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# Militarisation & Weaponisation of Space: Where does India stand?

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## ABSTRACT

*The beginning of 21st century has witnessed major shift in the power not only in terms of the political power but economic power. The Asian countries such as India and China are desperately trying to consolidate power in the new world order. China and India are emerging as superpowers owing to the boost in their GDPs and are thus, consolidating military power through economic power. The projection and manifestation of the military might in the light of the technological advancement is not restricted to land and sea and the super powers such as the United States, China and Russia are consistently trying to dominate the outer space by weaponising and militarising the outer space. In the backdrop of changing balance of political power in the new world order, the paper intends to study how far the States have progressed in the weaponisation and militarisation of space.*

*The paper argues that militarisation and weaponisation is the direct result of the desire of the State to consolidate power. The rivalry between the US and China has made India rethink its security calculus; more particularly in the wake of China conducting Anti Satellite (ASAT) Test whereas simultaneously China is trying to encroach upon the Indian territories. However, the unchecked and unregulated weaponisation and militarisation of space pose serious threat not only to the international peace as suspicion and mistrust amongst the States is increasing exponentially but also the critical civilian infrastructure such as communication, navigation, broadcasting which is dependent upon satellites in the outer space is also threatened. In the light of these developments, the paper argues that there is imminent need of regulations to prevent further weaponisation and militarisation of space.*

**Keywords:** India, Space Laws, Militarisation, Weaponisation

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## I. SPACE OPERATIONS IN CHANGING LANDSCAPE OF WAR AND POLITICS

With the downfall of USSR in the end of the 20<sup>th</sup> century, there has been shift in the balance of the power in the Asian Subcontinent. China and India continue to rise to power in competition with each other to dawn the mantle of the power in the Asia and hold the position that USSR once held. With the rise in the GDP of both the countries, there has been proportional growth in the military power of both the countries. In the light of the growth in the economic power it is imperative for both the Asian Countries to project their respective powers i.e. technical, economic and military to consolidate the balance of the power in the new world order.<sup>2</sup> The projection and manifestation of the military might in the light of the technological advancement is not restricted to land and sea and the super powers are consistently trying to dominate the outer space by weaponising and militarising the outer space.

The space which we knew as “the province of all mankind”, the use of which shall be for peaceful purposes and carried out for the benefit and interest of all countries has been diluted to large extent. The space has been used for deployment of satellites that aids civilian in the communication, broadcasting, navigation, disaster management, meteorological forecast etc. and the benefits of which has been reaped by almost every county on this planet. The satellites have also aided in the remote sensing, surveillance, aerial photography, and scientific experimentation which have dual use and nature as these activities are also exploited for military purposes.<sup>3</sup>

These satellites that have aided humankind in the betterment of life services have never been threatened from the space and ground and have therefore, been able to operate freely.<sup>4</sup> The space which was earlier explored intensively yesterday for peaceful and commercial purposes for the benefit of all across the globe, is today explored for militarising and weaponisation to establish supremacy by military planners.<sup>5</sup> The militarisation and weaponisation of the space, apart from being ancillary to technological developments can be attributed to the politico-military events that have unfolded in the past three or four decades wherein the world has witnessed a paradigm shift in the matters of security. The factors such as loss of power by

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2 Singh, R.K., 2012. *India's Option in Space: Militarisation, Weaponisation or Weapons Free Space*. [Online] Available at: <https://usiofindia.org/publication/usi-journal/indias-option-in-space-militarisation-weaponisation-or-weapons-free-space/> [Accessed 29-10- 2020].

<sup>3</sup> Lele, Ajay, 2011. Militarisation of space. *Indian Defense Review*, 23(2). Available at <http://www.indiandefencereview.com/news/militarization-of-space/> [Accessed 29-10- 2020].

