

## Strategic Partnership: Upgrading India's Submarine Fleet with Advanced Technology



In a move set to significantly boost the Indian Navy's underwater capabilities, Mazagon Dock Shipbuilders Ltd. (MDL) and France's Naval Group have formalized a collaboration to integrate an indigenous energy system into the Kalvari-class submarines. The agreement, signed on July 23, 2025, solidifies a long-standing partnership, with Naval Group acting as the original equipment manufacturer (OEM) for the Scorpène-class submarines, on which the Kalvari class is based. This project is a crucial step towards enhancing the operational readiness and self-reliance of the Indian Navy's fleet.

The upgrade centers on the installation of an indigenous Air-Independent Propulsion (AIP) system, a technology developed by the Defence Research and Development Organisation (DRDO). This system will allow the submarines to remain submerged for extended periods, drastically improving their stealth and endurance. The modification process is a complex engineering task known as "Jumboisation," which involves cutting the submarine's hull to insert the new energy module. Naval Group will provide crucial technical oversight, proprietary materials, and specialized training to MDL engineers to ensure the seamless integration of this technology.

This partnership follows two key contracts signed by the Ministry of Defence in December 2024, with a combined value of approximately ₹2,867 crore (about \$342 million). One contract, valued at ₹1,990 crore, was awarded to MDL for the construction of the AIP plug itself. The second contract, worth ₹877 crore, was with Naval Group for the integration of an advanced

heavyweight torpedo system, also developed in collaboration with DRDO. These procurements underscore a dual strategy of modernizing the submarine fleet while simultaneously fostering domestic defense production.

The collaboration aligns directly with the government's "Aatmnirbhar Bharat" (Self-Reliant India) initiative, showcasing a commitment to integrating indigenous technologies into frontline military platforms. According to S.B. Jamgaonkar, Director of the Submarines Division at MDL, said the company is "pleased to extend our natural partnership with Naval Group" and is committed to delivering the project with the "highest standards of quality and precision and within the project timelines." The successful completion of this upgrade will not only enhance India's strategic autonomy but also position the country as a leader in advanced submarine technology.