IT IS CRUCIAL FOR INDIA TO EMBRACE MULTI-DOMAIN OPERATIONS

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In this photograph provided by the Indian Army, tanks pull back from the banks of Pangong Tso lake region, in Ladakh along the India-China border. | Photo Credit: AP

The India-China skirmish on the Arunachal Pradesh border has brought the Chinese threat on the front burner again. This has made External Affairs Minister S. Jaishankar accept that to counter this threat, "...we have a deployment of the Indian Army… that we have never had." The threat had never decreased, but faded in public consciousness due to electioneering, bridge collapses, yatras, G-20, etc. Low-level and geographically restricted clashes will keep recurring. But what this should not do is to lull us into a complacent mindset that accepts such clashes, where the Indian jawan gives back more with sticks and fisticuffs than what he receives, as the likely future conflict scenario with China. The threat, actually, is at the other extreme of technical advancement — in the concept of multi-domain operations (MDO).

The term MDO has entered India's military lecture circuit big time; however, it is being bandied about loosely, with its true characteristics and import being understood by few. MDO is *not* just actions on land, in sea, air, cyber, space and in the electromagnetic spectrum. It comprises operations conducted across multiple domains and contested spaces through convergence of capabilities to overcome an adversary's strengths by presenting it with operational and/or tactical predicaments. This means having a common operating picture across all domains which forms the basis to decide the best tool to address a given task. Hence, it is not one service using capabilities in multiple domains to do a task (as is happening now), but the best positioned and capable operator of *any* service doing it across *any* domain. Thus, an Army coastal missile battery could be tasked to strike an enemy naval vessel detected by the radar of an Air Force aircraft; or an Air Force's armed unmanned aerial vehicle on an Intelligence, Surveillance and Reconnaissance mission could be diverted to use its weapons against an Army target detected by a naval/civilian satellite; alternatively, a cyber weapon could be used. In simple terms, the MDO architecture uses any sensor and the best positioned shooter to accomplish objectives; the technical complexity and the command, control and communication (C3) structure required can well be imagined.

MDO and its C3 structure would have inputs from all sensors to come up with an optimum engagement solution using artificial intelligence. This demands three things. First, all sensors (and other information input sources) must be capable of being hosted on the MDO architecture. Second, all solution providers (executors) must be able to receive inputs and instructions from

the MDO C3 structure and carry them out. And third, if the link to the main structure is not available (say, jammed by the enemy), the mission command characteristics of distributed control would come into play so that operations continue.

This is complicated, for one is talking of pioneering technologies that only nations with a developed scientific base and financial standing can afford. It would require a *de novo* look at doctrine, planning, acquisition, staffing and training. This raises a doubt — does this affect India or is it a first world problem? Should New Delhi be pouring money and resources into an American concept (being progressed by the U.S. aggressively for the past decade) that may not concern us? The answer comes easy when one considers that China, which is attempting to match U.S. military power, is not lagging far; it is closely watching the Russia-Ukraine conflict where Western specialists are helping Ukrainians utilise the power of algorithms to fuse reconnaissance from space and choose the best shooters to strike Russian targets. As an article in *The Washington Post* puts it, "The Ukrainians are fusing their courageous fighting spirit with the most advanced intelligence and battle-management software ever seen in combat." This is MDO, in an abridged form, in action. If left behind, India would be deterred by denial during peacetime itself as Beijing, which has the technology and finances, masters it. India has no choice but to embrace MDO too.

A four-pronged strategy is suggested. First, in the short-term, traditional physical domains must be stabilised, with critical deficiencies of the services being plugged. Second, our C3 networks need to be hardened and protected against cyber threats. Importantly, they need to be linked and synchronised so that seamless exchange of data is ensured. Third, for the long term, a pilot project must be started now so that the true challenge of creating an MDO environment is grasped; presently, it's just western literature driving theoretical discussions in the seminar circuit. The pilot project would identify the technologies required and, equally importantly, an idea of the monies necessary. And finally, to get the fundamentals of MDO right, it is vital to train and educate personnel starting now; incidentally, the U.S. Air Force has a one year-long training course ongoing to help develop "….critical thinking and problem solving skills at the operational level of war" amongst Joint All Domain Specialists, as the trainee officers would be called.

Technology has changed the face of war. History is witness to perils on the battlefield if scientific advances are overlooked. Battlefields too have changed from physical brawls to cyber and precision strikes. But err... if the recent brawls at Pangong Tso, Galwan and Yangtse and the thrust required towards MDO are yardsticks to go by, strategic minds at the higher levels of the military and government have a plateful of imperatives to address. This may not be an era of war, as someone famously said recently, but homilies are for politicians and not for professionals. The proverbial powder must not only stay dry but be upgraded in time.

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