<sup>4</sup> Tripathi, P., 2013. Weaponisation and militarisation of space. *CLAWS Journal*, p. 188. available at <https://indianarmy.nic.in/WriteReadData/Documents/Weaponisation.pdf> [Accessed 29-10- 2020]

<sup>5</sup> *Ibid.* at pg. 189

USSR, the rise of fundamentalism, terrorism have raised menacing threats to global peace and security and there is urgent need to equip and arm our security forces for ever-changing warfare.

It is well understood by military leaders across the world that means and methods of the warfare has changed and it is currently being governed by technology, and possessing space technology specifically with respect to asteroid mining, navigation, artificial intelligence provides asymmetric advantage to the nations possessing such capabilities.<sup>6</sup> Command, Control, Communication, Computers and Intelligence, Reconnaissance, Surveillance (C4ISR) systems are required by the military for the purpose of networked warfare and therefore, its importance cannot be undermined. Global Positioning System (GPS) which has been operational since 1989 is yet another special tool in the military arsenal of the States. GPS facilitates accurate targeting through cruise missiles and smart bombs. The network centric warfare relies heavily on the high speed satellite based communication networks in order to improve real time situational awareness. Satellite imaging helps in providing real time feed of the enemy location so that attack can be coordinated by sending location to the cruise missiles and bombers through satellites that are connected to the military internet.<sup>7</sup> In light of the changing landscape of war, these technologies are being developed extensively by the states.

The changing political scenario across the world coupled with the rise of non-state actors threaten peace and security and therefore, the weaponisation and militarisation of the space is a necessary evil. It can also be argued that in the garb of maintaining world peace and security, the research and development in the space technologies is being undertaken by the States as a result of underlying sinister desire to dominate space and have space based systems that can not only destroy enemy targets in the space and ground but also prevent the enemy state from launching satellites. Though weapons are yet to be placed in space as of now, the research is underway by several states to enable themselves for the same.

## II. WEAPONISATION AND MILITARISATION OF SPACE

The weaponisation of the space refers to the placing of space based devices in the orbit that have destructive capabilities. The ground based systems that are designed to attack the satellites in the space or intercept missiles also constitute space weapons however, they are

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<sup>6</sup> Supra note 2

<sup>7</sup> Chopra, Anil, 2020. Militarisation of Space: Imperatives for India. *Indian Defense Review*, 34(4). Available at <http://www.indiandefencereview.com/news/militarisation-of-space-imperatives-for-india/> [Accessed 29-10-2020]

not part of the weaponisation of the outer space as they are not placed in the orbit. Hypersonic technology vehicles that travel in the space to reach the intended target also weaponise the space. Missile defence systems that are being currently deployed by the states, serving dual use, owing to its capability to destroy the space assets as well as ballistic missiles forms the parts of the space weapons.<sup>8</sup>

Militarisation of the space refers to using of the space to support the ground, sea and air based military operations. The assets such as early warning communication system, navigation, command and control, monitoring and surveillance, secure communication and broadcasting for the purpose of intelligence gathering, verification, coordinating an attack are being developed placed in space in order to assist the ground infrastructure of military. These assets prove elemental in improving the communication, strategic and battlefield surveillance as well as accurate pin point targeting of the enemy locations.<sup>9</sup> Therefore, it can be said that weaponisation is a subset of militarisation because there is only a subtle difference between the two. If one is to envision a continuum that runs from operation of satellite for peaceful and civilian purpose to the satellites that perform dual function, to satellites performing only military functions and finally the weapons themselves being deployed in the space, then weaponisation will be achieved when final threshold of the spectrum is reached. In the extreme case the weaponisation of the space would mean deployment of space weapons to space that includes satellite based systems for Ballistic Missile Defense (BMD), Space to Earth Weapons (STEW) and space based Anti-Satellite (ASAT) weapons.

### **III. TRACING THE ORIGIN OF THE WEAPONISATION**

The use of outer space to fight wars is not a new concept. The Nazis consistently strived and invested heavily in rockets that went to space and caused destruction of enemies upon returning. Space had been used extensively for nuclear testing during the 1950s and 1960. However, atomic testing was banned by the virtue of the Limited Test Ban Treaty (1963).

