



# WHAT DOES THE ASAT TEST MEAN FOR INDIA?



**Gp Capt TH Anand Rao**  
*Senior Fellow, CAPS*

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India has been mulling over the decision to take the plunge in Anti-Satellite weapon (ASAT) capabilities ever since the first Ballistic Missile Defence (BMD) test was carried out in 2006<sup>1</sup> owing to the similarities between the two. However, the negative reaction of the international community to China's infamous ASAT test in 2007 meant that this test had been put on hold pending a clearance from the highest political level in the country. Debris created by an ASAT weapon threatening stability and sustainability of outer space has been a major concern globally. Nevertheless, space powers have continued development of ASATs of different types, overtly as well as covertly. The necessity of possessing such weapons was seen as an effort towards space denial which contributes towards deterrence in the outer space domain. However, the type of ASAT weapons being currently debated – the Direct Ascent Hit to Kill or hard kill weapons – are rarely usable, much like the nuclear weapons, due to the inherent risk of escalation, the effects of loss of services, and the threat of space debris.

Despite the unfavourable consequences of military misadventures in outer space, deterrence in space is just as necessary as with the other domains of war fighting in the emerging scenario in outer space, where freedom of operation in space is the new paradigm. India demonstrated its space deterrence capability in part on March 27, 2019, through a Direct Ascent Hit to Kill ASAT test codenamed mission 'Shakti'. Besides displaying a capability in such ASATs the event also put to test India's Ballistic Missile Defence (BMD) capability by using the under development Prithvi Defence Vehicle-2 (PDV-2) in an exo-atmospheric engagement. Though the event has been downplayed by some in the domestic political circles owing to the circumstances, the fact remains that India is only the fourth country to achieve this feat and it is a matter of pride for every Indian. This is even more so because the effort was a hundred percent indigenous.

India's ASAT test involved the hitting of its Microsat-R satellite at an altitude of 300 km using the PDV-2. The initial estimate of debris count was 270 but now a revised estimate given by NASA administrator Jim Bridenstine in an address on April 02, 2019 puts the debris count at 400, with 60 pieces of debris being actively tracked of which 24 pieces are going above the apogee of the International Space Station (ISS) which is at 408 km. The concern for NASA is clearly the threat to the ISS. Though Jim Bridenstine's apprehensions are understandable, but at the same time the threat is minimal and manageable through conjunction assessments being done by the 18<sup>th</sup> Space Control squadron of the US National Space Defense Center. India, if anything, deserves credit for trying to minimise the debris by selection of a lower orbit for the ASAT test at 300 km which is below the general operating altitude of other satellites and the ISS. It is said that the debris generated will eventually decay and disintegrate in the atmosphere in a period of 45 days.<sup>2</sup> This should be seen as a responsible behavior by an emerging space power, at a time when space debris is the major concern affecting sustainability of space operations. Moreover, the biggest contributors to space debris have been the ASAT tests and unintentional collisions involving the big three in space.

Though there are other forms of ASAT weapons with little chance of creating debris, the hard kill option using the direct ascent hit to kill weapons have the advantage of visible, immediate and permanent effects while being employed on already proven missile platforms and existing satellite tracking systems; the cost involved, though, would be substantially higher. Having proven this technology, India should now focus on the other ASAT options - Directed Energy Weapons (DEW) like lasers and High Power Microwave (HPM), Electro Magnetic Pulse (EMP) weapons, Radio Frequency Interference techniques and cyber techniques for building a wide range of ASAT measures as a credible deterrence in space.

There is another concern which relates to a perceived violation of international norms and treaties. The existing treaties and the Outer Space Treaty of 1967 in particular does not prohibit such an activity in outer space except for the use of weapons of mass destruction. Therefore, India is not in violation of any international law or treaty to which it is a party or any international obligation. Nevertheless, India has been an active participant in global efforts against the weaponisation of outer space and supports international efforts to reinforce the safety and security of space based assets. India has on a number of occasions asserted its commitment towards preserving space as a common heritage of humankind. The Ministry of External Affairs has stated that the test was done to verify that India has the capability to safeguard its assets in space. The tests were done after acquiring the required degree of confidence to ensure its success, and reflect the intention of the government to enhance India's national security. India has seen an accelerated space development programme since

2014.<sup>3</sup> Having achieved its objectives of an ASAT test, India needs to now enhance its efforts at the UN Conference on Disarmament in brokering a globally acceptable treaty which is enforceable and in which actions by states in space are verifiable.

The ASAT capability now available with the major space powers – and with China being a potential adversary – means that, for India, satellites are not safe in orbit. Moreover, there is no embargo on other emerging space faring nations to develop ASATs. Any treaty coming into force in the future will not prevent use of existing ASAT capabilities during conflict. Hence, building a deterrent capability in space is in India's national security interest and needs to be pursued through acquisition of specific capabilities across the spectrum of military space operations, while respecting international norms in space.

*(Disclaimer: The views and opinions expressed in this article are those of the author and do not necessarily reflect the position of the Centre for Air Power Studies [CAPS])*

**Keywords:** Mission Shakti, ASAT, Indian Space capability, Debris, Deterrence, PDV-2

#### Notes:

<sup>1</sup> "India's Ballistic Missile Defence System: All you need to know", February 12, 2017, at [http://timesofindia.indiatimes.com/articleshow/57105516.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst](http://timesofindia.indiatimes.com/articleshow/57105516.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst), accessed on April 3, 2019.

<sup>2</sup> "Will Disappear in 45 Days: DRDO Official on NASA Concern over ASAT Debris", Hindustan Times, April 03, 2019, at <https://www.hindustantimes.com/india-news/terrible-terrible-thing-nasa-on-a-sat-debris/story-Pk6wX2sPCW0sObIjFRHDEN.html>, accessed on April 3, 2019

<sup>3</sup> "Frequently Asked Questions on Mission Shakti, India's Anti-Satellite Missile test conducted on 27 March, 2019", March 27, 2019, at [https://www.mea.gov.in/press-releases.htm?dtl/31179/Frequently\\_Asked\\_Questions\\_on\\_Mission\\_Shakti\\_Indias\\_AntiSatellite\\_Missile\\_test\\_condcondu\\_on\\_27\\_March\\_2019](https://www.mea.gov.in/press-releases.htm?dtl/31179/Frequently_Asked_Questions_on_Mission_Shakti_Indias_AntiSatellite_Missile_test_condcondu_on_27_March_2019), accessed on April 3, 2019.