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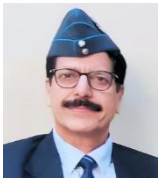
IACCS: Proves Mettle of IAF's Network Centric Operations



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During Operation Sindoor, the Integrated Air Command and Control System (IACCS) played a significant role successfully managing air operations. On May 07, 2025, these Operations commenced by targeting nine terrorist hideouts, training camps, etc., in Pakistan. Network -centric operations were used to conduct offensive as well as Air Defence operations successfully. Defending its airspace during Operation Sindoor was not a fluke but proof of India's well-organised air defences. Central to achieving this success was the IACCS, which links information, observational networks, AD weapon systems and decision-making mechanisms from the IAF, Army, and related forces.[1]

As a vital part of Indian air defence, the IACCS has a network that allows it to detect, track, and identify aerial targets as Hostile when they appear. Thanks to the use of the Air Force Network (AFNET), AI, satellite, and a broad range of sensors, the IACCS was able to achieve better air superiority and better coordination with joint operations. All air actions of Operation Sindoor were controlled and co-ordinated from IACCS.

Background on Operation Sindoor

On May 07, between 01:05 am and 01:30 am, India launched a tri-service operation called 'Operation Sindoor', targeting nine terror infrastructure sites in Pakistan and PoK (Pakistan occupied Kashmir). This was in retaliation to several terrorist activities and the deadly Pahalgam terror attack on April 22, 2025. Four terrorists killed 26 civilians, including 25 Indians and one Nepali national.

These terrorists were launched by 'The Resistance Front (TRF)', a proxy of Lashkar-e-Taiba (LeT). The air strikes, part of the Op Sindoor, were precise and measured without co-lateral damage. The strikes avoided all non-terrorist targets, including Pakistani military sites, to keep the situation non-escalatory. Also, no civilian locations were targeted. [2]

The Pakistani Government's propaganda machinery claimed that India was acting aggressively by targeting civilians. Pakistan decided to extend support to terrorist groups, exposing, once again, their explicit nexus with terrorist outfits. In response, the Pakistani Army launched an offensive by air strikes, drones, missiles, and rockets on Indian vital installations, including Jammu, Pathankot and Udhampur. This forced India to intensify its air defence, and IACCS was at the forefront of this effort.

Understanding IACCS

During Operation Sindoor, IACCS was the nerve centre for not only Air Defence operations, but also for Offensive Operations. IACCS is an indigenously developed Command and Control system provided by the IAF, built to accelerate its activities in air defence and make network- centric warfare possible. The system includes input from all types of radars, whether homogeneous, heterogeneous, two-dimensional or three-dimensional, as well as AWAC (Airborne Warning and Control System) planes, UAVs, airbases, air traffic control radars for civil aviation and observation posts. Using information from ground sensors, airborne sensors, air defence weapon systems and command systems, IACCS makes a 'Recognised Air Situation Picture (RASP)' to help manage air threats.[3]

With IACCS, commanders at all levels — strategic, operational, and tactical, are able to track and watch every development in the air in real-time. The Akashteer system which has been recently installed by the Indian Army, is a subset of IACCS. Therefore, IACCS is making Air Defence operations comfortable, for both the Land and air forces to work together.

Commanders exploited IACCS to monitor the air situation in real time which allowed them to update their situational awareness. The AFNET, a fast and secure digital grid, launched on September 14, 2010, hosts IACCS. AFNET depends on Internet Protocol (IP) and Multiprotocol Label Switching (MPLS) for dependable transmission of data, voice and video over its network.[4]

With the help of IACCS, commanders could react promptly to the developing air activity as their situational awareness was up-to-date. With IACCS, the air defence functions have become quick. Appropriately selecting sensors and interceptor fighter aircraft and surface to air AD weapon systems of varying ranges ensures that there is no duplication of action and the incoming target is being successively engaged in multiple layers from the IB to the VA/VP.