The USSR and the US had started deploying military satellites by late 1960s for communication, reconnaissance, imaging and monitoring ballistic weapons. They also had started developing anti-satellite weapons in the wake of the cold war. During 1960s USSR tried to develop an orbital weapon known as Killer Satellite.<sup>10</sup> The Killer Satellite was developed to approach the space target using the guidance of radar and then explode shrapnel warheads to kill it. However, the project failed due to problems in the guidance system.

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<sup>8</sup> Supra note 3 at pg 193

<sup>9</sup> *Ibid* at pg. 194

<sup>10</sup> Supra Note 2.

The USSR also secretly tested during the late 1960s an orbital weapon known as Fractional Orbit Bombardment System (FOBS) which was to be used to place hydrogen bomb in Low Earth Orbit (LEO) for quickly launching an attack against the ground target.<sup>11</sup> However, FOBS were prohibited by virtue of the Strategic Arms Limitation Talks (SALT II) Agreement of 1979 which prohibited the deployment of FOBS systems. During the period of cold war, there were several reports of US spy satellites being blinded by the Anti-Satellite (ASAT) lasers developed by the USSR.<sup>12</sup> The USSR also used MiG-31 as an ASAT launch platform. The US in 1985 successfully targeted a satellite orbiting at 555 Km by carrying AGM-69 on a modified F-15 Eagle plane.

The US during the 1980s extensively engaged in the weaponisation of the space through its Strategic Defence Initiative also known as Stars Wars program initiated by then President Ronald Reagan. The idea behind the program was to put satellites into the space that were capable of detecting the enemy missiles that were launched and then shoot them down. These space based anti-missiles were developed not as the substitute of the ground defence but as a part of multi defence strategy that would strengthen the ground defence. The defences also included the sea based interceptors that were carried by the ships as well as ground based Terminal High Altitude Defence Area (THAAD), which were designed with the objective of engaging short and medium range missiles.<sup>13</sup>

The use of space technologies was extensively seen during the Gulf war in 1991 and NATO intervention in Kosovo. The advancement in space technologies as well as its use such as space based surveillance, communication and navigation, gave US an asymmetric benefit in the Gulf war. The US owing to its highly capable electro optical and radar imaging satellite was able to pinpoint the location of the enemy and therefore, knew where and when to attack. Due to the extensive use of the space based technologies in the Gulf war, the war is also known as the 'First Space War.'<sup>14</sup>

The technological advancement by the developed states such as the USA and then USSR created geopolitical chain reaction. The rivalry between the USA and China to be superpower is well known in the international political corridors and China often retaliates proportionally to compete in the rivalry. The Sino-US competition further reached new heights when China successfully conducted an ASAT Test in 2007 and destroyed its defunct satellite by using a

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<sup>11</sup> *Ibid.*

<sup>12</sup> *Ibid.*

<sup>13</sup> *Supra* note 3 at pg. 192

<sup>14</sup> Nair, K.K, 2006. SPACE: THE FRONTIERS OF MODERN DEFENCE: Knowledge World p 18.

kinetic warhead of SC-19 Anti Satellite, after three failed attempts.<sup>15</sup> The US responded next year by firing a standard ABM as an ASAT to destroy one of its ageing satellite.<sup>16</sup> Russia has once again started the development of a prototype laser weapon named as Sokol Exheleon.<sup>17</sup> In 2013 China announced that it is going to launch a suborbital rocket carrying a scientific payload to study the upper ionosphere. However, this is being seen as a ploy to test a new ground based ASAT system by the US. Israel has recently made operational its anti-ballistic missile having capability of exo-atmospheric interception.<sup>18</sup> In 2019 China launched a satellite using a Long March 11 Rocket that lifted off from a floating launch pad in the Yellow Sea.

