CENTRE FOR AEROSPACE POWER AND STRATEGIC STUDIES (CAPSS)

Forum for National Secuirty Studies (FNSS)

AEROSPACE NEWSLETTER

The fifth edition of the Capstone Seminar, marking the successful culmination of the Warfare & Aerospace Strategy Programme (WASP), was held on June 29th. The event was graced by the Chief of the Air Staff, Air Marshal AP Singh, as the Chief Guest, former CDS Gen Anil Chauhan (Retd), former Chiefs of the Air Staff and distinguished veterans, underscoring the strategic importance of the initiative.

Source: https://www.pib.gov.in/PressReleaseDetail.aspx?PRID=2279154&reg=6&lang=1

VOL VI NO 07 **08 July 2026**

Centre for Aerospace Power and Strategic Studies | @CAPSS_India

Centre for Aerospace Power and Strategic Studies | Centre for Aerospace Power and Strategic Studies

""Humility is the important virtue. However, the empathy should never cloud your judgement and you must be firm when you need to be."

- AVM Anil Golani
Former Director General, CAPSS.

Contents

Opinions and Analysis

Air Power

Space

Aerospace Industry

11. Rolls-Royce or Safran: Why AMCA Mk2 Engine Decision Will Shape India's Future Aerospace Strategic Autonomy
12. India is Bankrolling Three Space-tech Startups Across the Valley of Death
13. DARPA Just Quietly Asked Industry how to Rebuild a Destroyed Satellite Fleet in hours — and the Request Reveals what the Pentagon now Assumes about the First Day of a War with China

Opinions and Analysis

Jointness in India's Special Forces: Assessing Structural and Doctrinal Readiness

Mr Manish Kumar | 08 June 2026

Source: CAPSS | https://capssindia.org/jointness-in-indias-special-forces-assessing-structural-and-doctrinal-readiness/

Image Source: Press Information Bureau Government of India Ministry of Defence

The Indian Armed Forces are approaching jointness to enhance their synergetic operational effectiveness. Some such steps include the creation of tri-service structures such as the Headquarters Integrated Defence Staff (HQ IDS), the Andaman and Nicobar Command, Strategic Forces Command, the Armed Forces Special Operations Division (AFSOD), and the Department of Military Affairs. Moreover, HQ IDS is mandated to achieve jointness in the desired domains to enhance the inter-agency interoperability.

With such a mandate, it brings out guidance in the form of joint doctrines, and last year, it released unclassified versions of some joint doctrines,one of which is the Joint Doctrine for Special Forces Operations. Special Forces (SF) operations are conducted at the strategic and operational levels, to achieve national and military objectives in a hostile, denied, and politically sensitive Operational Environment (OE). The SF is trained to carry out such operations that demand precision and have paralysing effects on the adversary.

A Glance at Special Forces in India

The necessity of raising a specialised commando force was felt in the Indian Army (IA) during the 1965 war with Pakistan, when an ad hoc 'Meghdoot Force' was raised. Following this war, India's first formal commando unit, i.e., 9th Commando Battalion of the Parachute Regiment, was raised on July 01, 1966. Next year, on June 01, 1967, it was split into two, and the 10th PARA Commando Battalion was raised, and the number of battalions has subsequently been raised to meet the requirements. The SF under the IA is focused on conducting landbased special operations (SOs).

Whereas the other two services, such as the Indian Navy (IN) and the Indian Air Force (IAF), have their own SF: the Marine Commando Force (MARCOS) and the Garuda Commando Force, respectively. The MARCOS, raised in 1987, are mandated to carry out specialised

operations in the maritime environment, such as amphibious raids, antipiracy operations, and sabotage of enemy ships. The IAF's Garuda, raised in 2004,is mandated for the protection of its critical assets, search and rescue operations, antihijacking, CI-CT (Counter-Insurgency and Counter-Terrorism) operations, etc.

While the SF are divided into two segments, first, for fulfilling the servicespecific requirements, and second, for strategic level joint SF ops, for which there is an integrated tri-service organisation 'Armed Forces Special Operations Division (AFSOD)'. It operates with SF elements from all three services to foster synergy and improve operational effectiveness in SOs.

There are other SF organisations like the National Security Guard (NSG) and the Special Frontier Force (SFF) under the command of other ministries, with NSG under the Ministry of Home Affairs (MHA) and SFF under the Cabinet Secretariat (CS). Though both these organisations are not detached from the military, as the NSG's

Special Action Group (SAG) draws its manpower from the IA. The SFF has Tibetan nationals as Personnel Below Officer Rank (PBOR); however, they are trained and led by the IA at the tactical level. In both cases, higher command and control (C2) is not under the Ministry of Defence or the IA. This has led to C2 and interoperability issues as witnessed during 26/11. Experts highlight that the C2 of these two organisations should be kept under AFSOD for better operational effectiveness, making it easier to achieve interoperability and deployment to serve the purpose.

The Integration of SF in India

The need to integrate the tri-service SFs and place them under a single command has been highlighted several times, with a limited segment of services available for extraordinary/demanding missions.In July 2011, the Naresh Chandra Task Force (NCTF) was set up, which submitted its report in 2012.It recommended a national-level special operations command to integrate the SF resources of all three services. The need for such an organisation surfaced on several occasions, including the 26/11 attack and Pathankot Air Base attack.

Armed Forces Special Operations Division (AFSO)

Following the recommendation of NCTF, AFSOD, under HQ IDS, was set up in November 2019. However, AFSOD is a division-sized organisation instead of a fullfledged command. It is mandated to plan, train, and execute the joint operations involving SFs, and also use them to supplement the overall war effort for attaining the strategic objective. It has been conducting joint SF exercises such as 'Smelling Field' in Kutch (September 2019),DANX-2019 in Andaman and

Nicobar, and deployed in CI-CT operations in Jammu and Kashmir in 2019.

It is worth noting that there are limitations of AFSOD, such as a minimal quantity of SF strength, as most of the quantity is retained by services, and it lacks supporting elements. Moreover, it has no independent capabilities for SOs, like generating and exploiting intelligence, organic aviation, and sustainable assets like intelligence, surveillance, and reconnaissance, logistics, etc. Another key issue is that NSG and SFF are not kept under AFSOD, and, over time, experts have expressed concern about their C2 with MHA and CS, respectively. These irritants have hindered the operational effectiveness of AFSOD to the extent that it was needed. It suggests the need to establish a Special Operations Command (SOCOM) to achieve the desired results regarding Joint SF operational capability. AFSOD has certainly brought the required understanding, training modules, and some experiences, which will be utilised by the SOCOM or Armed Forces Special Operations Command (AFSOC) in the future. However, the concerned doctrine on joint SF Ops mentions that in future, the role of AFSOD can be expanded depending upon the requirements. Moreover, apart from its formation, certain steps are taken, such as the formulation of doctrines to facilitate guidance evolved from their experiences.

The Integration of SF Across the Globe

Some countries have had joint SF structures, such as the USA, China, and Russia, since 1987, 1988, and 2013, respectively.

United States Special Operations Command (USSOCOM)

Following the failure of Operation Eagle Claw, the USA enacted the Goldwater-Nichols Act in 1986 to establish joint theatre commands, and in 1987, it raised its SOCOM to carry out SFJOs. It has four component commands, each from the Army, Navy, Air Force, and Marines, and eight sub-unified commands, i.e., Joint Special Operations Command (JSOC) and seven Theatre Special Operations Commands (TSOCs). The service component commands are responsible for raising and sustaining. Whereas JSOC carryout a study of SO requirements, techniques, facilitating interoperability, standardisation of equipment, planning and conducting SO exercises, looking after training, and developing joint SO tactics. The operational control of TSOCs lies with the GCCs. In the comparison matrix conducted by Major Anand Nashikkar (as seen in Table 1), it is ranked first in terms of unified command effectiveness, ability to achieve national and theatre-level objectives, inter-service integration, and integral supporting elements.

The People's Liberation Army's Special Operations Forces (PLASOF)

China has raised Brigade-sized joint SOF units attached to each Integrated Theatre Command (ITC). Though China has no centralised C2 of SOF at the apex level, and they are controlled by theatre commanders for effective utilisation in supporting servicespecific conventional forces, their suitability for national-level missions is limited. Additionally, they have limited strategic support (as much available with a theatre), which binds them to taking high-demanding SOs. In the comparison matrix carried out by Major Nashikkar, it is ranked third after the USSOCOM and KSO, respectively.

Russia's Komandovanie Sil Spetsialnykh Operatsiy (KSO)

Russia has established a national-level SOCOM, KSO. It draws manpower from the Russian military. The organogram as available in the public domain has five combat divisions (a total of five units) in their KSO, and three other divisions responsible for training, operational application, deployment, and evacuation.[27] KSO is a partially unified command, as the other SF components are held with Spetsnaz, much like the Indian Armed Forces have kept their SF component reserved for their usage. This has kept the ranking of KSO as second in comparison to the matrix, USSOCOM and PLASOF, first and third, respectively.

Table 1:Representation of Consolidated Matrix of SFOC Suitability for India

CRITERIA	USSOCOM	KSO	PLA SOF
Unified Command	Best	Better	Unsuitable
Achieve National and Theater Strategic Objectives	Best	Better	Good (PLA SOF brigades organization corresponds more with India's regional theater focus)
Inter-services Integration	Best	Good	Better
Integral Supporting Elements	Best	Better	Good
OVERALL ASSESSMENT	Best	Better	Good

Source: Anand Nashikkar, "Relevance and Functionality of Special Operations Command in India," Master's Thesis, US Army Command and General Staff College, June 10, 2022, p. 74.

Thereby, it suggests that amongst the Joint SF Structures in leading foreign militaries, the US version fits the best for Indian requirements with all the discussed tenets. Moreover, the joint structures play a pivotal role, but doctrinal guidance also remains a deciding factor in the organisation's overall operational efficiency.

