

China can strike India's satellite system despite ASAT test: Report

India must "brace itself for a long-term space competition" says Ashley Tellis

By Ajai Shukla

New Delhi: An analysis of India's March 27 anti-satellite (ASAT) test concludes that it was directed squarely at China, but would not deter Beijing from interfering with, or damaging, India's satellite network in wartime.

The report by Ashley Tellis, which the Carnegie Endowment for International Peace released on Tuesday, argues that, while India has demonstrated its ASAT interceptors can destroy Chinese satellites with kinetic (direct impact) strikes, Beijing's highly sophisticated ASAT programme provides it with several non-kinetic options to disable Indian satellites without physically striking them.

Beijing's ASAT capabilities "include the capacity to mount sophisticated cyber attacks directed at [Indian] ground stations with the intent of either corrupting or hijacking the telemetry, tracking, and command systems used to control various spacecraft on orbit. They also involve huge investments in developing ground-, air-, and space-based radio frequency jammers that target the uplinks, downlinks, and crosslinks involved in either the control of space systems or the transmission of data arising from various space system activities," says Tellis.

Beijing began developing non-kinetic weapons to disable enemy satellites following widespread criticism of its ASAT test in January 2007, which created about 3,000 space debris that will constitute a hazard for decades.

"Beijing has concentrated on developing... mainly low- and high-energy lasers, as well as space-based high power microwave systems as more usable alternatives. Low-energy lasers can dazzle or damage electro-optical or infrared sensors and would be particularly effective against India's earth observation and scientific research spacecraft, most of which are located in low earth orbits," says Tellis.

He argues that China would not take seriously an Indian threat of retaliating against a Chinese non-kinetic strike with a debris-creating kinetic strike, and is "hence not particularly conducive to successful deterrence."

"Ground-based high-energy lasers and space-based high-power microwave weapons on the other hand could, when successfully deployed, permanently destroy the electronic circuitry of various kinds of satellites without creating the unwanted debris usually associated with a physical collision. While such lasers would likely be most effective against satellites in low earth orbits, space-based high-power microwave weapons could target all kinds of space systems even in higher orbits," he says.

Beijing's ambitious star wars programme also incorporates "service satellites" that do not smash into adversaries' satellites, but push them off their trajectory or physically damage them with robotic arms.

"Finally, China retains an impressive capability to target India's master control facilities (and other nodes in its telemetry, tracking, and control network) through both space-based jamming and precision air and missile attacks, while also possessing the capacity to indiscriminately destroy India's (and others') space platforms through high-altitude nuclear explosions. Because the latter would put at risk both Chinese and adversary spacecraft simultaneously, it is unlikely that such operations would ever be preferred by Beijing when it has so many other less risky alternatives available," says Tellis.

Consequently, “India’s kinetic ASAT system has important but limited value: it can deter kinetic strikes on India’s space systems, but this is the least likely eventuality because Beijing is already investing heavily in suppressing India’s (and others’) space systems through less destructive but comparably effective alternative instruments,” says the report.

Meanwhile, China continues to develop kinetic “direct ascent interceptors” such as the SC-19 and its successor the DN-3, which provide “hit to kill” capabilities against adversaries’ high-value space platforms.

Tellis says India has no choice but to develop similar non-debri-causing technologies to be able to “credibly deter Beijing’s space denial programs below the levels of ultimate physical violence directed at various space systems—the gray zone in which more counterspace activities are likely to materialize in the future.”

Calling India’s ASAT test “a shot across the bow to China”, the Carnegie report calls in India to “brace itself for a long-term space competition. If it fails to do so, it will have to contend with the worst of both worlds: heightened threats from China in the face of increasing Indian vulnerability.”

Potential susceptibility of Indian Space Systems to Chinese counterspace activities

INDIAN SPACE SYSTEMS							
Evolving Chinese counterspace systems	Telemetry, tracking, and command stations	Communications satellites	Earth observation satellites (electro-optical infrared)	Earth observation satellites (synthetic aperture radar)	Navigation satellites	Electronic intelligence satellites	Science & research satellites
Cyberattacks	✓						
Space-based jamming	✓	✓		✓			✓
Ground-and-air-based jamming		✓	✓	✓	✓	✓	✓
Ground-based directed energy weapons			✓	✓		✓	✓
Space-based high-power microwave weapons			✓	✓		✓	✓
Direct ascent interceptors		✓	✓	✓	✓	✓	✓
Co-orbital attack satellites			✓	✓		✓	✓
Co-orbital “service” satellites			✓	✓		✓	✓
Ground attack	✓						
Nuclear/ electromagnetic pulse attack	✓	✓	✓	✓	✓	✓	✓

https://www.business-standard.com/article/economy-policy/china-can-strike-india-s-satellite-system-despite-asat-test-report-119041800030_1.html

अमरीकी विशेषज्ञ ने किया आगाह

एसैट परीक्षण से बढ़ सकती है भारत-चीन में प्रतिद्वंद्विता

वॉशिंगटन, 17 अप्रैल (प.स.): भारत द्वारा गत महीने किया गया उपग्रह रोधी प्रक्षेपास्त्र (एसैट) परीक्षण स्पष्ट रूप से चीन की ओर लक्षित है और इससे नई दिल्ली की पेइचिंग से प्रतिद्वंद्विता में इजाफा हो सकता है। एक अमरीकी विशेषज्ञ ने आगाह करते हुए कहा कि भारत को अब खुद विस्तृत अंतरिक्ष प्रतिस्पर्धा के लिए तैयार रहना चाहिए।

गौरतलब है कि 27 मार्च को भारत ने इतिहास रचते हुए निचली कक्षा के एक उपग्रह को जमीन से आकाश में मार करने वाले प्रक्षेपास्त्र के माध्यम से मार गिराया था। इससे देश को वैश्विक अंतरिक्ष शक्ति के रूप में पहचान मिली और भारत ऐसी क्षमता हासिल करने वाला विश्व का चौथा देश बन गया। इससे पहले यह क्षमता केवल रूस, अमरीका और चीन के ही पास थी। कार्नेगी एंडाउमैंट फॉर इंटरनैशनल पीस के वरिष्ठ शोधकर्ता और टाटा चेयर फॉर स्ट्रैटेजिक अफेयर्स के एस्ले जे टेलिस ने कहा, "भारतीय एसैट परीक्षण वास्तव में चीन की ओर लगाया गया निशाना है। अगर यह चुपचाप



भी चले तो भी इससे चीन के साथ केवल प्रतिद्वंद्विता में बढ़ौतरी होगी।"

उन्होंने कहा कि इससे यह बात अब छिपी नहीं है कि अब नई दिल्ली विश्व स्तर पर बड़ी भूमिका निभाना चाहता है। उन्होंने जोर देकर कहा

कि अब भारत को दीर्घावधि वाली अंतरिक्ष प्रतिस्पर्धा के लिए खुद को तैयार करना होगा। उन्होंने कहा कि भारत को अब बढ़ते चीनी खतरों के बावजूद अपनी अंतरिक्ष क्षमता को अवश्य ही बढ़ाना चाहिए।