The advancements made by the China in the space technology cannot be solely held liable for creating ripples in the international political corridors. The US have always taken divergent stand when it comes to matters concerning space security. This is evident from the stand of US under the leader of George W Bush when the US wanted to enhance its power by placing offensive as well as defensive weapons into the outer space. Donal Rumsfeld Space Commission in 2001 recommended that '*ensure that the President will have the power to deploy weapons in the space.*'<sup>19</sup> After these recommendations the President Bush withdrew from the 30 year old Anti-Ballistic Missile Treaty with the Russia that had banned the placement of weapons in the space.

It is pertinent to note that the US supports the discussion on the space and disarmament issue however, it is not willing to enter into any negotiations that pertains to the space weaponry. On the other hand China had continuously proposed establishing of an international structure for prevention of space from weaponisation over the past few years and simultaneously worked towards the development of space weapons.

China has ambitious plans when it comes to the space exploration and weaponisation. On an average china is undertaking 20 space program missions every year. The ASAT programs of China include signal jammers, experimental lasers, and land based missiles. Soft landing of a rover on the dark side of the moon has already been achieved by China and now it intends to

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15 William J. Broad and David E. Sanger, *China Tests Anti-Satellite Weapon, Unnerving U.S.*, THE NEW YORK TIMES, January 18, 2007 Available at <https://www.nytimes.com/2007/01/18/world/asia/18cnd-china.html> [Accessed 29-10- 2020].

16 Jim Wolf, *U.S. Shot Raises Tensions and Worries Over Satellites*, REUTERS February 22, 2008, Available at <https://in.reuters.com/article/us-satellite-intercept-vulnerability/u-s-shot-raises-tensions-and-worries-over-satellites-idUSN2144210520080222> [Accessed 29-10- 2020].

17 *Russia's Almaz Launches Airborne Anti-surveillance Laser Project*, DEFENSE WORLD.NET, June 26, 2019 Available at [https://www.defenseworld.net/news/25031/Russia\\_\\_\\_s\\_Almaz\\_Launches\\_Airborne\\_Anti\\_s\\_urveillance\\_Laser\\_Project](https://www.defenseworld.net/news/25031/Russia___s_Almaz_Launches_Airborne_Anti_s_urveillance_Laser_Project) [Accessed 29-10- 2020].

<sup>18</sup> Supra Note 6

<sup>19</sup> *Ibid.*

have a habitable space station known as Tiangong2 online by 2022 and put astronauts on the moon. Further ambition includes Mars lander mission. In 2015 China launched DAMPE which is considered to be the most capable dark matter explorer. In 2016 China launched QUESS which is the world's first quantum communication satellite. Currently, China is engaged in the development of Long March 9 or Changzheng 9, which is a super heavy carrier rocket capable of carrying maximum payload capacity of 140,000 Kg to the LEO, 50,000 Kg to Lunar Transfer Orbit or 44,000 Kg to the Mars.

The perusal of history shows that use of the space assets for advancing military agenda is not a novel concept. The only novelty that can be seen is the use of the space technology to jam as well as destroy the operational space assets of the other states.

#### IV. INDIA IN THE NEW WORLD ORDER

India has always maintained a pacifist approach towards the space security and constantly emphasized on the peaceful and mutual use of the space while opposing the weaponisation and militarisation of space. Satish Dhawan, a pioneer of the Indian space program, upon the initiation of Star Wars Program by the US President Ronald Reagan observed that time would tell whether Indian activities in space would remain exclusively civilian and pacifist.<sup>20</sup> Though it could be argued that opposing stand of India was attributable to its then capabilities.

The stand of India with respect to weaponisation and modernisation changed by the early 2000s in the backdrop of the Kargil war and the fact that Pakistan has begun the acquisition of long range missiles.<sup>21</sup> Sqn Ldr KK Nair, after the success of US led coalition forces in the Kosovo war observed that:

*“While Kargil was characterized by lack of information in all aspects ranging from intelligence on enemy locations to targeting information, weather inputs, etc., Kosovo was characterized by a surfeit of space-based military information for the coalition forces which paved the way for nuanced application of military power and consequently decisive success in battle”<sup>22</sup>*

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<sup>20</sup> Set, S., 2019. *India's Space Power: Revisiting the Anti-Satellite Test*. [Online] Available at: <https://carnegieindia.org/2019/09/06/india-s-space-power-revisiting-anti-satellite-test-pub-79797> [Accessed 29-10-2020].

