

## Indian Navy Charts Course for Unmanned Submarine Fleet to Counter IOR Dynamics



The Indian Navy is actively pursuing the development and future acquisition of a substantial fleet of Extra-Large Unmanned Underwater Vehicles (XLUUVs), ranging from 20 to 100 tons, as a strategic response to China's escalating maritime presence in the Indian Ocean Region (IOR). This ambitious initiative shows India's commitment to bolstering its undersea warfare capabilities through indigenous technological advancements.

The drive to incorporate XLUUVs into the naval fleet is a critical component of India's long-term maritime strategy. These autonomous platforms are envisioned to perform a wide array of missions, including Intelligence, Surveillance, and Reconnaissance (ISR), Anti-Submarine Warfare (ASW), Mine Counter Measures (MCM), and potentially even offensive operations. Their ability to operate for extended durations without human intervention and in high-risk environments makes them invaluable assets for monitoring vast maritime expanses such as the IOR.

A significant step in this direction was the recent commencement of construction for the 'Jalkapi' Extra-Large Unmanned Underwater Vehicle (XLUUV) by Krishna Defence and Allied Industries Ltd (KDAIL) in Gujarat, marked by a ceremonial plate-cutting on June 10, 2025. This 20-ton, 11-meter-long autonomous platform, designed by the Indian Navy's Directorate of Naval Design-Submarine Design Group (DND-SDG), is engineered for stealth and capable of diving to depths of 300 meters and operating for 30 to 45 days. It is intended for roles such as ISR, ASW, and mine mapping.

Beyond the Jalkapi, the Defence Research and Development Organisation (DRDO) is already planning a more ambitious 100-ton XLUUV. Approved in 2024 with a budget of approximately ₹2,500 crore (over \$290 million), this larger variant is envisioned to be 16 meters long with a 10-meter payload section, capable of carrying up to 10 tons of external payload, potentially including torpedo tubes and mine-laying systems. This would place it in the same class as leading international platforms like Boeing's Orca XLUUV.

The push for these unmanned systems is a direct response to the Indian Navy's current submarine fleet shortcomings and the increasing deployment of Chinese naval assets, including their own UUVs, in the IOR. XLUUVs offer a cost-effective and low-risk alternative to manned submarines for long-duration patrols and surveillance. As outlined in the Indian Navy's "Integrated Unmanned Roadmap for 2021-2030," the induction of autonomous systems is prioritized to enhance maritime security and create a flexible undersea warfare ecosystem. The development of the 100-ton XLUUV, with a prototype expected by 2027, will involve major domestic shipbuilders, further strengthening India's self-reliance in cutting-edge defense technology.