who will have to have the most efficient personal communication equipment. One of the many consequences of this new approach must be emphasized, as it now represents a foundational component of the efforts undertaken. The generalization of an architectural or "system of systems" vision, as it is often referred to at the beginning of the two thousands, makes the use of non-military or commercial resources more and more acceptable (apart from the most sensitive programs, such as high precision observation or technical electronic surveillance, for example). Tele-

7. Revolution in Military Affairs, or RMA as it was known at the time.

communications are particularly concerned here, with the multiplication of agreements signed between the ministries of defense and the major operators, which today continue to meet a large part of military needs in this field. This movement has since increased and the appearance of new commercial capabilities, which are increasingly powerful, has only accelerated this trend (whether for telecommunications, Earth observation or signal interception).

A new security dimension emerging

Of course, here again, technical performance does not explain everything, and the broadening of the military use of space resources, as just described, should be seen in relation to a feeling of vulnerability that was even greater in the early 2000s. The perception of new threats implied taking into account terrorist attacks in the various theaters of operations, in the Middle East for example, and a more secure paradigm overall, which was widely promoted in the aftermath of the attacks of 11 September 2001. The change would be rapid in the United States. At the time of the attacks, many observers had highlighted the need for the country to reform so as to better understand these new threats and better ensure the security of the homeland against terrorism[8]. It became essential to streamline and harmonize the means to detect and anticipate hostile actions in military theaters or in the homeland. Omniscience, omnipresence, omnipotence, such are the key words of the defense and security strategy set up by the United States. From a strictly military point of view, the increasingly massive use of space technologies for Earth observation, telecommunications or support for navigation, location and synchronization in the conduct of military operations has first of all led to an increased presence of these techniques at the heart of weapon systems. The guidance of munitions or cruise missiles by GPS satellites is without doubt the most spectacular example of this during these years. The extensive use of GPS-guided JDAM (Joint Direct Attack Munitions) in Afghanistan, Iraq and Syria attests to the importance of space in military equipment policies[9].

The existence of smaller satellites with lower performance, but now available in large numbers, naturally completes this system. Networked, these resources are progressively forming a true space architecture, which must itself interact with other airborne or ground-based information gathering resources. The path is now marked out. The words of Fred Kennedy, the first director of the Space Development Agency (SDA), the agency created

8. One can recall the official report on the attacks of September 11, 2001, *Final Report of the National Commission on Terrorist Attacks Upon the United States*, see https://govinfo.library.unt.edu/911/report/911Report_Exec.htm and the comments it generated at the time.

9. See for example, J. R. Hoehn, S. D. Ryder, *Precision-Guided Munitions: Background and Issues for Congress*, Congressional Research Service, R45996, June 26, 2020, available at https://www.everycrsreport.com/files/2020-06-26_R45996_c107c14859584666078c83063a19f1156c3bc0df.pdf

in March 2019 to prepare for the future uses of space, are worth quoting as they summarize this school of thought, which is now very present in American decision-making circles: "*I have an architecture in mind and it's comprehensive. It's not just one mission area. It's the whole thing.*" It's about looking at the entire satellite offering: "*I'll take those satellites. I'll put payloads on them. I'll fly them. And I hope to tunnel through their networks to get data to the tactical edge, to soldiers, sailors, airmen, marines.*" According to him, we must think in layers: for example, a first capability will have to consist of a "*tracking layer that will go after hypersonic weapons* (...) *(and) we believe that a proliferated LEO layer is the right way to go about it.* (...) *The question is, can we build the payload at cadence.*" In short, "*That is not the exquisite mindset. That's the commodity mindset. I put it up, I see if it works and then I try something again. That encourages innovation. That's happening on the commercial side and is not happening on the national security side. I need to ride that wave.* (...) *This is the time to stand up something like an SDA to take advantage of that synergy with the commercial sector*"[10]. Of course, this vision is still relatively forward-looking and these announcements have not really been followed up. However, these debates show how space technologies have gained a central status in the very definition of weapon systems and the defense system as a whole. The use of expanded logistics for a large number of space systems of various origins is now clearly stated: "*We need a logistics infrastructure that that's not exclusive to the military to civil space or commercial space but a logistics architecture*", as a Pentagon official in charge of space innovation hammered out recently ...[11]