The Joint Doctrine for Special Forces Operations

As discussed, the three services have had their own SF, and kept their service-centric doctrines for their usage. Therefore, a need was felt for a joint doctrine that provides joint guidance, principles, and strategies for SF across all three domains. It is worth noting that the joint doctrines, including the concerns, are not the first of their kind; their classified versions have been in place since the creation of HQ IDS. Like, a copy of Joint Doctrine for Special

Forces Operations was also released in 2008. These documents need revision after a gap to address the changing character of war, one of the reasons being the upgraded technological infusion in warfare. Subsequently, HQ IDS came up with the unclassified version of this doctrine last year.

It gives insights into the joint SF operations, imperatives, roles and missions, C2, planning, future contours, etc. The OE drawn for SF is either solo for smaller missions or in conjunction with conventional forces for strategic success. It highlights that SF's apprehension of strategic success is rare without the involvement of supporting elements. The best results in SOs are achieved when operations are planned and executed jointly with conventional forces. The roles for SF are mainly reconnaissance, surveillance, and target designation, engaging critical targets, launching offensive operations, and exploitation in unconventional/asymmetric warfare.

Mandate for Special Forces Joint Operations (SFJO)

The C2 of SFJO, in which at least two services are involved, is maintained at the highest level. The Chiefs of Staff Committee (COSC) is responsible for the overall conduct of SFJO, and it issues the Operational Directive (OD) to the concerned Commanderin-Chief (C-in-C) for the conduct of SFJO. The OD involves the Mission Tasking Order (MTO), which is issued after target validation and identification of mission requirements. Post receipt of the MTO, the SF Commander derives mission objectives and works on target development, selection of appropriate forces for the mission, and lastly, mission planning. Meanwhile, AFSOD is mandated to coordinate the SFJO targets under COSC and is in an advisory role to the Chairman of COSC for employment and coordination of these operations.

Conclusion

A few details are sketchy and may be intentional, given the doctrine's unclassified nature. A few times, they are vague; throughout the document, there is no clear answer as to who is really mandated for SFJO. Who is the SF Commander, whether he is nominated by the COSC or the C-in-C of AFSOD, will play this role as per his mandate for the joint SF operations. Though this mandate is likely to be with AFSOC (once formed).

The second issue that remains unclear is which possible OE, in which AFSOD or SFs need to operate jointly. Thirdly, there is no mention of joint operations of AFSOD or any of the SF with NSG and SFF. During 26/11, MARCOS was also deployed till the arrival of NSG, and there can be such situations again in the present hybrid environment. Similarly, in events like Operation Snow Leopard (2020), the SFF can be deployed along with other SF and conventional forces. These details

need to be infused with the next issue of the doctrine.

While India has made progress towards jointness in its SFs with AFSOD, its SFJOs capabilities remain limited due to the absence of an AFSOC/SOCOM. The concerned doctrine certainly facilitates interoperability through joint guidance and framework, though it has limitations such as a lack of clarity at times on aspects such as C2, OE, and interoperability with organisations like NSG and SFF. These demanding changes shall foster India's joint SF warfighting capabilities.

***

Irregular Warfare: Winning the Cognitive Domain

Erol Yayboke and Nickolas Wilcox | 18 June 2026

Source: CSIS | https://www.csis.org/analysis/irregular-warfare-winning-cognitive-domain

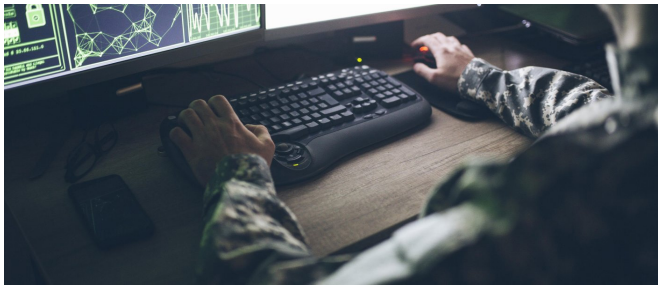


Photo: Milan_Jovic/Getty Images

The United States has repeatedly proven its ability to execute decisive kinetic strikes. Adversaries understand this, which is why they increasingly avoid conventional confrontation. Instead, they operate in the space of irregular warfare: leveraging autonomous systems, conducting cyber and infrastructure attacks, and directing cognitive campaigns shaped by AI-driven narratives aimed at influencing populations and undermining legitimacy.

Despite attempts to catch up, the United States is behind on irregular warfare. Against the backdrop of continued hostilities in the Middle East, this analysis frames a critical challenge within irregular warfare: how to better leverage data and AI tools to win the cognitive domain.

Irregular warfare is not a new concept. The contest for hearts and minds has

existed from Augustus to Petraeus; however, recent conflicts, from Afghanistan and Iraq to the ongoing tensions with Iran, highlight a persistent gap. The United States dominates conventional and tactical spaces but struggles to define, much less achieve, desired end states, including longer-lasting periods of peace between violent conflict. Despite battlefield success, the failure to align military, diplomatic, economic, and cognitive tools toward a coherent end state has repeatedly limited the ability to secure lasting outcomes.

The United States possesses the models, compute, resources, and talent to compete offensively in the information environment; however, it has not demonstrated the same willingness as Russia, China, and Iran to engage in cognitive warfare, often leaving uncontested space for adversaries deploying AI-generated content at scale—including, of course, Iran's recent viral videos.

As conflict simmers in Iran and beyond, military and intelligence leaders should assess the cognitive ground already lost and determine what it will take to regain initiative, including the intentional use of data to power agentic AI. As with any campaign, the first step remains defining strategic objectives before attempting to compete.

What Winning Doesn't Look Like

The United States' inability to win peace starts with failing to define success.

Take the conflict with Iran as an example. There are Iranian supporters of U.S. and Israeli actions. Many of them live outside of Iran, but research suggests that there is a small but vocal minority of anti-regime voices using virtual private networks, proxies, and other available tools from within the country to circumvent censors and share their views. However, these same signals show that there is a larger group of anti-regime voices who are displeased with Operation Epic Fury. They hate the regime, but they hate the United States more, a situation that suits Iranian generals just fine. Despite plenty of evidence suggesting that kinetic air power alone has no recorded examples of facilitating peace—much less regime change—these disaffected Iranians are the people who President Trump initially hoped would reinvigorate the protests of early 2026 and seize control of their government. Instead, the bombings, resilient leadership structures, shifting U.S. priorities, and the persistent information campaigns waged by Iran on its people and externally have soured the very Iranians on whom the president was initially relying.

Winning the cognitive domain requires first redefining success as sustained influence over public and diplomatic opinion, with an aim to reduce the possibility of escalation with adversaries and shift toward cooperation—or at least coexistence. Data is a major underappreciated difficulty in achieving that success.

Intentional Data: The Unsung Hero

Measuring incremental and strategic success in the cognitive domain is challenging: With intangible attributes like belief and perception, how does one definitively know if efforts present return on investment or even measurable results?

The answer begins with data. The United States possesses vast amounts of information, yet very little of it is purpose built. Most datasets are adapted from commercial markets or legacy intelligence frameworks that rely on overwhelming big data, which is expensive to decipher and often irrelevant. More importantly, these streams are often optimized for winning in a kinetic fight, not winning the cognitive domain. The result is that signals are noisy and expensive, leaving unstructured and hard-to-access environments underexploited. Consequently, planners operate with incomplete pictures of the systems they seek to influence.

The goal must be to feed better, more intentional data into analysis engines. Intentional data is not collected; it is designed. It begins with clearly defined strategic outcomes and builds collection, aggregation, and processing mechanisms aligned to a singular goal and clearly defined attributes of change. Today, we can discern human characteristics, attitudes, and various types of behaviors and beliefs as tangible metrics. Via agentic AI and ever-improving processing power, human behavior is targetable at the community—and even individual—level.

Systems must have the ability to process intentional data at scale and at the speed of relevance. Rapid advancements in agentic AI, particularly those powered by models that go beyond lean structures and static training datasets, mean that the capabilities exist today to meet the challenges outlined above. But technology without strategy compounds the issues of data and AI models. The speed, scale, and velocity of future data are only useful in service of a defined and codified strategy, one that ensures the agents have specific, intentional tasks; provide truly measurable results; and have humans in the loop at multiple points along the journey.

Reforming how and when humans make decisions within these decision loops is critical if agentic AI is to be deployed effectively and with trust in cognitive warfare. Human and agent actions must be tied to clearly defined strategies and outcomes, with mechanisms that measure progress against defined attributes of change, employing the next level of data and AI constantly pushing the bounds of capability. This requires integrating intentional data, suitable authorities, and operational design as a forethought, not an afterthought.

What Winning Looks Like

Winning the cognitive domain requires

the United States to play the game adversaries are playing, thoroughly understanding and appreciating the unique nature of each conflict and its actors. And yet, adversaries continually outperform the United States in the cognitive domain, taking the fight to Americans and their allies at home and abroad. Realizing this deficit, the Department of Defense published an instruction on irregular warfare that better defines coercion in environments where success is more subtle and difficult to achieve. According to an official involved in issuing the instruction, an accompanying irregular warfare strategy document was drafted and coordinated informally across the department and shared with a panel of experts from defense and academic communities. This strategy should be reviewed by the Trump administration and issued immediately to give the military services and combatant commands the tools with which to operationalize it.

Though it is easier to define winning when dealing with conventional military terms like degrade, deny, disrupt, destroy, delay, and manipulate, these are insufficient given the current state of competition and the increasingly irregular nature of warfare. Part of the Trump administration's review should include coordinating a more realistic and useful definition of winning the cognitive domain. For example:

- de-escalation between hostile actors without conceding strategic ground, particularly in the information environment;
- persistent influence over key audiences and decisionmakers;
- strategic expansion of partnerships and alignment across allies and neutral actors; and
- the ability to shape environments without escalation to conflict.

