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MP-IDSA
Commentary

Indian Navy Gets a New Communications Satellite

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Summary

The launch of the CMS-03 strategic satellite, designed to boost the Indian Navy's operational capabilities, represents a significant milestone in India's strategic space pursuit.

India's Launch Vehicle Mark-3 (LVM3) successfully launched a communication satellite, CMS-03, on 2 November 2025. According to the Indian Space Research Organisation (ISRO), this multi-band communication satellite is intended to provide services across a broad oceanic region, including the Indian landmass. CMS-03 is a strategic satellite designed to boost the Indian Navy's operational capabilities.

CMS-03, weighing about 4,400 kgs, is the heaviest satellite launched by ISRO from Indian soil using an Indian launcher. Until now, the heaviest satellite launched by ISRO was the GSAT-11, a geostationary communications satellite weighing 5,854 kgs. It was launched on 4 December 2018 from the Guiana Space Centre using Ariane 5, the now-retired European heavy-lift space launch vehicle operated by Arianespace for the European Space Agency (ESA).

CMS-03 or GSAT-7R has a lifespan of 15 years and is a replacement for the multi-band communication satellite GSAT-7/INSAT-4F, named Rukmini, launched on 29 August 2013. The Indian Navy operates Rukmini. This 2,650 kg satellite was designed for a mission life of seven years. Rukmini was India's first officially dedicated military satellite, launched explicitly for strategic purposes. Yet it appears to have remained operational even after more than 12 years in service. For a long time, India leveraged the dual-use nature of space technology, using some civilian satellites for limited military applications.

India has faced international sanctions for several decades due to its nuclear policies, particularly the nuclear tests conducted in 1974 and 1998. However, following effective negotiations between India and the United States (US) during 2005–2008, commonly referred to as the Indo-US Civil Nuclear Deal, India emerged from the shadows of the so-called 'technological apartheid'. This changing global status possibly made India publicly acknowledge and expand its military space policy.

The biggest security challenge faced by India in the first decade of the 21st century was the 26/11 Mumbai terror attacks in 2008. This act of terrorism was executed via sea routes. It exposed critical gaps in coastal security and surveillance. That was the period when piracy and trafficking also emerged as a significant threat in the Indian Ocean Region (IOR), apart from maritime terrorism. The 2005 Asian tsunami highlighted the need for reliable and secure communications requirements.

There was a realisation that a dedicated satellite could enhance the Indian Navy's operational capabilities manifold. During April 2009, ISRO launched the Radar Imaging Satellite-2 (RISAT-2) to cater for immediate imagery requirements. It was procured from Israel Aerospace Industries (IAI). Subsequently, after a few years in 2013, the GSAT-7/ Rukmini satellite was launched for communication purposes.

For over a decade, the Rukmini satellite has played an essential role for the Indian Navy. This system provides the Indian Navy with a dedicated, secure, real-time

communication platform across the IOR. The Indian Navy's experience with the GSAT-7 Rukmini satellite has been highly positive, effectively providing the force with its first dedicated, secure, real-time communication platform across the IOR. The spacecraft is equipped with Ku band, S band, C band, and UHF (ultra-high frequency) band transponders to improve the maritime communications among the Indian Navy's warships. The satellite had reduced the navy's dependence on foreign satellites like Inmarsat to communicate with Indian ships.[1]

During the 73-day military standoff over the Doklam border dispute between India and China, which began in 2017, when China started building a road in the Doklam region, the Rukmini satellite is known to have picked up the movement of China's Yuan-class conventional diesel-electric submarines in the region. During this standoff, the Indian Navy was able to keep a close tab on Chinese submarines entering the area owing to GSAT-7.

Rukmini has effectively assisted the Indian Navy in monitoring the Arabian Sea and the Bay of Bengal. During the 2014 TROPEX exercise, it successfully networked 60 ships and 75 aircraft. It covers nearly 70 per cent of the IOR, from the Persian Gulf to the Malacca Strait. Over the past 12 years, GSAT-7 has supported the Indian Navy in peacetime exercises and various operational missions. This satellite has been a significant force multiplier, and much more is expected from CMS-03.[2]

Since the launch of GSAT-7 in 2013, satellite communication technology has advanced significantly. Over time, the Indian Navy has become increasingly proficient in utilising this satellite's various applications, gaining a clear understanding of its strengths and limitations. These operational insights must have played a vital role in the design and development of CMS-03 (GSAT-7R).

