

India's fourth nuclear-powered ballistic missile submarine (SSBN)

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About India's fourth nuclear-powered ballistic missile submarine (SSBN):

- The fourth SSBN is **codenamed S4***.
- It boasts nearly **75 percent indigenous content** and is equipped with **K-4 ballistic missiles**, which have a **range of 3,500 km** and are fired through vertical launching systems.
- While the **first of its class, INS Arihant** carries **750 km range K-15 nuclear missiles**, its **successors, INS Arighaat and INS Aridhaman**, are all upgrades of the previous ones and **carry only K-4 ballistic missiles**.
- The launch of S4* follows the commissioning of INS Arighaat in August 2024, and the INS Aridhaman is set for commissioning next year. Both INS Arihant and INS Arighaat are already on deep sea patrols.
- **Naming:** Since national security planners named India's first leased nuclear attack submarine INS Chakra as S1, INS Arihant was named S2, INS Arighaat S3, INS Aridhaman S4 and hence the newly launched one is the last of its class, **S4* with the formal name yet to be given**.

SSBN:

- SSBNs are a potent and highly specialised military asset. Operated by only the **United States, Russia, China, the United Kingdom, France, and India**, these are armed with submarine-launched nuclear ballistic missiles.
 - These submarines are designed to **provide a reliable second-strike capability** and underpin strategic **nuclear deterrence via the principle of mutual assured destruction**.
 - With **unlimited range and endurance**, the SSBN is **constrained only by food supplies, crew fatigue, and maintenance**.
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Q1: What is the K-4 ballistic missile?

The solid-fuelled K-4 missile is being developed by DRDO to arm the country's nuclear-powered submarines in the shape of INS Arihant and its under-development sister vessels. It has a range of 3,500 km and it will be able to bring almost all parts of Pakistan and several areas of China within its reach.

News: India launches 4th nuclear-missile submarine

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