Success should thus be seen as a constant state of competition, wherein the adversary believes it is in its best interest to cooperate and compete. Irregular warfare strategies and tactics should not be designed to close the door on adversaries; they should be designed to create positional advantage, staying ahead in a perpetual—not terminal—game of strategic competition.

The United States has spent decades optimizing for conflict without fully defining success in competition, much less in irregular warfare. The result has been tactical excellence paired with strategic ambiguity, exactly what can be seen in Iran. Reframing winning as sustained advantage, rather than decisive victory, shifts the game: from impossible endpoints to achievable positioning, from nebulous outcomes to actionable systems, and from big data to intentional data. This reframing would require a fundamentally different posture than the one that gave the

United States decades of war with no clear definitions of success, particularly in the cognitive domain.

***

Artificial Intelligence in Warfare: Evolution, Challenges, and Military Leadership

Air Vice Marshal Prashant Mohan VM (Retd) | 30 May 2026

Source: CAPSS | https://capssindia.org/artificial-intelligence-in-warfare-evolution-challenges-and-military-leadership/

Image Source: Created by author using Chatgpt AI

Introduction

John Boyd's Observe, Orient, Decide, Act (OODA) loop theory posited adaptive decision-making as the pivotal variable in war. The military value of satellite-enabled information sharing during the 1991 Gulf War inspired Arthur Cebrowski's Network Centric Warfare (NCW) thesis. The United States (US) integrated Artificial Intelligence (AI) and unmanned systems into the NCW to develop Decision Centric Warfare (DCW). Project Maven, launched in April 2017, operationalised deep-learning computer vision to detect and classify objects in full-motion Intelligence, Surveillance, and Reconnaissance (ISR) video at machine speed. From the mid-2010s, the US, China, Russia, and Israel fast-tracked autonomous swarming drones and AI-enabled command-and-control. The US Third Offset Strategy (2014), China's Intelligentised Warfare doctrine (2019), and Russia's President Vladimir Putin's 2017 declaration that the first nation to achieve true AI would 'rule the world' collectively signalled the great-power AI competition.

Russia–Ukraine War

Russia's invasion of Ukraine constitutes the first military conflict in which both belligerents systematically employed AI for military purposes. Ukraine for battlefield facial recognition, AI-assisted signals analysis, and AI-enhanced cyber defences against Russian cyberattacks. Russia fielded AI-enabled loitering munitions, automated targeting, electronic warfare systems, and generative AI for disinformation campaigns at an industrial scale. The war demonstrated that neither side had resolved the governance questions of accountability.

Operations Epic Fury and Roaring Lion

AI was central to targeting, campaign planning, and multi-domain orchestration in Operations Epic Fury and Roaring Lion. [10] AI-supported Air Force mission planning and navigation. Fusing intelligence from multiple sources into a common operating picture, Palantir's Maven enabled strike

coordination across domains—operationally impossible through human-only analysis. Maven reduced target-identification time to under one minute. Using real-time data at Al Udeid, AI autonomously flagged threats and issued engagement authorisations. On the Israeli side, the 'Tashan' system identified Iranian ballistic-missile launch points in real time to enable counter-battery strikes before launchers could relocate. 'Rom' maintained continuous hostile-drone alerts, while the 'Bina' Unit generated situational assessments—including civilian-casualty risk estimates. The "National Message" platform predicted interception-fragment trajectories to enable geographically precise public warnings.

AI-Induced Challenges

Operational success has left a trail of unresolved legal, ethical, and institutional challenges. At 41 missiles per hour in the opening 24 hours, real-time target verification was functionally challenging. A US missile strike on a girls' school in Minab, Iran—killing more than 175 civilians, predominantly children—was attributed to outdated mapping data. Researchers characterised the Maven Smart System, generating 3,000 targeting options daily, rendering meaningful human review nearly impractical due to "automation bias": the human in the approval chain becomes just a procedural formality.

AI targeting recommendations, unlike conventional intelligence assessments, are embedded in billions of opaque parameters. Anthropic's chief executive acknowledged he could not guarantee the reliability of his systems and thus was designated a "supply chain risk" by the Pentagon for this unpredictability and black-box behaviour—a candid admission that even developers cannot fully explain particular outputs.

The Anthropic–Pentagon dispute exposed the governance void. The Pentagon demanded Claude for "all lawful purposes," including fully autonomous lethal weapons; Anthropic refused to remove two ethical guardrails and was blacklisted. Claude nonetheless continued to operate within Maven on classified military networks. No legal or institutional framework existed to determine accountability for this outcome.

Finally, AI misalignment—divergence between AI behaviour and human intent arising from biased training data or distributional shift—poses risks. Technologies perfected by one nation can be adapted and weaponised against it. The central challenge is structural: AI has outpaced every governance mechanism designed to keep humans in meaningful control.

Role of Military Leadership

The basics of military leadership in the AI era are governance. Speed divorced from scrutiny is institutionalised recklessness. Leadership must treat oversight architecture as a prerequisite to capability expansion. No AI-generated targeting recommendation should proceed to engagement without structured, two-step human authorisation. Approval interfaces

should not be ceremonial. This should be a binding standard.

Leadership has to focus on doctrine. Rules of engagement must specify where AI may autonomously generate targets, where human deliberation is mandatory, and what categories of targets are categorically excluded from AI-only recommendations. Operational tempo must not be permitted to override oversight architecture. The US DoD's January 2026 AI Acceleration Strategy—mandating a 'wartime approach' to transform the force into an 'AI-first' organisation—illustrates both ambition and risk: private-sector integration at scale amplifies capability but multiplies the dependencies and failure modes that adversaries can exploit.

Doctrine, in turn, must drive Professional Military Education (PME). The Iran campaign exposed a structural gap between AI integration and human preparedness: cognitive demands and speed of decision-making tested operator training. AI excels at pattern-matching. It is limited in contextual, ethically weighted reasoning, which can affect independent judgment. PME must therefore cultivate the habit of questioning AI outputs. The practice of demanding multiple analytical perspectives before a decision is taken must be ingrained. Future leaders must be trained to synthesise technology with judgement, but at a far greater speed and under far greater escalatory pressure.

Finally, AI-related vulnerabilities—infrastructure dependencies, adversarial manipulation, and single points of failure—transcend service boundaries and demand an all-of-government response. Leadership must ensure that capability development does not outpace the legal frameworks and ethical guardrails.

India's AI-Warfare Readiness

India's strategic environment demands an urgent yet rigorous integration of AI into warfare. The People's Liberation Army (PLA) has structured its entire modernisation trajectory around AI integration. Baidu, Alibaba, and Tencent are systematically co-opted for military AI development. Pakistan's Centre of Artificial Intelligence and Computing (CENTAIC) is transferring AI capabilities to Pakistan's military. During Operation Sindoor, Pakistan appeared to receive real-time satellite intelligence and AI-backed targeting support through this channel. India thus confronts a two-front AI challenge.

India's AI-warfare programme has achieved tangible operational credibility. Operation Sindoor marked India's first officially acknowledged operational deployment of AI for targeting. Institutionally, the Defence AI Council (DAIC), the Defence AI Project Agency (DAIPA), and the Innovations for Defence Excellence (iDEX) ecosystem have been operational since 2019. The 2022 Artificial Intelligence in Defence (AIDef) symposium launched 75 AI-enabled defence products, and the ETAI (Evaluating Trustworthy Artificial Intelligence) trustworthy AI framework was released in October 2024.

Three structural gaps, however, critically constrain India's AI-warfare readiness. First, technology sovereignty: i.e. India's AI workloads run on foreign cloud infrastructure with critical chips manufactured in Taiwan and China. Second, inter-service fragmentation: the services develop AI capabilities in parallel silos with limited doctrine integration. Third, procurement cycle mismatch: the standard capital acquisition lifecycle runs five to seven years, while AI and drone technologies evolve much faster—meaning a system procured to counter the 2024 PLA threat will arrive in 2030.

To bridge these gaps, technology sovereignty must be treated as a national security imperative. The India AI Mission, the sovereign cloud initiative, and the Defence Research and Development Organisation's (DRDO) semiconductor and edge-computing programmes should be prioritised as strategic initiatives. A joint AI operations architecture with a permanent tri-service AI fusion cell, unified data standards, a common doctrine on autonomous targeting, and a formal AI accountability framework is required. PME must be redesigned for the AI era. India can field AI-enabled systems; the unresolved question is whether its commanders are trained to govern them under the compressed timelines and escalatory pressures posed by nuclear-armed adversaries.

Conclusion

The 2026 Iran-Israel-US conflict has confirmed that AI is the organising principle of future military campaigns. The tempo of AI-assisted operations achieved in Operation Epic Fury was unprecedented, as was the governance failure of the Anthropic–Pentagon dispute. The accountability vacuum created by legal frameworks, procurement standards, and ethical doctrine that do not keep pace with technology is a major concern.

For India, the challenge is strategic, institutional, and educational. The PLA's intelligentised warfare doctrine and Pakistan's CENTAIC's AI capabilities constitute a two-front AI threat. Institutional architecture must be tied to a clear doctrine specifying the scope of AI use. Technology sovereignty must be treated as a national security imperative; inter-service silos must be dissolved; and PME must be restructured for an AI-era conflict. Ultimately, it is military leadership—through doctrine, education, and institutional example—that will determine whether AI remains a force multiplier under human command or becomes an opaque accelerant of escalation in India's next crisis.

