

## Indian Coast Guard Initiates Construction of First AI-Enabled Offshore Patrol Vessel



In a significant leap for India's maritime security and indigenous shipbuilding capabilities, the Indian Coast Guard (ICG) marked a pivotal moment on July 22, 2025, with the keel-laying ceremony for the first of its six Next Generation Offshore Patrol Vessels (NGOPVs). This vessel, designated Yard 16401, is being constructed at Mazagon Dock Shipbuilders Limited (MDL) in Mumbai and represents a bold integration of artificial intelligence (AI) and advanced technologies into India's naval assets.

The keel-laying, a traditional shipbuilding milestone marking the formal start of a vessel's construction, signifies a new era for the ICG. These 117-meter-long NGOPVs are being built under a ₹1,614 crore contract signed on December 20, 2023, between MDL and the Ministry of Defence. The project falls under the "Buy (Indian-Indigenously Designed, Developed, and Manufactured)" category, aligning with India's "Aatmanirbhar Bharat" (self-reliant India) initiative.

What sets these vessels apart is their comprehensive integration of cutting-edge technologies. They will feature AI-based predictive maintenance systems for real-time diagnostics, allowing for proactive repairs and optimized lifecycle management. Additionally, they will incorporate remote-piloted drones for enhanced aerial surveillance, an Integrated Bridge System (IBS) for centralized navigation controls, and an Integrated Platform Management System (IPMS) for real-time monitoring and control of onboard machinery. These enhancements are expected to significantly reduce crew workload, improve mission efficiency, and provide superior situational awareness.

Deputy Inspector General R.H. Nandodkar, Chief Staff Officer (Technical) at ICG Regional Headquarters (North West), presided over the ceremony, joined by A. Vinod, Executive Director (Ship Building) at MDL, and other senior officials. The vessels are designed for multi-role missions, including maritime surveillance, coastal security, anti-smuggling, anti-piracy operations, search and rescue, and pollution response within India's vast Exclusive Economic Zone (EEZ) and beyond. With a top speed of 23 knots and an impressive endurance range of 5,000 nautical miles, these NGOPVs will be capable of extended missions. Each vessel will accommodate 11 officers and 110 crew members.

Four of the six vessels will replace aging Offshore Patrol Vessels (OPVs), while the remaining two will augment the existing ICG fleet. The first vessel is anticipated to be delivered within 41 months, with subsequent ships following at five-month intervals. This strategic investment in AI-enabled vessels underscores India's commitment to modernizing its maritime security forces and reinforcing its capabilities as a key player in the Indian Ocean Region.