The Role IACCS During Operation Sindoor

During Operation Sindoor, Pakistan attacked Indian military installations and civilians with drones, missiles and rockets. IACCS facilitated the Indian Air Force to deal with these threats efficiently and effectively. The main contributions of IACCS are appended below:

(a) Detection and Tracking: IACCS presented the integrated air data, obtained from ground radars, AWACS aircraft and Airborne Early Warning and Control (AEW&C) systems to detect and track any aircraft in Indian Airspace. The system could even detect Pakistani drones and missiles, with low RCS, before they could reach their destination.[5]

(b) Real-time Situational Awareness: Commanders could rely on the RASP provided by IACCS, which congregated all necessary air information in one place for rapid action. A picture of the IACCS node displayed at the briefing on May 12, 2025, clearly showed people using an IACCS picture to monitor the air situation.[6]

(c) Coordination and Command: IACCS enabled the appropriate selection of the weapons available, like the S-400, Akash missiles, and homemade counter-UAV systems to stop and destroy the threats. IACCS architecture works to ensure that assets from the Army, and Air Force are exploited on merits for smooth operations.[7]

(d) Activation of Akashteer: Integration of Akashteer AD system with IACCS had been achieved a few months prior to Ex Sindoor. Akashteer synergised the joint operations, where ground-based resources and the IAF's air defence teams could efficiently work together, leading to the best possible solution. Akashteer has led to orders for more than 400 C2C centres, and 107 of them have been delivered so far, with full integration planned by the end of the year.[8]

(e) Successful Interceptions: With operational assistance from IACCS, Pakistani drones and PL-15 missiles were successfully detected and shot down from May 08 to May 10, 2025. Briefings by military leaders underlined that current battles could only be won because the net-centric operation strategies were successful.[9]

(f) IACCS prevented Pakistan's aerial threats from causing damage by quickly neutralising them. The system was so quick and accurate, that the attackers could not penetrate the Air Defence shield and enter the airbases, schools, temples, and civilian places.

Pakistan's loss was attributed to India's strong and advanced air defences which were directed from the IACCS. Meanwhile, Pakistan's failure to use its Chinese HQ-9 system, which could not detect or hit Indian strikes, made the IACCS seem more effective.

Implications

The real-time Command and Control from IACCS ensured that India's air defence was better than Pakistan's, as most of the latter's Chinese systems, had several technical and operational flaws. IACCS with Akashteer have reinforced the Indian Air Defence system in exploiting networks for warfare, improving its response to aerial attacks. India's achievement in Operation Sindoor reflects its ability to rely on its defence technology and enhance its readiness against nearby rivals.

AI is being used in IACCS to help monitor enemy planes and ensure the best possible use of weapons. During the next decade, IACCS wants to support in-flight movement of missile target assignments to enable changing the type of attack "on the fly. " Old THD-1955 3D radar equipment will be replaced with modern high-power radars (range at 600 kilometres) to strengthen IACCS.[10]

(Disclaimer: The views and opinions expressed in this article are those of the author and do not necessarily reflect the position of the Centre for Air Power Studies [CAPS])

Notes:

[1] "India's shield in the skies: What is the Integrated Air Command and Control System used during Operation Sindoor?," *The First Post,* May 13, 2025,https://www.firstpost.com/explainers/india-air-defence-iaccs-operation-sindoor-how-it-works-13888060.html. Accessed on May 18, 2025.

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[3] Ibid First Post.

[4] "Op Sindoor: Pivotal Role of India's Integrated Air Command and Control Sys (IACCS) in Thwarting Aerial Threats," *Resonant News* May 13, 2025, https://resonantnews.com/2025/05/13/op-sindoor-pivotal-role-of-indias-integrated-air-command-and-control-sys-iaccs-in-thwarting-aerial-threats/. Accessed on May 19, 2025.

[5] Amrita Nayak Dutta, "Operation Sindoor | How India's air defence shield works: Inside the IACCS command system", *The Indian Express*, May 15, 2025, https://indianexpress.com/article/explained/indias-air-defence-shield-10003549/. Accessed on May 18, 2025.

[6] Ibid First Post.

[7] "Integrated Air Command and Control System: The heroes behind Operation Sindoor," *The Hindustan Times,*

May 12, 2025, https://www.hindustantimes.com/india-news/integrated-air-command-and-control-system-the-heroes-behind-operation-sindoor-101747055842040.html. Accessed on May 19, 2025.

[8] Divyam Sharma, "Guardians Of The Sky - India's Integrated Air Defence That Outfoxed Pakistan," *NDTV,* May 12, 2025, https://www.ndtv.com/india-news/guardians-of-the-sky-indias-integrated-air-defence-that-outfoxed-pak-operation-sindoor-indian-air-force-akash-missile-8395760. Accessed on May 19, 2025.

[9] Ibid.

[10] Ibid.