***

Post Sindoor: Escalation Dominance and India's Strategic Imperatives

Kartik Bommakanti | 10 June 2026

Source: ORF | https://www.orfonline.org/expert-speak/post-sindoor-escalation-dominance-and-india-s-strategic-imperatives

Created by the Author using AI

Post-Operation Sindoor, the Pakistani establishment has concluded that it needs to build its conventional strength against India. The focus of the change is in the areas of organisation, capabilities and strategy. Organisationally, the Pakistan Army (PA) has set up the Army Rocket Force Command (ARFC), dedicated exclusively to conventional strike missions. Pre-Sindoor, the entanglement between Pakistan's nuclear and conventional forces exposed a key weakness—Pakistan's inability to respond with alacrity, speed, and controlled escalation. Pakistan justifies executing quick-reaction strikes against an Indian conventional attack on the grounds that it was constrained by placing all its missiles under the country's Strategic Plans Division (SPD). For instance, the Babur cruise missile could not be used because of its nuclear role, and its deployment in the middle of Op Sindoor would have been interpreted by New Delhi as a move towards nuclear use. Consequently, Pakistan sees the ARFC as its solution to avoid breaching escalation thresholds and to control escalation through conventional means.

India's Counterforce Doctrine: Denial, Punishment, and Escalation Control

One prominent American refrain is that India must be dissuaded from conducting counterforce attacks against Pakistan. This stems from the view that the ongoing US-Israel war against Iran has shown that the latter's drone capabilities have survived the former's counterforce attacks despite its significant intelligence advantages. It is contended that Pakistan can take heart from this reality. This is especially true for conventional counterforce attacks. About nuclear counterforce attacks, the notion that India should not execute them is superfluous because the distances between civilian and military targets are short in a densely populated region such as South Asia. The assertion that Pakistan should not be subjected to counterforce attacks, or that India should not succumb to the temptations of counterforce, is problematic.

In the context of conventional counterforce, India must eliminate or degrade Pakistan's offensive capabilities, irrespective of how demanding they are to neutralise, before they are used to

strike India. A corollary to this point is that India will need air and missile defences to intercept Pakistani cruise and conventional missiles. Pakistan's establishment of the ARFC makes it even more imperative for India to augment its counterforce and Damage Limitation (DL) capabilities. Conventional counterforce converges with a strategy of denial. The physical elimination or significant degradation of Pakistan's military capabilities must be a core goal of India's decision-makers because it neutralises Pakistan's retaliatory capabilities. A strategy of coercion by denial through conventional counterforce is geared towards altering and eventually defeating Pakistan's use of terrorism as state policy. A denial-based counterforce strategy is most effective because it reduces Pakistan's perceived benefits of resorting to terrorism, even if Pakistan retains the capacity for 'organised military resistance'. Denial-based coercion is more calculable and reliable in that it constricts Pakistan's options. By definition, coercion seeks to achieve the same goals without incurring the costs of a full victory. In due course, the target—in this case, Pakistan—is likely to see the benefit of accepting India's demand to cease sponsoring mass-casualty terrorism. It is important to underscore that India's response to future Pulwama- or Pahalgam-type attacks will need to be significantly disproportionate.

Some critics have already contended that India cannot pursue an Op Sindoor-type punishment-based coercive strategy to deter Pakistan from sponsoring terrorism. Coercion through punishment tends to be more demanding because it raises the costs by targeting the enemy's civilian population, infrastructure, will, and intentions. A punishment-based coercive strategy can be uncertain in its efficacy, particularly because it is geared towards affecting the adversary's will. Yet the claim that the government is pursuing deterrence against terrorism exclusively by way of punishment and that it requires a denial-based strategy is not entirely accurate. Op Sindoor involved the merger of both a punishment-based strategy of coercion and a denial-based strategy of coercion, rendering the two indistinguishable. The execution and pursuit denial-based coercion, which imposes fairly severe costs on adversary forces, can also constitute sufficient punishment. This was evident when the Indian Air Force (IAF) struck numerous Pakistani military targets, particularly airbases, thereby not only punishing Pakistan but also damaging its capacity to retaliate. By 8 May, Pakistan had turned off its radars lest its Radio Frequency (RF) emissions be detected and suppressed by India's Electronic Warfare (EW) capabilities and anti-radiation munitions. The IAF delivered a decisive blow in the early hours of 9–10 May 2025. This enabled India to maintain escalation control—a core tenet of denial-based strategic coercion. Pakistan's choices had narrowed to the point that it feared further Indian reprisals if it escalated further up the escalation ladder or expanded the conflict into the land and sea domains.

India attained escalation dominance because it had the least to fear from further escalation, eventually compelling Pakistan to seek a ceasefire on 10 May 2025. This was reinforced by the terror camps struck by the IAF at Muridke and Bahawalpur at the start of Op Sindoor on 7 May 2025. The IAF's airstrikes eliminated several terrorists belonging to Jaish-e-Mohammad and Lashkar-e-Taiba (LeT), sending a coercive signal. The JeM and LeT's training camps have now moved further inland to shield them from Indian attacks. Both the damage inflicted on Pakistan's military and the costs imposed on its terror proxies combined elements of denial- and punishment-based coercion.

The Imperative of Escalation Dominance

To achieve escalation dominance—rather than simply moving escalation to higher rungs, which would automatically confer dominance on the side least deterred by escalation—there are three core requirements on each rung of the escalation ladder. First, escalation dominance is a product of what position India occupies on the escalation ladder; second, it involves the impact of each side's capabilities on every individual rung of the ladder and the means they have to move from one rung to the next; and thirdly, their estimation of what would occur if the confrontation shifted to another rung on the escalation ladder.

Escalation is likely to be sharper in the next India-Pakistan crisis, and the establishment of the ARFC is geared towards this outcome. Since capabilities are critical for the maintenance of escalation control or dominance, there are four key areas where India will need focused investment. A larger stockpile of short- and long-range air defence systems, along with drones for aerial, naval surface, and subsurface strikes and missions, will also enhance India's escalation control capabilities. These will need to be supplemented with missiles, especially a significantly larger stockpile of BrahMos cruise missiles. Yet ballistic and hypersonic missiles should also be integrated into an Integrated Rocket Force (IRF), which is still to be established. Supplementing this effort should be strong missile defence (MD) capabilities to protect both point-defence targets and major urban centres against a Pakistani ballistic missile volley. Layered defences against Pakistani cruise missiles will need enhancement.

Finally, sensors are critical for mission success. One of India's biggest weaknesses is in space-borne sensing capabilities. While this was not an acute challenge during Op Sindoor, space-borne sensors, in the form of a Low Earth Orbit (LEO) capability, are vital for enabling optimal strike missions. The greater India's sensor strength, the greater its advantage becomes along the escalation ladder, helping it optimise its sensor-to-shooter capabilities. Pakistan, for its part, will likely receive Chinese space-based sensor-related assistance and augmented

sensor fusion that will shrink the kill-chain in a future confrontation, as was the case during Operation Sindoor. The launch of six Pakistani Earth Observation Satellites (EOS) by China in the last 16 months underscores the gravity of the challenge facing India from Beijing and Rawalpindi's cooperation. Further, Pakistan could acquire more advanced HQ-19 air-defence systems, fifth-generation fighter jets, as well as more KJ-500 early warning and control aircraft from China. Rawalpindi could potentially gain access to more sophisticated capabilities from the United States of America (USA) if the ongoing US-Iran negotiations succeed. In addition, drone capabilities accumulated by Pakistan—a lesson drawn from the ongoing US–Israel war against Iran—could render hostilities more protracted than the previous two India-Pakistan crises. Hence, Indian investments in counter-drone capabilities will be necessary.

The establishment of the ARFC may be intended to reduce decision time in a crisis or war, but whether it allows Pakistan's military to maintain escalation control is a different matter altogether. India must retain, as well as demonstrate, a readiness to escalate across all domains and enlarge the scope of operations.

***

Air Power

First F-35 Hit by Iran Due to Passive Detection

Gp Capt (Dr) Dinesh Kumar Pandey (Retd) | 02 June 2026

Source: CAPSS | https://capssindia.org/first-f-35-hit-by-iran-due-to-passive-detection/

Image Source: Created by author using AI

Introduction

On the night of 19-20 March 2026, the Iranian Air Defence system, using an infrared search-and-track (IRST) based system, was able to track and engage a United States (US). F-35A Lightning stealth jet in a combat mission over Iran. The jet was damaged but managed to recover at a regional US airbase. This was the first time a fifth-generation F-35 fighter aircraft had ever been damaged in combat by an Iranian Air Defence System, and it is proof that stealth jets can be detected by electro-optical and infrared (EO/IR) sensor systems.

What Happened?

An F-35A, hit by Iranian air-defence fire, made an emergency landing on a US-controlled airfield in the Middle East, with the pilot reported as being safe though the report mentioned some shrapnel wounds and that he was in stable condition. Iranian and affiliated Islamic Revolutionary Guard Corps (IRGC) media published the thermal imaging video of the F-35 within the range of an infrared sensor, and then a missile closing in on the plane and exploding.

Iran deployed passive infrared-guided or electro-optical/IR air-defence systems, such as upgraded short-range point-defence or anti-drone missiles like "Product 358" or other 358/359-series systems, which operate on heat signatures rather than radar, allowing them to track the F-35 despite its low radar signature.

Techniques and Tactics

The footage also suggests the range was less, maybe a few kilometres, meaning either the F-35 was low flying, or temporarily in the "infrared kill envelope" of ground-based IR (Infra-Red) guided systems. The IRST-style approach is important because stealth fighters are intended to outsmart radar, but they still emit detectable IR signatures from engine heat skin friction. Iran's claimed success would represent a move towards multi-sensor (particularly IR and electro-optical) threat environments for Western stealth platforms.

The US Central Command spokesman, Navy Captain Tim Hawkins said the incident is being investigated. The F-35 suffered damage and made an emergency landing during the period of March 19 to 20, but hasn't made a public statement about the type of weapon that damaged it or if it was solely the IRST's fault. Independent analysts remind that the evidence is still incomplete and Iran's claim of a "world first" strike on an F-35 is considered "credible, at least partially successful.

