


Tiny satellites mooted to watch suspicious activity along border

 bangaloremirror.indiatimes.com/bangalore/others/tiny-satellites-mooted-to-watch-suspicious-activity-along-border/articleshow/56007349.cms

By Nirad Mudur Nirad Mudur , Bangalore Mirror Bureau | Dec 16, 2016, 04.00 AM IST

Small military satellites could survey troop movement and terror training bases, says NIAS



Tracking troop movements across international borders, or monitoring new or existing terror training camps is not easy. Satellites passing over target areas for only a few hours can relay time-limited intelligence, while ground-based intelligence gathering cannot always be reliable.

But consider this: A series of eyes in the sky to snoop on unfriendly neighbours or hostile groups 24/7, using space-based electronic equipment on board military satellites to relay intelligence.

This is a suggestion through a study by a Bengaluru-based scientific think-tank to the Indian Space Research Organisation (ISRO). And sources in the space agency say they are giving serious thought to the plan.

The International Strategic & Security Studies Programme (ISSSP) of the National Institute of Advanced Studies has in the study argued that to boost space-based electronic intelligence (ELINT) capabilities of India, ISRO should consider launching a constellation of 15-18 military microsattellites weighing in the range of 10 kg to 100 kg in low-earth orbit with an altitude of up to 300 Km.

These can be launched at a cost range of Rs 33 crore (for 10 kg satellite) to Rs 303 crore (for 100 kg satellite) each, depending on their capacity and payload. This constellation of satellites would enable round-the-clock, real-time vigilance of target areas. That would ensure continuous information on suspicious activities for security agencies to be prepared.

“These satellites can be adapted for optical and radar imaging (through) remote sensing with good resolution. ELINT platforms can also be built around small satellites...and an appropriate constellation of ELINT and imaging satellites can provide 24x7 surveillance of mobile targets,” says the study by ISSSP professor and dean, Prof Rajaram Nagappa.

Nagappa told Bangalore Mirror the idea behind military-specific microsattellites is that although there is a requirement for high capacity satellites, “given ISRO’s own programme requirements and the capacity limitations, ISRO will find it difficult to accommodate all the military space requirements in a timely fashion. For 24/7 surveillance of mobile platforms (the movable enemy targets), a satellite constellation comprising ELINT satellites and optical and radar imaging satellites are required. The constellation will need 15-18 satellites, depending upon the revisit frequency while orbiting the earth.”

And to enable such a constellation, Nagappa has made a pitch for additional locations to launch the rockets carrying these military microsattellites into space.

While ISRO already has its only spaceport at Satish Dhawan Space Centre (SDSC) Sriharikota High Altitude Range (SHAR) at Sriharikota, 80 km north of Chennai, Nagappa says the Abdul Kalam Island (earlier called Wheelers Island) off Odisha coast (used by the Defence Research & Development Organisation [DRDO] to test missiles of all ranges) and Kulasekara-pattinam, almost at the southern tip of Tamil Nadu, can be considered for launching small rocket launchers (called Small Satellite Launch Vehicles, or SSLV), using mobile launch platforms.

Nagappa also advocates private participation in the programme. Though ISRO has not announced anything about taking up the idea, scientists from the space agency, on condition of anonymity, said they are seriously considering it.

Recently, S Rakesh, chairman & managing director of ISRO’s commercial arm, Antrix Corporation, said small and microsattellites would be the large market ahead. “Therefore, we are getting across to as many in the private industry as possible to facilitate technology transfer to industry for building subsystems with minimum investments in partnership with ISRO,” he had said.

ISRO IS READY

Even without looking at additional spaceports, ISRO already has infrastructure and the technology in place to launch more than the entire constellation of these military satellites in one launch. That capability was proved in June when it launched 20 satellites in one launch, while it is aiming at launching more than three times that number – 68 satellites – in one go in the early part of 2017-18 from Sriharikota.