



## Military and Competition in Outer Space: Consequences and Way Ahead

Rajeswari Pillai Rajagopalan, Director, Centre for Security, Strategy & Technology, Observer Research Foundation

The outer space domain has seen significant shifts over the last couple of decades. The emerging security dynamics in the Indo-Pacific region have influenced the major powers to recalibrate their approach towards outer space as well. With growing dependence on space assets for a number of daily applications, from communication and tele-medicine to weather forecasting, navigation and security-related functions, space has become an inalienable part of our lives. Yet the competitive and contested nature of space is possibly making the rules of the road that govern our activities in space a lot more challenging as far as compliance is concerned. The same divisive politics have also made writing new rules of the road to address new and emerging space security challenges problematic. The power tussle and conflicts on Earth are being transposed to the outer space domain as well.

There are several factors that increase military space competition. The first one relates to the increasing number of players. Overcrowding and congestion can lead to several problems, including space traffic management, orbital debris issues, and radio frequency interference. In addition, there are a growing number of intentional attacks on space assets, which are becoming a lot more problematic in maintaining the sanctity of outer space. The increasing number of actors also means that there is greater potential for collisions and accidents, thus making space traffic management a lot more central to the challenges facing

outer space.

A related issue here is that space technology has spread to a large number of countries, and many more countries now use space for military purposes. During the Cold War, this was a phenomenon limited to the two superpowers, the United States and the Soviet Union, and their military use of space was limited to strategic operations including nuclear attack early warning, strategic intelligence gathering and executing arms control agreements. But there is a far heavier role for space in conventional military operations today. And given the deepening reliance on space for a variety of civilian and security operations as well as the interconnectedness between states, any attack on space systems will have its effect felt across multiple domains and geographies. Use of counterspace weapons such as cyber and electronic warfare is even trickier because a disruption or interference in satellite operations even due to a mechanical failure or some error in operations could be misinterpreted as an enemy attack because of the contested nature of major power relations. Any denial of service is going to be interpreted as intentional targeting and depending on the nature of the satellite that has been affected, there could be counter-operations which could lead to an inadvertent escalation and possible conflict.

A third issue is that competition in space is spreading at a fast pace, especially in the Indo-Pacific region. India is a good

example of how the competition is driving and re-orientating its space programme. India initially did not use space very much for military purposes but for more than a decade now, India has developed a number of dedicated satellites for military purposes, including the development of its own version of a GPS, albeit on a smaller scale. Much like India, Japan is also refocusing its space focus, giving a bigger emphasis to the security requirements of space. Similarly, China is also developing at an accelerated pace a full-fledged military space programme under the leadership of its military, the People's Liberation Army (PLA). The establishment of the PLA Strategic Support Force (PLASSF) as part of the military modernisation under Xi Jinping has been particularly concerning to the major Indo-Pacific space powers. That the PLASSF combines the portfolios of space, cyberspace, and the electromagnetic domains make it a potent force to reckon with and adds to the competitive dynamics in the region. China's growing inventory of counter-space capabilities, Beijing's repeated anti-satellite (ASAT) weapon tests and development and testing of its capabilities in the electronic and cyber domains are also worrisome. Even if China is developing these capabilities in a direct competition with the United States, the growing security competition and rivalry in the Indo-Pacific has led to increasing suspicion about Beijing's motivations. This has compelled the regional powers also to respond in like fashion to match China so that they are not vulnerable to any Chinese pressure. The fact that there has been an increase in intentional attacks involving some of these counter-space capabilities have pushed countries like India, Japan, France, and Australia to

increasingly respond with domestic institutional changes and capability developments. India's ASAT test in March 2019 is a case in point. Japan's decision to develop an interceptor capability and the Australian decision to set up a dedicated military space institution are some of the other examples.

The fourth issue relating to the competition in outer space is the dilution of norms. Norms that guided outer space activities for several decades in maintaining the sanctity of space are being overturned. The outer space regime has included many legal instruments, rules and norms. Even though not binding, norms have remained as important as the more legally binding rules. But for more than a decade now, these norms are being broken by some of the newer space actors. The norm to not test ASAT weapons was not a binding commitment, nor the result of any formal arms control treaty or confidence building measure (CBM). Nevertheless, though it was unwritten, a moratorium did exist. However, that was broken by China when it conducted its first successful ASAT test in January 2007. This was followed by the U.S. test, Operation Burnt Frost, in 2008 and thereafter India's ASAT test in 2019. Given the competitive space security dynamics, especially in the Indo-Pacific region, more countries are likely to go down the path of building their own ASATs and other counter-space capabilities. Another norm that has been increasingly violated relates to the non-interference in each other's satellite operations. A growing number of cyber and electronic warfare incidents have hampered the functioning of satellites and other space assets. Dilution of norms is

not taken seriously by some states, who argue that these are not legal measures that have been broken. But the reality is that breaking rules or even norms are encouraging other countries to develop their own military space capabilities. This is a slippery slope that can drive every major space power into a negative spiral unless effective steps are taken.

Finally, underlying all of this is the great power competition and the regional rivalries. China's growing power and its determination to challenge the United States has resulted in intensifying competition between the two. There is little indication that this will wane anytime soon. If anything, China's hyper nationalism is only going to drive that competition even higher. This competition has many facets, including China's efforts to create a territorial buffer along its southern shores as well as take control over global multilateral agencies. In addition to a deepening ideological drift, it would be foolish to assume that this will not have an impact on the existing outer space regime. Several of these factors are also driving regional rivalries as China seeks greater control in the Indo-Pacific region. Many of these countries are advanced industrial societies that have an extensive presence in space. As explained earlier, they are not going to look kindly on China's efforts to control outer space. Many of these countries have the technical ability to counter these efforts and they are already moving in that direction. The consequence is an intensifying competition that will be unlikely to end soon.

The intense competition is also likely to lead to a focus on deterrence as the state approach, especially because new space

governance measures are unlikely to be fruitful in the immediate future.

Therefore, states are likely to have an incentive to develop capabilities that match those of the putative adversaries so as to deter them by threatening to do unto them similar damage. This will lead to greater intensity of competition including the possibility of arms race spirals because all sides will keep a close watch on the capabilities of others and seek to match any advantage that any one side might have. This is obviously not a happy situation, but it is probably inevitable.

Another factor is that as the competition increases, suspicions are bound to grow, a process that is clearly visible. This will make any effort to generate agreement on space governance or even to moderate conflict and competition in outer space very difficult to achieve. So, every proposal made by the other side is likely to be looked upon with suspicion and the competition is likely to spread to making propaganda than making serious proposals to resolving outstanding issues. Because this is a new and emerging competition, this trend is unlikely to be reversed for some time as the early stages of the competition are likely to be most intense. Eventually, all parties may realize the need to come to agreements for mutual benefits even without resolving fundamental issues, but this will take time.

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