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I-2SEA Submarine Cable: India's AI-Ready Undersea Link to Southeast Asia

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WHY IN NEWS

On July 2, 2026, a consortium of Lightstorm (majority owner), Microsoft, Singtel and Tata Communications signed the Joint Build Agreement to construct the I-2SEA (India to Southeast Asia) Submarine Cable System, a 3,600 km high-capacity undersea fibre-optic cable purpose-built for AI and hyperscale cloud workloads.

WHAT IS THE I-2SEA SYSTEM?

The I-2SEA (India to Southeast Asia) Submarine Cable System is a next-generation undersea fibre-optic cable that will connect India's east coast directly to the two largest data hubs in Southeast Asia: Singapore and Kuala Lumpur (Malaysia). Unlike earlier cables designed mainly for voice and general internet traffic, I-2SEA is engineered from the ground up for artificial intelligence (AI) training workloads, Graphics Processing Unit (GPU) clusters and hyperscale cloud data movement.

The cable is scheduled to be Ready-for-Service (RFS) in the fourth quarter of 2029.

Route and Landing Stations

The 3,600 km cable will make landfall at two new landing stations on India's east coast, chosen for their proximity to fast-growing digital clusters:

LANDING STATION	STATE	STRATEGIC FUNCTION
Machilipatnam	Andhra Pradesh	Direct subsea path feeding the AI and data-centre clusters of Hyderabad
South Chennai	Tamil Nadu	A second diverse landing for route resilience (https://ujiyari.com/vocab/resilience/) and redundancy
Singapore	(Southeast Asia hub)	Anchor for regional cloud and AI ecosystem
Kuala Lumpur	Malaysia	Rapidly emerging data-centre destination

Having two Indian landing points (Machilipatnam and South Chennai) provides geographic diversity, so a fault or damage near one landing does not sever India's connectivity.

The Consortium and Technical Partners

ROLE	ENTITY
Majority owner and lead	Lightstorm (India)
Consortium partners	Microsoft, Singtel (Singapore), Tata Communications (India)
System supplier	NEC Corporation (Japan)
Marine installation partner	ASEAN Cableship Pte Ltd (ACPL), Singapore

The system uses a deep cable-burial strategy, targeting a three-metre burial depth across buried sections, to protect the cable from fishing gear, anchors and accidental damage, and to keep uptime high. The landing infrastructure at both Indian points is designed to be carrier-neutral, meaning multiple telecom operators can plug in rather than a single owner controlling access.

WHY SUBMARINE CABLES MATTER

About 95 per cent of all intercontinental data, including internet traffic, financial transactions and cloud services, travels through submarine cables rather than satellites. Satellites carry only a tiny fraction because they cannot match the capacity, speed (latency) or cost-efficiency of fibre on the seabed.

For AI specifically, moving enormous training datasets between GPU clusters requires very high bandwidth and low latency. A dedicated AI-ready cable such as I-2SEA lets Indian data centres, especially around Hyderabad, participate in the global AI economy as a compute and data-transit hub rather than merely a consumer of foreign cloud services.

Digital Sovereignty and Data Localisation

The project aligns with India's digital-sovereignty (https://ujiyari.com/vocab/sovereignty/) push, the idea that critical data about Indian citizens and businesses should be stored, processed and routed through infrastructure that India can secure and govern. Data localisation norms and the Digital Personal Data Protection framework make domestic and directly-connected data routes strategically valuable. Machilipatnam feeding Hyderabad's AI clusters is a concrete example of keeping high-value AI workloads on Indian soil.

ANALYSIS AND WAY FORWARD

Undersea cables are now recognised as critical national infrastructure, and their security has become a geopolitical concern. Recent sabotage and cable-cut incidents in the Red Sea and the Baltic Sea disrupted global data flows and exposed how vulnerable these lines are to both accidental anchor damage and deliberate (https://ujiyari.com/vocab/deliberate/) attack. The deep-burial design of I-2SEA is a direct response to this threat environment.

For India, the way forward includes: expanding domestic cable-landing-station capacity (India historically had far fewer landing stations than Singapore); streamlining the multi-agency clearance process for laying cables; building indigenous cable-repair and cable-ship capacity so India is not dependent on foreign vessels during a crisis; and coordinating with friendly nations to protect subsea infrastructure in the Indian Ocean Region. The I-2SEA cable strengthens India's ambition to become a trusted global data-transit and AI hub bridging South Asia and Southeast Asia.

UPSC RELEVANCE

GS Paper 3: Awareness in the field of IT and infrastructure, science and technology developments, and their applications; critical digital infrastructure and cyber-physical security.

GS Paper 2: India and its neighbourhood, effect of policies of developed and developing countries on India's interests; India-Southeast Asia (ASEAN) digital connectivity.

Prelims pointers:

- I-2SEA is a 3,600 km subsea cable; landing stations at Machilipatnam (Andhra Pradesh) and South Chennai; other ends at Singapore and Kuala Lumpur.
- Majority owner: Lightstorm; partners: Microsoft, Singtel, Tata Communications; system supplier NEC (Japan); marine partner ASEAN Cableship (ACPL).
- Ready-for-Service target: Q4 2029.
- About 95 per cent of intercontinental data travels via submarine cables.

Mains question: "Submarine cables carry nearly 95 per cent of the world's intercontinental data yet remain among the least protected pieces of critical infrastructure." Examine the strategic and security significance of subsea cables for India and suggest measures to secure them. (15 marks, 250 words)

FACTS CORNER

📌 FACTS CORNER, KNOWLEDGEPEDIA

I-2SEA full form: India to Southeast Asia Submarine Cable System, a 3,600 km undersea fibre-optic cable, Joint Build Agreement signed July 2, 2026.

Consortium: Lightstorm (majority owner) with Microsoft, Singtel and Tata Communications; NEC Corporation of Japan is the system supplier; ASEAN Cableship Pte Ltd (ACPL) is the marine installation partner.

Indian landing stations: Machilipatnam (Andhra Pradesh), which feeds Hyderabad's AI and data-centre clusters, and South Chennai (Tamil Nadu). Overseas ends: Singapore and Kuala Lumpur (Malaysia). Ready-for-Service targeted for Q4 2029.

Purpose-built for AI: designed for AI training workloads, GPU clusters and hyperscale cloud data, not just general internet traffic.

Why cables matter: about 95 per cent of all intercontinental data moves through submarine cables; deep three-metre burial protects against anchor and fishing damage.

Security context: cable-cut and sabotage incidents in the Red Sea and Baltic Sea have made subsea cables a recognised critical-infrastructure and geopolitical concern.

India angle: supports India's digital-sovereignty and data-localisation push and its ambition to be a global data-transit and AI hub linking South Asia and Southeast Asia (ASEAN).

Sources: The Hindu (https://www.thehindu.com), Data Center Dynamics (https://www.datacenterdynamics.com), Tata Communications (https://www.tatacommunications.com)

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