<sup>21</sup> Rajagopalan, D. R. P., 2019. *India's strategy in space is changing. Here's why*. [Online] Available at: <https://www.weforum.org/agenda/2019/08/indias-strategy-in-space-is-changing-heres-why/> [Accessed 29-10-2020].

<sup>22</sup> Supra note 13 at p 17



The experience of the Kargil war as well as the success of the USA in the Gulf war, NATO forces in the Kosovo by the use of space technology imparted fresh perspective to the India. Indian scientific community and the defence establishment started consolidating the existing framework of the space technologies to fine tune its strategic and tactical plans in the lines of the USA and European countries.

Another driving thrust was the increasing military might of the China in the space technology. The testing of ASAT missile by China in 2007 raised security concerns in India. China and India have been adversaries since Sino-Indian border conflict of 1962 and the territorial, political and strategic animosity continues till date which has further aggravated by the China's claim over certain areas of Kashmir as well as Arunachal Pradesh. The Chinese ASAT test of 2007 rendered the entire Indian satellite fleet in the space vulnerable. India holds the largest fleet of civilian communication satellites in the Asia-Pacific region as well as the largest fleet of civilian remote sensing satellite. These satellites cater to the telemedicine, resource mapping, banking and marine fishing industry and thus plays a major role in advancing Indian Economy. The satellites also provide strategic leverage to the security forces and decision makers by providing and facilitating communication and imagery along the Indo Pakistan Border and in the Indian Ocean Region.<sup>23</sup> Shortly after the ASAT test by the China in 2007 India established a special cell under its Integrated Defence Headquarters.

Indian Space Research Organisation (ISRO) established in 1969, has been primarily recognised for its societal application of space technology. India launched RISAT-2 a spy satellite, developed by Israeli Aerospace Industries as its first step towards the military exploration of space in 2009. The satellite was launched to aid the security agencies to monitor the mountain valleys that connected India and Pakistan and further went to Afghanistan in north to find out terrorist hideouts. India launched RISAT-1 in 2012 with total indigenous efforts having 24X7 all-weather capability thus giving India the ability of continuous surveillance.<sup>24</sup>

The space program which has up until now being dedicated towards the social and developmental cause underwent a paradigm shift and saw a new utilisation for expanding the prowess of its armed forces. Thus, the beginning of the use of satellite by the Indian armed forces towards military application can be said to be starting phase of military leaning of Indian Space Program.

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<sup>23</sup> Supra Note 19

<sup>24</sup> Bagla, P., 2012. *ISRO successfully launches 'spy satellite' RISAT-1*:NDTV

The main launch vehicle of ISRO include Polar Satellite Launch Vehicle (PSLV) and Geosynchronous Launch Vehicle (GSLV). India's space accomplishment include sending lunar orbiter named Chandrayaan-1 on October 22, 2008 and Mars Orbiter Mission that entered the Mar's orbit on September 24, 2014, thus making India the first nation to succeed in the first attempt. ISRO has till now launched 239 satellites including some for foreign countries. ISRO's services for the launch of satellite is most sought after service by the foreign states owing to the cost effectiveness.

The satellites having military application include 15 operational Indian Remote Sensing (IRS) Satellites that have been placed in Polar sun synchronous orbit. These satellites provide data in a variety of spectral, spatial and temporal resolutions. The CARTOSAT-2 satellite takes black and white pictures of the earth in the visible region of the electromagnetic spectrum through state of the art Panchromatic (PAN) camera. CARTOSAT-2A has been specifically designed to cater the strategic and tactic needs of the Indian Armed Forces. GSAT-6 was the second strategic satellite that was placed by the India to provide secure communication to the Indian Armed Forces. GSAT-7 is being used by the Indian Navy for real time communications with its submarines, aircrafts and warships. GSAT-7A commonly known as 'angry bird' was launched in 2018 as communication satellite for the Indian Air Force which is also used by Indian Army Aviation Corps. The satellite is designed to enhance network centric capabilities of IAF by interlinking IAF ground radar network and Airborne Early Warning and Control Aircraft. Indian is also planning to launch a laser based weapon system that can destroy a ballistic missile in its boost phase.

