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CHALLENGES FOR IAF IN THE MAKING OF DEFENCE SPACE AGENCY

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The Armed Forces have reached the tipping point for a transition from selective utilisation of space applications to a military dependence across the spectrum of military space applications. Full spectrum utilisation of space which includes operations in space is not far behind. This would require a high degree of coordination between the three services and centralisation of space assets. Though the military space organisation structure would depend much on the doctrine of space utilisation, availability and employment of space assets, space strategy and force structuring, there exists prima facie a case to expand the organisational verticals by creating a dedicated branch within the services to handle the growing role of space in land, sea and air operations.

India's military use of space has seen a growth in recent years with ISRO undertaking development and launch of dedicated satellites for the Armed Forces – GSAT-7 for the Navy and GSAT-7A for the IAF. Moreover, at least 12 satellites are being used for military applications in dual use with civilian applications. It is expected that there will be around 40 satellites for use exclusively by the Armed Forces by 2022. In anticipation of the future military space requirements, a renewed Defence Space Roadmap is being finalised to give a direction to the space ambitions of the Armed Forces. The Defence Space Agency (DSA), Defence Cyber Agency (DCA) and Special Operations Division (SOD) had received cabinet approval in 2013 following recommendations of Shri. Naresh Chandra Committee in 2012.[1] The Government sanction has been received in recent times and the process for setting up these agencies has been set in motion.

The positive movement towards creation of a Defence Space Agency (DSA) as an interim arrangement until a full-fledged dedicated Aerospace Command is in place is undoubtedly a welcome move. But just establishing a DSA would achieve little unless it is accompanied by a new defence space vision which would be an offshoot of a national space vision. The defence space vision should cater to

India's space security needs in the developing global space scenario. The DSA has to set foot in the space arena with a dedicated and trained pool of manpower with an understanding of the joint vision document. The DSA must have an active role in utilisation of outer space within the armed forces. Towards achieving this, there is a need to bring in clarity on the employment philosophy of space assets and applications by the three services. Further, the organisation structure of the DSA itself needs to be outlined to cater for the establishment and manning requirements.

The leadership, organisation structure and management of DSA will be defined by its role in the entire spectrum of space functions. For this, there is a need to draw a distinction between military space applications and military space operations. The former is the present category of utilisation of space by the Armed Forces – an enabling function. The latter - military space operations – is a vast category of exploitation of space by the military, with boundaries that can only be defined by the level of access to space technology and national/ military space objectives. While the former category of exploitation of space for military applications requires a joint services approach due to the limited resources available, military space operations on the other hand would require a professional service specific approach due to the nature of the task and core competency available in each of the services – in this case, the IAF. Some of the areas of military space operations that need to be considered are:-

a) Contribution towards Space Situational Awareness (SSA) through sharing of radar surveillance observations.
b) Space Traffic Management (STM) as a part of any regional STM organisation which would be akin to Air Traffic Management.
c) Space Weather Prediction as an extension of atmospheric weather predictions.
d) Basic defences against ASATs – including DEWs, Cyber Attacks and Electronic Interference.
e) Responsive Launch / Launch on Demand capability for ISR and ELINT using small satellites.
f) Drones and balloons for ISR, ELINT, space observation and airspace observation from near space.

Outer space has been acknowledged as a strategic domain and space assets are strategic assets. In India's case the space assets are presently being managed and controlled by ISRO, and therefore, there has to be a joint utilisation philosophy and integration of efforts at all levels for optimum utilisation of space assets and allocation of space services. This situation may change when the Armed Forces own and operate their own satellites and space objects individually or collectively in the future. The onus of collective military responsibility for any object transiting through the airspace and operating in near space or outer space lies with the Air Force. It is then incumbent on the IAF to play a

proactive role in matters related to space operations – be it monitoring transiting space objects, fulfilling military space requirements or defence of space objects belonging to India. Looking from a different perspective, ISRO is currently undertaking these functions which ideally should be the task of IAF.

The IAF is ideally positioned to take on the role of a lead service in the Defence Space Agency. The primary reasons in support of this argument are:-

a) The similarities between operations in airspace and space.
b) The proximity of the space domain to airspace.
c) Airspace being a medium of transition for all objects destined to and from space.
d) The vast experience and expertise of the IAF in Air Traffic Control and airspace management, which fits in well into space traffic management.
e) The responsibility of Air Defence which extends into space as space itself does not have an internationally accepted definition.
f) The responsibility of Ballistic Missile Defence which extends into outer space.

In sum, it can be said that the Air Force considers outer space as an extension of airspace and near space – a continuum where the Air Force plays a dominant role. The counter argument would be that space also plays a supporting role for land and sea operations as much as for the Air Force. It would, therefore, be prudent to consider that space assets being strategic assets and being managed and controlled by an external agency not related with military activities - ISRO - necessitates a joint utilisation philosophy and integration of efforts at all levels for optimum utilisation of space assets and allocation of space services. While this may sound good in logic, the changing scenario in space will require a shift in India's space security approach in the coming years. Defence of space assets is an inevitable activity. IAF needs to be in the driver's seat from the formative stages of the DSA to steer India's space security requirements in the correct direction. The ball has to be set rolling through a comprehensive vision document.

(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: Indian Air Force, Defence Space Agency, Naresh Chandra Committee, Space Situational Awareness

Notes:

[1] Lt Gen Satish Dua (Retd), Interview with Happymon Jacob on Jan 26, 2019 – 'National Security Conversations', at https://thewire.in/video/watch-indias-tri-service-integration-for-cyber-space-and-special-operations, accessed on Jan 27, 2019.