This position obviously corresponds to the analyses of the evolution of the threat mentioned above. But it is also based on the ubiquity and the performances that these new spatial ensembles theoretically allow. The supposed permanence and versatility of a network of multiple sensors of diverse origin refer to the effort made to obtain a better "knowledge" of the security and defense environment. The emphasis is now less on the destination of the platforms than on their capacity to be integrated into a variable geometry system, responding to military needs as they arise. It is worth noting the propensity of the current space industry, and in particular that of the new entrants on the applications market, to play precisely this logistical support card. The well-known projects of mega-constellations in low Earth orbit for telecommunications, and even the efforts made by some commercial operators to set up Earth observation architectures using many low-cost satellites, also bet on a cost/benefit ratio that will encourage the public authorities to consider them as a complement to their resources.

10. S. Erwin , *SpaceNews*, 8, April 2019, available at https://spacenews.com/exclusive-interview-with-the-space-development-agencys-fred-kennedy-how-we-do-things-in-space-has-to-change/

11. S. Erwin , *SpaceNews*, 10 February 2021, available at https://spacenews.com/dod-grapples-with-how-to-bring-in-new-space-technology-to-military-systems/

Whatever the success of this double bet, it is not without consequences on the current dynamics of military efforts on the organization and content of current programs. The prospect of a growing dependence of the military on military space assets, but also on less protected civilian or commercial assets, has for several years rekindled fears of assets being targeted during conflicts. For more than ten years, this perception has been largely reinforced with the return of anti-satellite experiments, which have given rise to a new phase of military developments in space.

The "control" area?

Historically, the international space community has never been able to agree on the measures to be implemented to build true collective security in orbit. The diversity of national space capabilities as well as the plurality of political and military interests have prevented the emergence of true international agreements on the militarization of space. Moreover, the emergence of a new era, which is characterized by the multiplication of anti-satellite systems and their showcasing, deeply divides the international community. For more than 10 years, the major space powers have openly tested ways of inspecting and intervening in opposing satellites, or even destroying them. Unannounced maneuvers are not uncommon[12] and have contributed to further tension with respect to orbiting assets. France itself has taken note of these developments with the publication of a new "defense space strategy" in the fall of 2019[13]. Already in 2008, the authors of the White Paper on Defense and National Security, reiterated that "France, like all its partners in the European Union, is opposed to space becoming a new battlefield. Our country does not plan to acquire weaponry for use in space and will continue its diplomatic efforts for the non-militarization of space."[14] The 2019 French strategy does not go back on this commitment in principle, but it clarifies its intention to find the means necessary for the "active defense" of national satellites. This evolution is another example of the changes that have taken place in a decade, with the balance of power undeniably tense, in an environment that is itself undergoing transformation.

The importance of space for the security or even the economic activity of the great powers now imposes a logic of its own. A new defense posture has been established in recent years, insisting on the protection of objects in orbit and more broadly on the need to control the risks and threats weighing

12. As recently indicated by Florence Parly, Minister of the Armed Forces, by denouncing on several occasions the "visits" of the Russian satellite *Loutch-Olymp* near French telecommunication satellites.

13. Available at https://www.defense.gouv.fr/actualites/articles/florence-parly-devoile-la-strategie-spatiale-francaise-de-defense

14. White Paper on Defense and National Security, p.143 available at http://archives.livreblancdefenseetsecurite.gouv.fr/2008/information/les_dossiers_actualites_19/livre_blanc_sur_defense_875/index.html.

on these objects. This general theme of Space Control is the latest addition to the various military uses of space. Space becomes an environment in itself, in which one imagines acting, maneuvering, defending oneself, etc. The United States has been by far the quickest to discuss these issues, probably because it quickly felt the most affected. More than half (56%) of the functional satellites in orbit at the end of 2020 were American, while Chinese and Russian satellites accounted for just over 12% and 5% of the orbital population respectively[15]. Of course, the unique position of the United States is also linked to the recent activity of companies, such as Space X, which now launch several dozen commercial satellites per shot, with unprecedented frequency (sometimes every 2 weeks)[16]. However, the United States is the leading military player in space, with 212 satellites dedicated to defense, a figure which is more than 20% higher than the total fleet of Russian satellites, both civilian and military.