CMS-03 will strengthen the Indian Navy's operational reach across critical maritime domains. This newly launched satellite offers higher-capacity bandwidth with increased digital access to remote territories. The satellite operates on multiple frequency bands, which include UHF, S, C, and Ku. The system enables the transmission of voice, video and data. It will provide seamless communication between naval ships, submarines and aircraft across the Indian Ocean Region, up to 2,000 kms from India's coastline. For a country with the world's fourth-largest navy and growing challenges in its neighbourhood, CMS-03 represents a significant strategic upgrade.[3] This satellite was probably expected to be launched by 2022, and

[1] **"GSAT-7 launch: Indian Navy Will No Longer Depend on Foreign Satellites"**, *India Today*, 30 August 2013.

[2] **"India China Sikkim Border Standoff: How GSAT 7 Rukmini is Keeping a Close Eye on Submarines at the Indian Ocean"**, *Financial Express*, 5 July 2017.

[3] Abhinav Singh, **"CMS-03 Satellite Launch Likely in November. Why This is a Major Upgrade for Indian Navy's Operations, Maritime Defence"**, *The Week*, 21 October 2025.

the contract for the Rs 1,589 crore project was signed between ISRO and the Indian Navy in June 2019.[4]

The first dedicated communications satellite, GSAT-7A, for the Indian Air Force (IAF) was launched on 19 December 2018. This is the only other exclusive satellite launched for the armed forces. It helps the IAF connect various platforms like aircraft, helicopters, UAVs, Airborne early warning and control (AWACS) aircraft, missile units and radars. The Indian Army is known to use 30 per cent of the capacity of GSAT-7A. The life period of this satellite is seven years, and the Ministry of Defence (MoD) has approved a proposal to procure a GSAT-7C satellite and related equipment for the IAF for Rs 2,236 crore.

On 27 August 2015, a communications satellite called GSAT-6 was launched by ISRO, which is also known to cater for the country's strategic requirements. GSAT-6 is known to provide quality and secure communication. The satellite had a planned mission duration of 9 years, but it is still operational. However, this system is a dual-use system, and strategic requirements appear to be only one component of this system.[5] The MoD during 2023 has signed a Rs 3,000 crore contract with NewSpace India Limited (NSIL), the commercial arm of ISRO, for an advanced communication satellite, GSAT 7B, for the army to fulfil a long-standing need.[6]

India has plans to expand its military satellite network to 78 platforms by 2031.[7] The aim is to strengthen national weather monitoring, surveillance, reconnaissance, communications, navigation and electronic intelligence capabilities. However, global experience shows that space projects often face delays, making it likely that such a network may only become operational around 2035. This raises a critical question: can India afford to wait another decade to put this structure in place?

Operation Sindoor has highlighted the crucial need for India to accelerate investments in military space technologies. It is an open secret that China provides Pakistan with space-based intelligence support, and the same happened during Operation Sindoor. China's advanced space infrastructure enables it to deliver timely intelligence, surveillance and secure communication services. Its robust space-based navigation system also offers Pakistan access to military-grade signals. In effect, India's adversaries hold an advantage in the military space domain. Therefore, India must quickly expand its space-based capabilities through a coordinated effort among ISRO, the armed forces and the private industry.

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[4] Vijay Mohan, **"Countdown Begins for Launch of ISRO's Military Communication Satellite CMS-03"**, *The Tribune*, 1 November 2025.

[5] **"Military Satellites: India Needs to FastTrack"**, *Financial Express*, 25 November 2021.

[6] Rahul Singh, **"Army Set to Get Its Own Satellite Worth ₹3,000 crore by 2026"**, *Hindustan Times*, 29 March 2023.

[7] **"India to Expand Military Satellite Network to 78 Platforms by 2031"**, *SSB Crack*, 9 September 2025.

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