On March 27, 2019 it was announced by the Indian Prime Minister Narendra Modi that India had become the fourth country after United States, Russia and China to conduct Anti Satellite missile test. The feat was achieved following an unsuccessful test in February of the same year. The test was dubbed as Mission Shakti meaning Power and entailed launch of a ballistic missile into the outer space to destroy an Indian satellite that was located 300 Km above the surface of the earth in LEO. The satellite was destroyed kinetically in under three minutes through the sheer impact of the collision rather than a war-head induced explosion by the direct ascent missile.<sup>25</sup>

It was reported that India has adapted its missile defence interceptor known as Prithvi Defense Vehicle Mark-II into the ASAT weapon thereby making India the third country after the USA and China to have achieved and demonstrated the capability for a direct ascent kinetic kill. The technological foundations of the test can be traced to the Indian Ballistic

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<sup>25</sup> Supra note 19

Missile Development program that was established in the 2006. The successful testing of the Agni V intercontinental ballistic missile ICBM on 2012 further paved the way for development of ASAT missile.

The test comes in the wake of the growing military and economic might of China coupled with its expansionist policies through which China is asserting claim on certain Indian territories. Another driving force behind the development of ASAT program was perhaps the efforts of the United Nations to establish an internationally legally binding instrument on the preventions of an arms race in outer space of India wants to be crucial part. This stand of India is evident from the Indian Ministry External Affairs' Press release on the March 2019 ASAT Test: *"India expects to play a role in the future in the drafting of international law on prevention of an arms race in outer space . . . in its capacity as a major space faring nation with proven space technology."*

The reason for India's move to test the ASAT missile in the wake of the announcement of the United Nations to establish an order for prevention of arms race in the outer space can be attributed to the India's bittersweet experience with respect to global nuclear order. Similar to the stand of India with respect to the non weaponisation of space, India was the first country to espouse a ban on the nuclear testing. However, the rest of the states emerged as nuclear power, to India's detriment through the Nuclear Non-Proliferation Treaty without taking any steps towards the disarmament. The global episode of Nuclear Non-Proliferation Treaty taught India that Countries that intend to take advantage of any scientific development consolidate those development first and later on gain a leverage while establishing international regimes or laws that suit their needs in the best way.<sup>26</sup>

After the Indian ASAT Test, Ministry of Defence on July 25-26, 2019 conducted a table top exercise namely IndSpaceEx to assess the threats in the space and the capability of India to deal with such threats. The participants included armed forces of India, DRDO, ISRO and several think tanks. The exercise pertained to taking stock of the military space assets of the countries such as the USA, China and Russia. The outcome was that Beijing possess a major threat to the security interest of India. The exercise helped in better understanding of the loopholes, vulnerabilities and gaps in the space security of India and the ways through which the technological capabilities of India can be strengthened in order to establish an effective deterrence.<sup>27</sup>

Security experts of India suggest that India needs a robust Space Situational Awareness

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<sup>26</sup> Supra Note 19

<sup>27</sup> Supra Note 6

(SSA) capability consisting of radar, optical and laser tracking devices along with satellites in the Geo Stationary Orbit (GSO) and LEO that can carry out the required C4 functions and provide effective internet to the Indian Military respectively. It has also been recommended that that Tracking and Data Relay Satellite System (TDRSS) should be placed in the GSO for carrying out C4ISR functions. In order to meet the all the requirements India need to place at least 16 PSLV, 7GSLV and 7 Agni 5 based launchers every year which would mean significant expenditure on the defence programs as well as building indigenous launch capability.<sup>28</sup>

India has projected its power in the space by testing ASAT missile. A wide array of technological platforms and other types of ASAT's along with the up gradation of the existing ASAT missiles in underway in India. It is significant to note that in contrast to India's policy on the use of Nuclear weapon it has yet to come up with a policy or a doctrine that can establish the framework for military space operations. No state has up until now destroyed the satellite of another state, even after possessing such capabilities. This indicates that possessing of such capability is a deterrence to other states and it remains to be seen if India will be opting for a minimal pacifist deterrence or opt for aggressive deterrence by denying the use of space to other states.