As a sign of the pivotal nature of this period, the American government decided in the late 1990s that space was a "vital national interest". This update came in the form of an important policy directive signed by the Secretary of Defense in July 1999, which replaced the previous space policy document, which was dated in 1987 and bore the stamp of the Cold War and the Reagan years. This new directive aimed to lay the foundations of the American approach to the new millennium. It called for space to be considered as "a medium like the land, sea, and air within which military activities will be conducted to achieve U.S. national security objectives. The ability to access and utilize space is a vital national interest because many of the activities conducted in the medium are critical to U.S. national security end enoconomic well-being"[17]. Accordingly, "purposeful interference with U.S. space systems will be viewed as an infringement on our sovereign rights" leading the United States to "take all appropriate self-defense measures," for "deterring, warning, and if necessary defending against enemy attack" and for "ensuring that hostile forces cannot prevent the United States' use of space," and for "countering, if necessary, space systems or services for hostile purposes"[18].

15. According to the tally from data collected by the non-governmental group *Union of Concerned Scientists.*

16. The ongoing deployment of Space X's megaconstellation of communications satellites is obviously a major contributor to these numbers. Of the 1061 satellites launched in 2020, 961 were communications satellites. See analysis by keen observer Jonathan MacDowell, Jonathan Space Report, available at https://www.planet4589.org/space/papers/space20.pdf. March 2021 alone saw more satellites launched than in all of 2016 (360, of which 240 belonged to Space X).

17. Memorandum from the Secretary of Defense, July 9, 1999, pp. 1-4. This document accompanied the new DoD Space Policy Directive #3100-10 "*Defense Department Space Policy*" (document available at https://ocw.mit.edu/courses/aeronautics-and-astronautics/16-891j-space-policy-seminar-spring-2003/readings/dodspacepol.pdf).

18. *Op. cit.*

This text is still relevant today. It explains the first budgetary and program orientations taken under the presidency of George W. Bush, strongly amplified under the Obama administration and continued by Donald Trump. Even before any technical dimension, it reflected a new political, diplomatic, economic, industrial and military posture, which has been confirmed over the years. The destruction of one of its own satellites by China during a test in January 2007 certainly seemed to vindicate this approach. For the American government, it confirmed the validity of the heading it had been taking for several years and proved that other countries seemed to be pursuing the same approach. Several episodes in the following years confirmed the increase of risks (for example the episode of the collision between an American Iridium satellite and a Russian *Cosmos* satellite), but also the increase in threats for the American side (Chinese experiments of maneuvers in low Earth orbit in the years 2013 and 2014, or more recently the numerous repeated Russian exercises in orbit) or for the Russian and Chinese sides (American programs of "inspector satellites" in geostationary orbit[19], regularly criticized by these two powers).

In this context, the major space powers now seem to be getting organized in a similar way, i.e., mainly along three tracks:

The implementation of space surveillance which provides for the use of ground- and space-based sensors for improved identification of orbital devices. At this stage, it is necessary to decide on the type of objects to be observed, and then to focus efforts on the monitoring activities that are deemed insufficiently investigated. This aspect implies the consolidation or simultaneous development of ground observation capabilities (optical or radar), the use of existing space resources (use of observation satellites) for the inspection of low Earth orbits, and to develop capabilities for the inspection of geostationary objects. In the United States, it is the notion of "space situational awareness" (SSA) that is rapidly gaining ground. It is above all a question of "operationalizing" the very concept of space surveillance. The aim of SSA is to characterize as completely as possible the space environment and the objects that circulate within it, but also to establish a "map" of the orbital environment (LEO, MEO, GEO), in order to prepare for possible "counter-space" actions[20]. In the operational context, the SSA intervenes at different stages in the "counter-space" action: its mission is to detect and

19. Geosynchronous Space Situational Awareness Program. For an annually updated description of all these programs, please refer to the annual report "*Global Counter Space Capabilities*" of the *Secure World Foundation*, an independent American research center, available for the year 2020 at https://swfound.org/media/206970/swf_counterspace2020_electronic_final.pdf.

