INS Aridaman – India's Third Nuclear Submarine

Prelims: *Current events of national and international importance | Science & Technology*

Why in News?

India has inducted INS Aridaman, strengthening the country's sea-based nuclear deterrence and completing a fleet of three operational SSBNs at sea for the first time.

- **Type –** Nuclear-powered ballistic missile submarine (SSBN).
- **Role –** Strategic deterrence, second-strike capability.
- **Part of –** India's nuclear triad (land, air, sea).
- **Objectives**
  - Enhance survivability of nuclear deterrent forces.
  - Provide assured second-strike capability under India's "No First Use" doctrine.
- **Displacement –** 7,000 tonnes.
- **Launching System –** 8 vertical launch tubes (compared to 4 on Arihant and Arighaat).
- **Missile Capability –** K-15 SLBM – Range 750 km and K-4 SLBM – Range 3,500 km.
- **Reactor –** Advanced nuclear reactor, upgraded for longer submerged endurance.
- **Construction –** 90% Indigenous project with support from DRDO and Russian collaboration.
- **Key Features –**
  - **Long submerged endurance –** Months underwater without surfacing.
  - **Stealth –** Nuclear propulsion ensures low detectability compared to diesel-electric submarines.
  - **Strategic Payload –** Larger missile capacity than INS Arihant and INS Arighaat.
- **Operational Roles –**

- **Strategic Deterrence –** Retaliatory nuclear strike capability.
- **Maritime Security –** Strengthening India's presence in the Indian Ocean Region.
- **Nuclear Triad –** Completes Sea-based leg of India's deterrence.

- **Other Submarines**
  - **INS Arihant –** Commissioned 2016, India's first SSBN. Conducted deterrence patrol in 2018.
  - **INS Arighaat –** Commissioned 2024, technologically advanced compared to Arihant.
  - **INS Aridaman –** Inducted 2026, larger, and more capable, doubling missile launch capacity.

Quick Facts

• **4th SSBN under construction –** Larger size, capable of carrying more K-4 missiles.
• **Project-75I –** Indo-German collaboration to build 6 advanced AIP-equipped conventional submarines.

References

1. Indian Express | INS Aridaman
2. Economic Times | INS Aridaman

SHANKAR IAS PARLIAMENT
Information is Empowering