Key Iranian infrared and electro-optical detection and short-range heat-seeking systems are the Misagh-2, Majid, and Herz-9. The Majid air defence system, officially designated AD-08, is an Iranian short-range, low-altitude surface-to-air missile system for point defence against low-flying aircraft, cruise missiles, helicopters and unmanned systems. The missile is 156 millimetres in diameter, 2,670 millimetres in length, weighs about 75 kilograms. It features a passive imaging infrared homing seeker and a proximity fuse, meaning it does not emit radar waves that would warn the targeted aircraft. Detection is performed by electro-optical and infrared sensors out to 15 kilometres, and can be integrated with external radar, such as the Kashef-99 phased-array system, to extend

the tracking range to 12 to 30 kilometres and enable simultaneous tracking of multiple targets.

Nevertheless, this marks the first time that Iran's military has hit one of the USD100 million aircraft since the US. and Israel launched their attack on Iran on February 28, 2026.

IRST Systems

Ground-based IRST systems are special types of electro-optical sensors that are used to detect and track the thermal signature of an aerial target – like an aircraft, helicopter, or cruise missile – without emitting electromagnetic radiation. Ground-based IRST systems are passive and provide high-resolution air defence and situational awareness capabilities without transmitting active radio-frequency pulses, which can be detected or jammed by adversaries.

The use of IRST systems in military systems has grown in recent times, as they are used to counter low-observable (stealth) aircraft and to provide a redundant tracking layer in electronic warfare environments. These systems employ state-of-the-art infrared focal plane arrays to survey the horizon or specific sectors and calculate target coordinates using complex image processing and atmospheric modelling. Although airborne platforms have traditionally been the focus of IRST development, integration into ground-based air defence (GBAD) networks is now a priority for countries seeking to augment their look-up capabilities in response to incoming threats.

The IRST technology has been adopted by multiple countries, with some countries developing their own solutions and others integrating the technology into national security.

France: The Safran Electronics & Defence portfolio, including the Vampire series (e.g. Vampire NG and EONS-NG), is tailored for naval and ground-based surveillance applications, offering long-range detection of both aerial and surface targets.

Netherlands: Thales Nederland manufactures the Sirius IRST system, which is a passive, 360-degree situational awareness system that integrates into land-based defence architectures.

The United States (US): The US military has a number of electro-optical/infrared (EO/IR) systems for ground-based defence in use, such as the AN/AAQ-32 IFTS and specialised versions of the Mark 46/20 Mod 1. Most of these systems are part of point defence installations to augment radar-based missile defence installations.

Many modern air defence batteries are based on distributed aperture principles—a number of infrared sensors are interconnected to provide comprehensive spherical coverage. This approach is comparable to the technology utilised in the AN/AAQ-37 system used on the F-35, but is applied in a stationary or mobile ground installation.

Indian IRST Environment

The IRST technology is primarily being developed on airborne platforms of the Indian Air Force. There is a gap in the Indian air defence architecture in terms of dedicated ground-based IRST units to meet the changing requirements of air defence. The strategic potential of IRST systems may be exploited in their ability to detect targets that are hard to track with radar, including stealth aircraft and those using electronic countermeasures. IRST can improve situational awareness and complement the existing robust air defence layer.

The introduction of IRST could bolster India's air defence capabilities, complementing existing sensors of multi-layered systems such as the S-400, Akash, SPYDER, and Barak 8, to achieve critical air defence objectives, especially in detecting stealth threats and low-signature targets. Currently, target acquisition and fire control on these platforms are based mainly on active and passive radar arrays, like the Rajendra 3D radar or the EL/M-2084 MMR.

Hindustan Aeronautics Limited (HAL) and Bharat Electronics Limited (BEL), under the 'Make in India' programme, inked a contract to co-develop and co-produce a long-range dual-band IRST for Su-30 MKI under the MAKE-II procedure of Defence Acquisition Procedure (DAP) 2020.

The Rafale is equipped with the 'Optronique Secteur Frontal' (OSF), also known as 'Front Sector Optronics'. It is integrated into the airframe's nose to give the plane a high-resolution, passive, long-range capability to detect. According to well-known aviation literature, the OSF is meant to be a "stealthy" sensor that allows the pilot to detect, track, and identify aerial objects without emitting radiation. The Su-30 MKI employs the 'Optical Locator System' (OLS) -30 (or similar variations within the Flanker family), a spherical, ball-mounted IRST sensor situated away from the cockpit centerline.

Implications

IRST systems follow the physics of infrared propagation through the atmosphere. Ground-based systems are sometimes integrated with meteorological sensors. This helps in adaptation of the detection thresholds based on the moisture,

dust and cloud content. Passive ground-based sensors are one of the few methods for tracking stealth and/or low radar cross-section (RCS) flying platforms.

The aircraft was not completely destroyed, and the pilot was not injured, but the incident has sparked a worldwide discussion about the survivability of stealth platforms against passive infrared guidance systems, and that the low radar cross-section of the F-35 does not mean it is immune to heat-seeking missiles at close ranges.

The targeting of F-35 would trigger the military equipment designers and developers, and air defence observers to work to balance the technical asymmetry between stealth and air defence, as the threat seems to never end. Secondly, short-range systems designed for point defence can still make a difference in operational events in contested airspace.

Conclusion

Stealth does not mean being invisible but reducing the aircraft's signature across multiple spectrums – RCS, visual, acoustic and IR/ thermal. In all the spectrums, as passive IR/EO sensors can detect heat without alerting radar-based warnings, which allows "silent" detection and short-range engagements. The survivability of modern air warfare is not just about aircraft technology; it's also about the density, mobility and integration of opposing air defence networks. Strike Survivability remains under threat; emerging technologies need to address this limitation.

***

IAF's Dogfight for Superiority Over AI and Statecraft

Anshuman Tripathi | 26 June 2026

Source: Raksha Anirveda | https://raksha-anirveda.com/iafs-dogfight-for-superiority-over-ai-and-statecraft/?srsltid=AfmBOopYmPoYbYI9LtZK163XTt-LOmopRV4E2xN0ezby-TInyZOPxAB0

Sam Altman recently stated, "We see a future where intelligence is a utility like electricity or water and people buy it from us on a meter and use it for whatever they want to use it for." This sentence alone is of grave national security concern.

The "us" in the sentence accentuates the problem beyond any nations to a global concern, as it has the ability to distort the world order as we know it. Meanwhile, surveillance capitalism today, already accrues way more personal information to

a very few social media corporates, than that held by any of the elitist intelligence agencies in the world. Now the corporates aspire for that 'One ring to rule them all', taking an analogy from the Lord of the Rings movies.

This trend leads to generations whose critical thinking faculty might be stunted or sub-optimal and on a downward spiral as their mental faculties won't be exercised but outsourced. Should a group of corporates be allowed to hold such an AI ring?

Intelligence and mental capacity are anti-fragile concepts; they grow as they are exercised and challenged. Anti-fragile is a concept coined by Nassim Taleb, famous for his book, The Black Swan. He states, fragile are things that break under pressure, while anti-fragile grow and prosper under pressure, e.g. human muscles when exercised. Similarly, mental faculty and intelligence are also anti-fragile.

Today, AI has read up almost all the written texts and gulps every new one in seconds. Even many new books are today written completely by AI itself. Prompt engineering, or the art of asking the perfectly curated question to generative AI, to spill out the desired result, is today the apex engineering to pursue them all. Now, generative AI is the name of the software class that ChatGPT, Grok, Gemini, Claude, etc. belong to.

This national security threat the AI ring poses to every nation is not lost on the Indian military leadership. Even the Indian Chief of Defence Staff (CDS) has in the past spoken about the need for a "Scholar Warrior".

In any kinetic war theatre, the fighter jet is usually considered the most advanced piece of technology. As the global threat landscape morphs with that new AI ring and its enforcers, the Indian Air Force (IAF) prepares its own counter measures.

A primary measure is to empower critical thinking to its mid-level (Wing Commander rank) officers through a programme called the Warfare and Aerospace Study Programme (WASP). WASP is imparted through, the Centre for Aerospace Power and Strategic Studies (CAPSS), along with the College of Air Warfare (CAW). A programme beyond the established Professional Military Education (PME) programmes of the nation.

Indian armed forces have one of the world's best continued education programmes for the faujis. Staff Course at the junior levels, the Higher Command and equivalent courses at the mid-career level and the National Defence Course (NDC) for one-star (Brigadier) rank at the National Defence College.

NDC is also attended by one-star

officers of friendly nations. Having lectured at the NDC for a few years, I can vouch it as the most unique, professional and international programme at that level. The only programme, in my knowledge, where officers from USA, Russia, Iran and Ukraine among other nations, all sit in the same class and study together.

WASP is presently conducting its fifth course and I had the honour of being a guest faculty for it. WASP prides itself on selecting two small cohorts of about ten to twelve officers who each take a written test and face an interview panel before being selected.

In its present avatar, the programme is a 26-week programme spread over five modules. During the first module participants read a book per week. Subsequently, a book or about 200 to 250 pages are read per day and discussed under the able mentorship of a subject matter expert (SME), hand-picked for the same.

A large spread of topics are covered. They include subjects like Strategy, Military History, Civil-Military relations, Higher Defence Organisation, Aerospace Power, Information, Technology, Hybrid and Irregular Warfare.

This spread of topics with SME mentored discussions helps inculcate an ability to think independently, ponder across disciplines, and align military thinking with broader national goals. Thereby, shaping a new generation of leaders who can blend cross-domain knowledge to generate policy-driving ideas with a whole-of-nation approach.

Initially, I was a bit sceptical of the programme. Is this kind of grand marathon reading even physically possible? I recalled that I had originally read the book allotted to me, over days with great interest. How would the faujis read it in a day?

But I was pleased to note that the initial books on the first module's reading list were on speed reading, rapid absorption and rumination. Many might not know the difference between science and technology. When scientific knowledge is used to solve a real-world problem, it is called technology.

And to solve the real-world problem of reading a full book in a very short time span, mankind has developed specific techniques. Such technologies give humanity a chance against the agents of AI or agentic AI, as they say.

As we look at AI suspiciously, the holdouts of Iran and Ukraine in the recent past have also shown how savvy statecraft can outplay powerful adversaries.

