



Centre for Air Power Studies (CAPS)

Forum for National Security Studies (FNSS)

Title:	SPACE WEAPONS: INDIAN CONTEXT
Chairperson:	Gp Capt M Bandopadhyay, Senior Fellow, CAPS
Speaker:	Gp Capt PA Patil, Senior Fellow, CAPS
Discussant:	Mr Arjun Subramanian P, Associate Fellow, CAPS
Rapporteur:	Mr Aersh Danish, Research Associate, CAPS
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Group Captain PA Patil contextualised his presentation in the backdrop of the growing power capability of India in economic, political and military spheres. He reflected that with the changing times, technological advancements would determine the outcome of conflicts and hence a country with superior military technology differential would have an edge over others. This idea was reflected during the Cold War between the US and the USSR, and it was the space race between these two nations that prompted Asian nations like China, Japan, India etc. to push for space technology.

The space program of India expanded under Dr. Vikram A. Sarabhai, and aimed to be peaceful in nature. It was not launched to compete with the economically advanced nations, However, India no longer stands by this vision statement as India has developed advanced space capabilities and seems to be vying to be a global power. Today, Indian Space Research Organisation (ISRO) has a plethora of satellites operating under its ambit, and the constellation of Indian satellites can be grouped under three categories: the Indian National Satellite System (INSAT), the Indian Remote Sensing Satellite Systems (IRS), and the Indian Regional Navigational Satellite System (IRNSS). ISRO has also developed the Polar Satellite Launch Vehicle (PSLV) and the Geosynchronous Satellite Launch Vehicle (GSLV) to place its

satellites in the desired orbit, and has also undertaken successful and critically acclaimed lunar and interplanetary missions, namely - the Chandrayaan and the Mangalyaan operations in 2008 and 2014 respectively.

Despite its civilian orientation, the Indian space program essentially developed in the context of increasing militarisation of space by nations. The late 20th century saw the use of space assets for military applications by the US, especially during the Gulf War. The growing Space capabilities of China have also fuelled the need to develop a strong space program in India. China has shown rapid expansion in space with development of space based Intelligence, Surveillance and Reconnaissance (ISR) capabilities; Kinetic Kill Anti-Satellite (ASAT) weapons; Parasite-satellites; Nanosatellites; and Directed Energy Weapons (DEW). These developments have led to debates on whether India should develop Space weapons as well?

Gp Capt Patil opined that no state has been known to have placed weapons in outer space because weaponisation of space is a costly affair with high risks of failure. Further, destruction of satellites in various orbits would lead to the issue of space debris, which would be an impediment towards setting up further space installations. DEW systems are still under trials and are yet to achieve technological maturity. Overt weaponisation of space is highly unlikely in the near future. Also, use of space based weapons alone can never lead to victory in war, and the need for the development of conventional weaponry would remain. However, there is immense pressure on India to develop space based weapons due to the rising capabilities of China. The pressure increases in the context of the troubled relations between the two states and also because of the China-Pakistan nexus. A space based test could help enhance national pride, but India has always stood for peaceful use of space.

There are certain challenges that hinder India's space ambitions. A lack of a publicly available space policy or doctrine has led to some ambiguity on our programme, which has been detrimental towards academic and policy research in the field. Low participation by the private players in this sector has impeded growth. The latter was also reflected in the discussion that followed the presentation, where the house debated the idea of greater

participation by the private sector and the Micro, Small and Medium Sector Enterprises (MSMEs) and its benefits. The house also suggested that collaboration between defence research organisations such as the Defence Research and Development Organisation (DRDO) and ISRO can also boost India's space capabilities.