20. See in particular the first document on these subjects published by the US Air Force in 2004, which already announces the programs in progress today: Counterspace Operations, Air Force Doctrine Document 2-2.1, August 2004, available at https://fas.org/irp/doddir/usaf/afdd2_2-1.pdf. It is regularly updated.

alert during "space events"[21] ("Find, Fix and Track"), then to locate the threat ("Target and Engage") and finally to evaluate the damage ("Assess"). This convergence of surveillance and environmental knowledge with operations now seems to be the hallmark of modern space doctrines.

- Passive protection of satellites, by establishing a list of protection techniques by type of system, in particular by electronic shielding of civilian and military satellites[22]. Research on electronic components that are more resistant to electromagnetic interference, whatever the origin, or on platforms capable of withstanding the impact of space debris in orbit, all support this strictly defensive posture. More broadly, it is a matter of protecting satellites against any source of failure or accident, whether intentional or not. Platforms with maneuvering and mobility capabilities can also be put in place, which can also be implemented for the related ground segments. The recovery of possible damages can also be ensured by two techniques: redundancy, to replace any element of the information chain, whether it is in space or on the ground, and repair, which requires the implementation of a highly responsive means of space transport, capable of serving all the orbits involved and ensuring the service necessary for repairs or replacements.[23]
- Finally, to acquire direct intervention capabilities in space or on the ground, which has motivated experimental activities in the field of missiles, anti-satellite satellites or high-powered lasers (ground- or space-based) to blind, disable or even destroy enemy satellites. Attacks on space and ground "nodes" (fixed operating stations on the ground) and transmission links (satellite-ground, ground-ground)[24] are preferred. There are various methods, ranging from "killer satellites" to ground assaults of ground control stations by specially trained troops, including "electronic warfare" with computer attacks or satellite jamming. In current doctrines, such capabilities have a warlike function, *i.e.* they go beyond merely banning the enemy from using space-based means to attack. They imply the temporary or definitive annihilation of its assets in order to assert from the outset a "space superiority" in a conflict.

This picture, apart from a few details, now seems to portray the kinds of initiatives undertaken by the principal space powers. Whether they take the form of experiments conducted by the major space powers (for example,

21. "Space events" include *"orbital maneuvers, anticipated and unanticipated launches, atmospheric reentries, laser emissions, solar bursts, and conflicting electromagnetic emissions." (Ibid., p.20.)*

22. In the same sense, one can notice the interest shown for the passive "protection" that the implementation of the networks or architectures mentioned above brings to the space segment, by nature less vulnerable to attacks than individual platforms associated with unique functions.

23. Counterspace Operations*, op. cit*. pp. 26-29

24. *Op. cit.* p. 32

listed in the annual *Global Counter Space Capabilities* report mentioned above) or the concept of "active defense" mentioned in the French defense space strategy, the objective of better protection now goes hand in hand with that of better control.

What impact on collective safety in space?

This advance towards a "controlled" space remains modest. It is still essentially translated by the presentation of future programs and by the realization of incremental experiments. But it must be considered as one of the major factors in the transformation of contemporary approaches to space. It reflects the transformations which marked all space activity since the Cold War, with an undeniable acceleration these past years. The first transpositions into space of military doctrines which previously had been focused on the land, sea and air, accompany in their own way this global transformation of the space activity. In return, the emergence of circum-terrestrial space as a full-fledged defense environment contributes to changing the rules of the game. It is within this dynamic relationship that we can understand the main reason for the efforts to upgrade military postures and organizations in recent years.

Even if it reflects increasingly perceptible international tensions, this movement does not automatically herald the prospect of new conflicts in space. Space remains an environment that is difficult to control and, by its very nature, does not accommodate purely national strategies of domination or control. The actors remain profoundly interdependent and must play on cooperation and collective security. In this context, the new objectives of protection and defense make a successful international dialogue more necessary than ever. Better still, they can reestablish the foundations of a strategic dialogue that remains difficult today. Here, without doubt, the lessons of the Cold War years are worth remembering.