China has already targeted the missiles of the US through cyber and laser weapons as suggested by some reports and is currently engaged in equipping its arsenal with counter space capabilities. China, as opposed to the other states is currently engaged in improving the range of its ASATs beyond is rumoured to be developing orbital weapons with dual use. This move by Beijing is attributed to the great rivalry with the US to dominate not only international markets but also international politics. The power competition is not showing any abatements in the near future in the light of sanctions imposed by the US on the China. Such power rivalry is bound to affect the security calculus of India and therefore, India's Mission Shakti is hardly sufficient but necessary step for deterrence.

## **V. UNITED NATION'S RESPONSE TO THE WEAPONISATION OF SPACE**

India has evaded international criticism by positioning of the target in the LEO as well as not violating any international law in this exercise. International response and acceptance with respect to the conduct of the ASAT Tests is made difficult because there is no consensus amongst the experts regarding the definition of the space debris and its impact. However, the fact remains that a debris free direct ascent kill cannot be conducted and achieved. It is

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<sup>28</sup> *Ibid.*

established principle validated not only by game theory but practise of the international relations that the greater number of voters/actors, lesser the consensus or cooperation. Same principle applies to the activities that are taking in the space arena. The technological and political developments across the globe after the last century, decreasing cost of space exploration, rise of new actors renders irrelevant any attempt to make arrangements for governing space.

The countries while agreeing on one hand to maintain space as common heritage of mankind, tend to differ with one other when it comes to gaining asymmetric advantage by exploring and exploiting space. The differences intensifies during the periods of power vacuum or transition. United Nation shortly after the first satellite was launched started to crystallise its policies on space. In 1959, the Committee on the Peaceful Uses of Outer Space was set up by the United Nations General Assembly. The Committee was set up to review the scope of international cooperation for the peaceful use of the outer space and was expected to study the legal problems that could arise out of the exploration and use of the outer space. However, the committee has yet to yield a significant result to prevent the weaponisation of the space.

Partial Nuclear Ban Treaty of 1963 and Outer Space Treaty in 1967 was signed to avoid the threat of nuclear weapon to space by preventing detonation of nuclear devices in the space. But, by then the USA and USSR had both conducted several nuclear detonations in the space. The salient features of the treaties included exploration of the outer space for the benefit of the mankind and not to place any weapons in the outer space.

The negotiations in the various International forums with respect to space arena have remained unproductive. The Conference on Disarmament (CD), since 1994 have not been able to reach consensus upon the formation of an Ad-hoc committee that can negotiate a convention to prevent the weaponisation of space. United Nations General Assembly in 1981 proposed Prevention of an Arms Race in Outer Space (PAROS) Treaty in order to preserve space only for beneficial and peaceful use by means of imposing prohibition on the use of space weapons. However, the same was vetoed by the USA and China. In 2006 the UN once again proposed Space Preservation Treaty against use of all kinds of space weapon after reserving the rights of the states self defence, however, it was vetoed by the USA. The proposed treaty on Prevention of the Placement of Weapons in the outer space met the same treatment. The two resolutions passed by the UN in December 2014 to prevent arms race in the outer space was also opposed by the US along with the other states. The US being a prominent actor in the space has always opposed any move made by the UN in order to

protect the weaponisation of the space as the same would not be in the best interest of the US military space programs. The US has in fact argued that existing framework of multilateral arms control regime is sufficient and there is no need to address the threat that does not even exist.<sup>29</sup> Alternative proposals made by the European Union as well as the joint proposal of the Russia and China which seeks ban on the weaponisation of the space has also failed due to the lack consensus owing to the ambiguities in the definitions and scope of space weapons.