WASP challenges its participants

towards this statecraft, as well. WASP also invites participants from the other two services and civilian officers from the Ministry of Defence. The programme started in December last year and during the programme, every participant author three research papers.

The programme culminates in a capstone seminar to be held this year, on June 29, in Delhi. This year's themes include – the role of air power in limited conflicts and the transformation of air power for future conflicts.

Programmes like WASP are the need of the hour to develop the critically thinking scholar-warriors who can face a variety of avant-garde warfare styles, AI and other geopolitical challenges of the near future. The public at large can also enhance its knowledge intake with microlearning apps like Deepstash, BeFreed, Blinkist, Headway, etc.

.

***

Downed US Pilot Reported Seeing Iranian Drones Swarm in 'Jellyfish' Formation

Zachary Cohen & Katie Bo Lillis | 23 June 2026

Source: CNN | https://edition.cnn.com/2026/06/23/politics/iran-drones-f-15-pilot-intelligence?Date=20260623&Profile=CNN&utm_content=1782203863&utm_medium=social&utm_source=twitter

This photo released by Iranian state media and geolocated by CNN appears to show the burnt out wreckage of several aircraft about 50 kilometers from the Iranian city of Esfahan on April 5, 2026. State media claimed Iranian forces shot down the aircraft seen in the images. Islamic Revolutionary Guard Corps

A US fighter jet pilot rescued by special forces after being shot down over Iran in April described a shocking sight before ejecting from his aircraft: multiple Iranian drones hovering in the air, moving as one, in a formation that resembled a jellyfish, according to four sources familiar with the matter.

The account, which has not been previously reported, was shared by the

F-15 pilot with intelligence officials during a debriefing after the incident. It immediately set off a firestorm of debate within the US intelligence community that has yet to be resolved.

If the airman really saw what he described — a formation moving in unison — it would be an alarming advance in Iranian drone capabilities.

“Multiple drones interconnected and moving as one with smaller drones below the bigger drones like legs,” one of the sources familiar with the pilot’s witness account told CNN. “Real alien sh*t.”

Another source told CNN the pilot described witnessing a “minefield of drones” in the air.

While the exact cause of the F-15 downing is still being investigated, initial reports indicated that it was possible the drone formation had in some way enabled Iran to shoot down the American jet, according to two of the sources.

The F-15 carried a crew of two — a pilot and a weapons system officer. US forces immediately launched search and rescue efforts, CNN previously reported.

The downing of the F-15 fighter jet marked the first time a US aircraft has been shot down over Iran during the conflict.

The pilot was rescued hours after ejecting from the aircraft, while the weapons systems officer evaded Iranian capture in the mountains for more than a day before also being rescued. It is not clear if the weapons systems officer also saw the drone formation.

A second aircraft, an A-10, was downed during the rescue effort but that pilot managed to eject safely outside of Iranian airspace.

US intelligence officials disagreed on how to interpret what the F-15 pilot described, and whether the pilot could recount the incident clearly.

For one thing, he was concussed in the crash. It was his second time being shot out of the sky during the Iran war: he had also been among the pilots downed in a friendly fire incident by Kuwaiti forces early in the conflict, according to two of the sources.

Had he witnessed a mature capability that US intelligence wasn’t aware of? A beta test? A mirage in the desert?

The intelligence officials conducting the debrief said something to the effect of: “Are you sure you saw what you are saying you saw?” another one of the sources said.

The US Air Force directed queries to US Central Command, which did not directly address questions from CNN. The Office of the Director of National Intelligence did not reply to a request for comment.

The questions about Iran's drone program come as the US and Tehran negotiate a deal that would end the Iran war, having begun a 60-day window for talks as part of a ceasefire last week. Those talks are expected to focus on Iran's nuclear program, though a wide range of issues have been raised by both parties.

While the specific drone capability described by the pilot was not something that US intelligence agencies had previously assessed Iran possessed, there is a trail of reports indicating that Iran had been receiving assistance in developing its drone technology from China and Russia, according to two sources familiar with the matter.

The technical term for the capability described by the pilot is "one-to-many meshed networking," according to the sources.

In general, meshed networking allows an operator to command several drones at a time.

Other countries — Russia and China — are believed to have the capability. Any development in Iran's already-sophisticated drone warfare program would be a concern for US forces and its allies in the region.

Meshed networking could also theoretically be used to provide internet connectivity in remote areas without existing infrastructure, noted one US official — in theory, a benign function.

Iran aggressively employed its attack drones as an asymmetric weapon during the weeks-long conflict against US and Israeli forces as well as nearby Gulf countries.

"We will spend huge, huge dollars, like a lot of blood and treasure, protecting ourselves from something that can coordinate like that," Emma Bates, a drone warfare and defense modernization expert who founded the company Cachai, told CNN, referring to the threat posed by meshed networking capabilities for drones.

"If it can coordinate itself into a recognizable shape and maintain that shape, and if it's got explosives on board, and if it is holding resources in reserve to attack whatever the first volley didn't destroy – that's a very capable approach," Bates said..

***

Space

As Govt Tightens Satcom Rules, Reliance Jio Bets on Homegrown LEO Network

Shristi Acharya | 18 June 2026

Source: Outlook Business | https://www.outlookbusiness.com/corporate/as-govt-tightens-satcom-rules-reliance-jio-bets-on-homegrown-leo-network

Reliance Jio is planning to build and launch its own low Earth orbit (LEO) satellite constellation of 1,600 to 1,650 satellites at an altitude of around 650 kilometres over the next two to three years. The constellation is intended to offer broadband and direct-to-device services, the Economic Times reported.

The Mukesh Ambani-led company has submitted a proposal to space regulator Indian National Space Promotion and Authorisation Centre (IN-SPACe), which is evaluating the configuration and technical architecture of the plan, the report said. The satellite unit will be housed under Jio Platforms, alongside the company's other digital assets.

A First for an Indian Entity

This would mark the first time an Indian company is seeking to enter the LEO segment. The space is currently dominated by Elon Musk-owned Starlink, which operates around 10,000 satellites in orbit. Jeff Bezos-owned Amazon's Project Kuiper is in the process of deploying about 3,200 satellites, with over 300 already in orbit. Eutelsat OneWeb, in which Sunil Mittal-led Bharti Group is the second-largest stakeholder after the French government, has around 654 satellites in space. Jio also operates a joint venture with Luxembourg-based SES, which has satellites in geostationary and medium Earth orbit but not in LEO.

The report cited experts who said the estimated that setting up the kind of constellation being planned by Jio would require investment of $10 to $15 billion, equivalent to roughly ₹95,000 crore to ₹1,41,500 crore, and could potentially generate a few terabits of capacity depending on the satellites used.

The government is looking to support Jio with International Telecommunication Union (ITU) filings for securing orbital slots, an official told the publication, adding that support would also be extended to other Indian entities seeking to enter the segment.

Security Scrutiny of Foreign Satcom Players

Jio's satellite push comes as the

government is examining security risks linked to satellite communication services. The government is assessing concerns over "signal spillage" in border areas before granting final approvals to foreign satellite operators, including Starlink, Eutelsat-OneWeb, and SES, according to reports. Signal spillage refers to radio signals extending beyond their intended coverage areas, which security agencies say could pose risks around border security, spectrum interference, or unauthorised access to communications networks.

A Group of Secretaries has reportedly been formed to review the issue. Reports have also indicated that security agencies effectively held back Starlink's remaining regulatory clearances despite the company having secured key approvals, with concerns linked to questions over government control of foreign operators during geopolitical conflicts, and reports of Starlink terminals having operated in Iran without a local licence.

The development comes ahead of a likely milestone for Jio Infocomm. According to the Financial Times, the company may be days away from filing draft papers for a $4 billion initial public offering, which is expected to rank among the largest public offerings in India's history. The filing could come just ahead of Reliance Industries Chairman Mukesh Ambani's annual address to shareholders at the company's AGM on June 19.

***

India's Venus Orbiter Mission Officially Targeted For Launch On March 29, 2028 To Use Aerobraking For Historic 19-Payload Exploration

22 June 2025

Source: Indian Defence News | https://www.indiandefensenews.in/2026/06/indias-venus-orbiter-mission-officially.html

India's Venus Orbiter Mission (VOM), approved by the Union Cabinet with a budget of ₹1,236 crore, is officially targeted for launch on March 29, 2028. The spacecraft will be propelled by the heavy-lift LVM-3 rocket and is expected to complete its interplanetary journey to Venus in 112 days

India's Venus Orbiter Mission (VOM), will carry 19 payloads and employ aerobraking to achieve a stable science orbit. This ambitious mission will deliver unprecedented insights into Venus's surface, subsurface, atmosphere, and solar wind interactions, marking India's most complex planetary exploration effort after Chandrayaan and Mangalyaan.

The Venus Orbiter Mission represents a major leap in India's planetary science programme. It will carry 16 indigenous payloads, two collaborative instruments, and one fully international contribution, curated by an Expert Review Committee.

These payloads are grouped into three domains: surface and subsurface mapping, atmospheric and cloud dynamics, and solar wind interactions. Together, they will provide the first-ever deep subsurface and high-resolution atmospheric study of Venus.

For surface and subsurface mapping, the Venus S-Band Synthetic Aperture Radar (VSAR) will penetrate the dense sulfuric clouds to map the terrain at four times the resolution of NASA's Magellan mission, searching for active volcanoes and lava flows.

The Venus Advanced Radar for Topside Ionosphere and Subsurface Sounding (VARTISS) will probe beneath the crust, estimating lava flow thickness and stratigraphy. The Venus Surface Emissivity and Atmospheric Mapper (VSEAM) will identify mineral hotspots and thermal anomalies, while geological mapping will reveal tectonic features and volcanic activity.