## **VI. MAJOR CONCERNS VIS-À-VIS WEAPONISATION AND MILITARISATION OF SPACE**

The space may be infinite but the orbit that can be used for placing satellites that rely on them for trajectory is limited. With the launch of several satellites every year by the states, the orbits are getting congested. The defunct satellites, rocket stages and its fragments further add to the congestion all of which makes a space debris. Indian ASAT test was deliberately conducted at LEO so as not create dangerous space debris because at LEO space debris gets dissipated as it drifts towards the earth's atmosphere. However, the space debris at higher altitude does not get dissipated and pose a permanent hazard. In 2007 when the China conducted ASAT test at the altitude of 865 Kms it created a huge amount of debris.<sup>30</sup>

The arms race for the domination of the outer space has created an environment of suspicion, uncertainty, miscalculation, competition and aggressive deployment of the satellites between the states that can lead to a full-fledged war if a slightest misunderstanding arises. Such a situation would inevitably jeopardise the entire network of civilian and commercial satellites along with satellites that are engaged in scientific exploration. The testing of ASAT missiles is already opposing danger to the space-crafts, functional satellites and people by the production of debris. The debris travels at very high speed in the lower orbit. The debris in the LEO that dissipates to the earth's atmosphere possess a danger to the human life and property.

The problem of the debris is further aggravated by the use of the mid-course missile defence that shatters the missile in the outer space. The space based interceptor also poses the same hazard to the space craft and missiles by the production of the debris because the interceptors themselves collide with the existing debris and produce new debris thus creating space based turmoil. The launching of new satellites on large scale to gain asymmetric advantage by the states has increased their reliance on the radio frequencies and need for an orbital path. The

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<sup>29</sup> Supra note 2

<sup>30</sup> Supra note 19

states are under constant fear that such radio frequencies can be intercepted or jammed by the enemy states to the detriment of their security interests. There are also concerns that powerful and developed states such as the US may reserve an orbital slot thus monopolising the already diminishing orbital slots. These actions may become a source of international tension between the states.

## **VII. CONCLUSION**

The perusal of available public data suggests that no weapon has up till now been deployed by any of the States. Space has not been weaponised yet but it has been militarised since the 1960's in quest of power. The balance of power in the new world order is changing and therefore the States such as China are in constant look out for the ways and mean through which its can establish its supremacy in the new world order and emerge as world leader. The developed countries such as the US, Russia and China are in stiff competition with each other and have been investing heavily in the research and development programs pertaining to the exploration and militarisation of space to gain asymmetric advantage. The developed States have shown their capabilities of ASAT missiles to the deterrence one another. India has also joined the race of testing of ASAT missiles and constant research and development for the achieving military objective in the space. India has shunned its doctrine of peaceful and civilian use of the space for improvement of the lives of mankind only, due to the increasing threat that China poses to the security interest of India. The relations between India and China have further strained in the wake of the border dispute between the two countries and therefore, it is imperative that India showcases its might in the outer space to create effective deterrence.

The achievement of India as well as other developed states in militarising outer space as enumerated in this research by no means encourage the states to weaponise and militarise the outer space to the deterrence of the other States. The question that arises for consideration is where does the quest for power in the new world order stop for the states in the absence of International regime for regulation of the conduct of the states in the outer space. Militarisation of space has not only created a sense of mistrust and suspicion in the states but also severely prejudiced the civilian infrastructure that is based and dependent on the satellites for navigation, internet, broadcasting, telemedicine, banking, weather forecasting and communication amongst other things. In the light of the consequences of the weaponisation and militarisation as discussed in this paper it becomes imperative that the states such as the US, China and Israel which have either been abstaining from or vetoing the

UN sponsored efforts, assume collective responsibility to comply with the existing framework such as Outer Space Treaty or endorse such treaties and convention which ensures that weaponisation of the space does not take place.

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