Atmospheric and cloud dynamics will be studied using the Venus Thermal Camera (VTC) and Cloud Monitoring Camera (VCMC), which will track the planet's extreme super-rotation winds. The Venus Atmospheric Spectro-Polarimeter (VASP) and Solar Occultation Photometry (SPAV) will profile aerosols and gases, while the Lightning Instrument for Venus (LIVE) will detect electrical discharges hidden in the acidic clouds. The VIRAL spectrometer, developed collaboratively with Russia and France, will search for trace gases such as phosphine, a potential biosignature.

Solar wind and space environment interactions will be investigated by the Venusian Neutrals Analyzer (VNA), provided by Sweden, which will study neutral particles escaping the atmosphere. The VIPER plasma wave detector and Flux Gate Magnetometer (FGM) will measure magnetic boundaries and solar wind stripping. Additional instruments such as the Venus Radiation Environment Monitor (VeRad) and VISWAS particle analyser will assess radiation levels and atmospheric loss mechanisms.

To place this massive science station into its final orbit, ISRO will employ aerobraking, a technique that uses atmospheric friction instead of fuel-intensive thrusters.

After insertion into a highly elliptical orbit of 500 km × 60,000 km, the spacecraft will gradually dip into the upper atmosphere at periapsis.

Each pass will slow the craft, lowering its apoapsis until the orbit circularises at 200 km × 600 km. This process, divided into walk-in, primary, and walk-out phases, will take several months and save enormous amounts of propellant, enabling the mission to carry its full payload suite.

The mission's science orbit will allow low-altitude radar scans, subsurface probing, and atmospheric profiling at unprecedented resolution. ISRO also plans to deploy an

atmospheric probe from the orbiter, which will descend into the dense atmosphere and transmit data until it succumbs to the extreme conditions. This will provide direct measurements of Venus's atmospheric composition and dynamics.

International collaboration is central to the mission. Russia, France, and Sweden are contributing instruments, while ISRO has convened science meets with over 200 researchers from India and abroad. Archival Venus data has been released to broaden participation, and a Principal Scientist has been appointed to lead the mission's scientific output.

The Venus Orbiter Mission is expected to revolutionise understanding of Earth's twin planet. It will investigate whether Venus once had conditions suitable for liquid water before becoming an extreme greenhouse world, and how solar wind interactions stripped away its atmosphere.

By combining cutting-edge payloads with innovative aerobraking, India aims to deliver a planetary science mission of global significance.

.

***

U.S Delivers $4 Million Satellite Communications System to Sri Lanka for Protecting Indian Ocean Shipping Routes

23 June 2026

Source: Marine Insight | https://www.marineinsight.com/u-s-delivers-4-million-satellite-communications-system-to-sri-lanka-for-protecting-indian-ocean-shipping-routes/?shem=dsdf%coversdl%2C%2Csh%2Fx%2Fdiscover%2Fm1%2F4

Image for representation purposes only

The U.S. delivered a satellite communications system worth $4 million to the Sri Lankan Navy to strengthen maritime security in the Indian Ocean and safeguard critical shipping routes.

Manufactured by Cobham and Inmarsat, the Fleet Broadband System will be fitted on Sri Lanka's offshore patrol ships, enabling ship-to-ship and shore-to-shore communications.

This would allow naval warships to remain connected while operating far from the country's coasts.

According to the U.S State Department, the system would allow naval vessels to

remain in touch with the naval headquarters at all times and also connect with other ships and aircraft operating in the region.

Officials from Sri Lanka and the U.S also discussed how communications technology could support disaster response and also help counter illegal activities like trafficking and even piracy in the Indian Ocean.

The system will enable quick response to emergencies, and safeguard cargo ships as well, a U.S official said.

It is also expected to enhance maritime awareness and operational coordination while supporting efforts to intercept ships engaged in illicit activities.

The system will help authorities to track and monitor sanctioned vessels and safeguard supply chains.

Sri Lanka's deputy defence minister, retired Maj. Gen. Aruna Jayasekara said the system would strengthen defence cooperation between Colombo and Washington.

Jayasekara added that the communications system would enable the maintenance of reliable communications across the Sri Lankan naval fleet and improve situational awareness and sharing of critical information with regional partners and allies.

The U.S. said that the system would definitely enable Colombo's navy to work more effectively with partners during joint drills, exercises, missions and maritime security operations.

***

Aerospace Industry

Rolls-Royce or Safran: Why AMCA Mk2 Engine Decision Will Shape India's Future Aerospace Strategic Autonomy

Jaydeep Gupta | 23 June 2026

Source: Indian Defence News | https://defence.in/threads/rolls-royce-or-safran-why-amca-mk2-engine-decision-will-shape-indias-future-aerospace-strategic-autonomy.18081/

As India edges closer to selecting a foreign partner to co-develop a 120-kilonewton (kN) engine for the Advanced Medium Combat Aircraft (AMCA) Mk2, the contest between Britain's Rolls-Royce and France's Safran has grown into a major strategic crossroads.

The final choice is no longer just

about engine thrust; it is a critical debate between diversifying military suppliers and sticking with proven partnerships, a decision that will dictate India's aerospace independence for decades.

Because the Indian government is heavily funding this indigenous engine programme, New Delhi expects to retain the primary intellectual property (IP) rights rather than handing them over to the foreign manufacturer.

This financial backing has transformed the negotiation landscape.

Both European aerospace giants are now forced to compete fiercely, offering unprecedented levels of technology transfer and local industrial participation to win the contract.

Recently, Rolls-Royce escalated the competition by offering full IP rights to co-develop a new engine from scratch, while Safran has countered with promises of 100% technology transfer and no export restrictions based on its M88 engine family.

A primary argument for selecting Rolls-Royce revolves around the need for strategic diversification. India already enjoys a robust defence partnership with France, prominently featuring the Rafale fighter jet programme.

However, military planners warn against the vulnerability of relying too heavily on a single nation for vital aerospace technology.

Should shifting geopolitics or domestic policy changes in a partner country disrupt defence exports, India could face severe challenges in maintaining and upgrading its fleets.

Integrating the United Kingdom into the next-generation fighter programme would spread this risk and prevent over-reliance on a single supplier.

Furthermore, the intense rivalry between these two global engine manufacturers plays directly into India's hands.

By pitting Safran and Rolls-Royce against each other, New Delhi has successfully encouraged a bidding war over who can offer the best IP rights and technological access.

This competitive environment greatly strengthens India's bargaining power, making it much easier to acquire the kind of top-tier propulsion technology that foreign nations usually keep strictly guarded.

The potential boost to local industry is another massive factor. Rolls-Royce has reportedly proposed the creation of a specialised aero gas-turbine ecosystem within India, which would likely involve major domestic players such as Tata, Larsen & Toubro, and Bharat Forge.

This initiative would expose Indian engineers to brand-new design philosophies and significantly expand the country's domestic manufacturing capabilities.

Conversely, Safran presents a strong case built on stability and proven experience.

The French company is already deeply embedded in India's aerospace framework through various ongoing defence projects.

Because Safran is already highly familiar with the operational demands of the Indian Armed Forces and the capacity of local industries, partnering with them could greatly reduce the technical risks involved in executing such a complex project.

Ultimately, building a fifth-generation fighter jet requires more than just bolting a powerful engine into an airframe.

The propulsion system must be flawlessly integrated with the aircraft's stealth profile, flight control software, and thermal management systems.

Achieving this seamless integration demands decades of close collaboration and rigorous testing, meaning India must choose a partner it can trust for the long term.

Fortunately, India's phased rollout for the AMCA provides a crucial buffer.

The initial AMCA Mk1 prototypes—expected to roll out around 2027—will be powered by the reliable American General Electric F414 engine.

This ensures that essential flight testing and development can proceed without delay. Because the advanced Mk2 engine is not required until the 2030s (with Rolls-Royce projecting initial ground tests by 2032), India has the luxury of time.

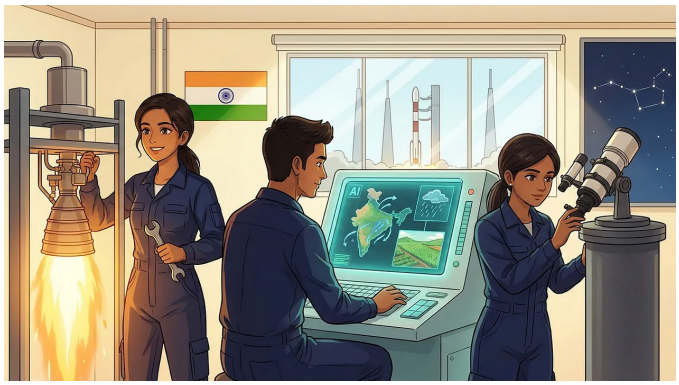
The government can afford to negotiate aggressively for the ultimate IP and technology transfer deal, ensuring true strategic autonomy without stalling the overall AMCA timeline.

***

India Is Bankrolling Three Space-tech Startups Across The Valley Of Death

Karan Kamble and Swarajya | 25 May 2026

Source: Sharpbyswaraja | https://sharpbyswarajya.substack.com/p/india-is-bankrolling-three-space



In the space business, the hardest part often comes after you've built the thing.

You've made something clever in the lab. Now it has to become a product someone will actually buy — years of testing, tweaking and proving it won't fail in orbit.

That long, expensive slog is where most deep-tech ideas quietly succumb, because private investors won't wait that long and the only early customer is usually the government.

There's a name for this graveyard: the valley of death.

On 11 June, IN-SPACe announced the first three companies it's helping across it — Bengaluru's Astrobase and SatSure, and Hyderabad's TM2SPACE — under its Rs 500 crore Technology Adoption Fund.

The fund is cannily built. It picks up to 60 per cent of a project's bill — capped at Rs 25 crore — to carry a technology from "works in the lab" to "ready to sell." The government takes no stake in the company. The founders keep the IP. It simply earns its money back over time, through a share of whatever the product eventually sells.

The only catches: you can't use this money to build the thing with foreign partners, and you need IN-SPACe's nod before licensing the technology to anyone else, at home or abroad.

Look at what got funded and a pattern jumps out.

Astrobase is building a powerful, reusable rocket engine — one of the trickiest designs in the world, with very few built anywhere — and is already firing it on the test stand.

SatSure is building Dhaarini, what it calls India's first sovereign Earth-intelligence model — an AI trained on India's own monsoons, farms and cities to make sense of the flood of satellite images India collects: spotting stressed crops, tracking floods, keeping an eye on infrastructure.

TM2SPACE is making the small star-reading sensors that keep a satellite pointed the right way.

An engine, a brain, and a sense of direction — three things India has struggled to build well enough at home. Which is the whole point: the fund exists to cut that dependence.

The design is clever. Now let's do the maths. SatSure's grant came to Rs 24.6 crore — just shy of the cap — and the three were chosen from 43 proposals. At Rs 25 crore a pop, the entire Rs 500 crore pot can back only about 20 projects over five years — and so far, 16 months in, it has backed three. Hold that against the dream it's attached to: a $44 billion space economy by 2034, talk of India becoming the world's third great space power after the US and China, a separate Rs 1,000 crore venture fund.

Union Minister Jitendra Singh has put the logic plainly — India can't out-spend China on science, so it has to win on brains instead.

That's exactly what this fund is: small, sharp, founder-friendly, aimed squarely at the spot where Indian deep-tech — or actually, deep-tech anywhere — keeps stalling.

***

DARPA Just Quietly Asked Industry how to Rebuild a Destroyed Satellite Fleet in hours — and the Request Reveals what the Pentagon now Assumes about the First Day of a War with China

18 June 2026

Source: Space Daily | https://spacedaily.com/sd-darpa-just-quietly-asked-industry-how-to-rebuild-a-destroyed-satellite-fleet-in-hours-and-the-request-reveals-what-the-pentagon-now-assumes-about-the-first-day-of-a-war-with-china/

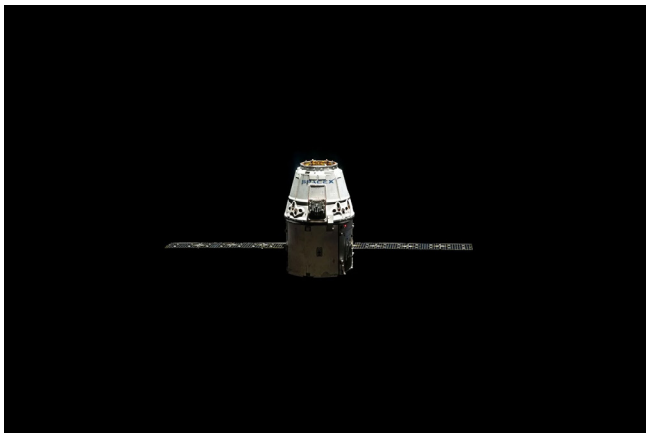


Photo by Pixabay on Pexels

The Pentagon's blue-sky research arm wants industry to figure out how to rebuild a shot-up satellite constellation in hours, not years. DARPA released a request for information asking companies to pitch concepts for restoring critical orbital services after an attack.

The solicitation, posted by DARPA's Strategic Technology Office, asks for technical ideas spanning modular spacecraft, software-defined satellites, rapid manufacturing, on-orbit assembly and distributed sensor networks. The stated objective is blunt: reestablish service on timelines measured in hours to weeks after satellites are degraded by anti-satellite weapons, cyberattacks, orbital debris or other disruptions.

That is a sharp departure from how the U.S. has historically thought about space resilience — buy fewer, more exquisite satellites and assume they will survive because nobody dares shoot at them. That assumption is no longer holding.

The Threat Picture that Prompted the RFI

Both China and Russia have spent the past decade fielding what defense officials call counterspace systems — direct-ascent anti-satellite missiles, co-orbital inspectors, ground-based jammers, lasers capable of dazzling optical sensors, and offensive cyber tools. The U.K. has begun naming the harassment publicly. Maj. Gen. Paul Tedman, head of UK Space Command, told the BBC that Russian satellites are stalking British military spacecraft and that Moscow's ground-based jammers target UK military satellites on a weekly basis.

Tedman described Russian payloads designed to fly close to allied satellites and collect information from them. He also noted that the combined Russian and Chinese fleet of satellites has grown substantially over the past decade, while Britain operates only a handful of dedicated military spacecraft.

The U.S. is more exposed than its allies in one sense: American forces are wired into space for almost everything. Communications, intelligence collection, missile warning, and the positioning, navigation and timing signals that guide everything from infantry radios to precision munitions all flow through orbit. Take down the satellites and you do not just blind a sensor — you peel apart the joint force.

What "Reconstitution" Actually Means

DARPA's framing makes clear the agency is not just asking for spare satellites in a warehouse. The RFI envisions a full reconstitution architecture: spacecraft built in modular blocks that can be swapped or reconfigured, software-defined payloads that can take on missions outside their original specification, manufacturing lines that can spin up replacements quickly, and on-orbit assembly that lets operators stitch together capability from parts already in space.

The distributed sensor piece matters too. A constellation of cheap, networked satellites is harder to disable than one big bus carrying a one-of-a-kind sensor. Lose ten of a hundred and the mission degrades gracefully. Lose one of one and the mission ends.

Building on Victus Nox and CASR

DARPA's effort plugs into a wider Space Force push that has been building since 2021. The clearest demonstration so far came with Victus Nox, the tactically responsive launch exercise flown by Firefly Aerospace and Millennium Space Systems in September 2023. Firefly's Alpha rocket lifted off from Vandenberg Space Force Base just 27 hours after the Space Force gave the launch order — a national security responsive-launch record, beating the previous mark of 21 days set on the TacRL-2 mission in June 2021.

The Victus Nox sequence is worth recalling because it shows what reconstitution looks like in practice. After entering a six-month hot-standby phase, Firefly and Millennium received an alert and had 60 hours to truck the satellite 165 miles from El Segundo to Vandenberg, fuel it, mate it to the payload adapter and ready it for launch. They finished in just under 58 hours. Then came the launch order, with 24 hours to update Alpha's trajectory, encapsulate the payload and roll to the pad.

Lt. Gen. Michael Guetlein, then commander of Space Systems Command, praised the Victus Nox mission as demonstrating the nation's ability to rapidly respond to adversary threats and deliver capabilities to warfighters.

The Space Force has also stood up the Commercial Augmentation Space Reserve, or CASR, which uses pre-arranged agreements with commercial satellite operators to provide surge capacity during a crisis. The model is borrowed from the Civil Reserve Air Fleet, which lets the Pentagon press civilian airliners into service during emergencies. CASR essentially admits that the commercial sector now operates more

spacecraft than the military does and that wartime resilience requires using those assets.

The Hard Problem DARPA is Really Asking About

Responsive launch is the easy half. The harder question — and the one the new RFI tries to surface — is what you put on top of the rocket on short notice. A satellite bus that takes three years to build is not a reconstitution asset, no matter how fast you can launch it.

That is why the agency is asking about modular spacecraft and software-defined payloads. If a communications satellite can be reprogrammed in orbit to fill a missile-warning gap, the constellation becomes more than the sum of its parts. If a bus design can accept five different sensor packages with minimal integration work, manufacturers can keep partial inventory and finish assembly on demand.

On-orbit assembly raises the ambition further. Instead of launching a complete satellite, operators could launch a propulsion module, a power module and a sensor module separately, then dock them in orbit. The architecture would tolerate the loss of individual pieces and allow upgrades without replacing the whole spacecraft.

Where Commercial Industry Fits

DARPA's RFI is also an implicit recognition that the government cannot do this alone. The launch cadence required for genuine reconstitution — dozens of vehicles available on short notice — depends on commercial providers. The same applies to manufacturing. Companies producing small satellites at volume for commercial constellations have the production lines the Pentagon would need to draw on.

The Space Force has already been working to bring more launch providers into the national security fold. Blue Origin secured nearly $18 million for New Glenn integration studies under the National Security Space Launch Phase 3 program, joining SpaceX and United Launch Alliance as a potential heavy-lift provider for sensitive payloads. A broader stable of certified vehicles means more options when something goes wrong in orbit.

The Deterrence Logic

There is a strategic argument beneath the engineering one. If an adversary believes that destroying a U.S. satellite buys a meaningful military advantage that lasts for months, the temptation to attack rises. If the adversary instead believes the U.S. can replace the capability within days, the calculus shifts. Reconstitution is partly about resilience and partly about taking the prize off the table.

That deterrence logic only works if the capability is credible. The Pentagon will need to demonstrate, repeatedly and visibly, that it can do what the RFI describes. Victus Nox was the first credible demonstration.

DARPA is now asking what comes next.

What follows the RFI — a formal program, a series of demonstrations, a quiet handoff to the Space Force — will say a lot about how seriously the Pentagon treats the risk that the next conflict starts, or ends, in orbit.

***

"Coercive air power is usually identified with strategic bombing. This is a mistake. History shows that strategic bombing strategies are the least effective ways to use air power for coercion."

- Robert A. Pape

The Centre for Aerospace Power and Strategic Studies (CAPSS) is an independent, non-profit think tank that undertakes and promotes policy-related research, study and discussion on defence and military issues, trends and developments in air power and space for civil and military purposes, as also related issues of national security. The Centre is headed by Air Marshal Nagesh Kapoor, SYSM PVSM, AVSM, VM (Retd).

Centre for Aerospace Power and Strategic Studies
P-284 Arjan Path, Subroto Park, New Delhi - 110010
Tel.: +91 - 11 - 25699131/32 Fax: +91 - 11 - 25682533
Email: capsnetdroff@gmail.com
Website: https://capssindia.org/

Advisor : Air Vice Marshal Prashant Mohan VM (Retd)
Editor, Concept & Content : Ms Gowri R

Composed by Mr Rohit Singh
Tel.: +91 9716511091
Email: rohit_singh.1990@hotmail.com