

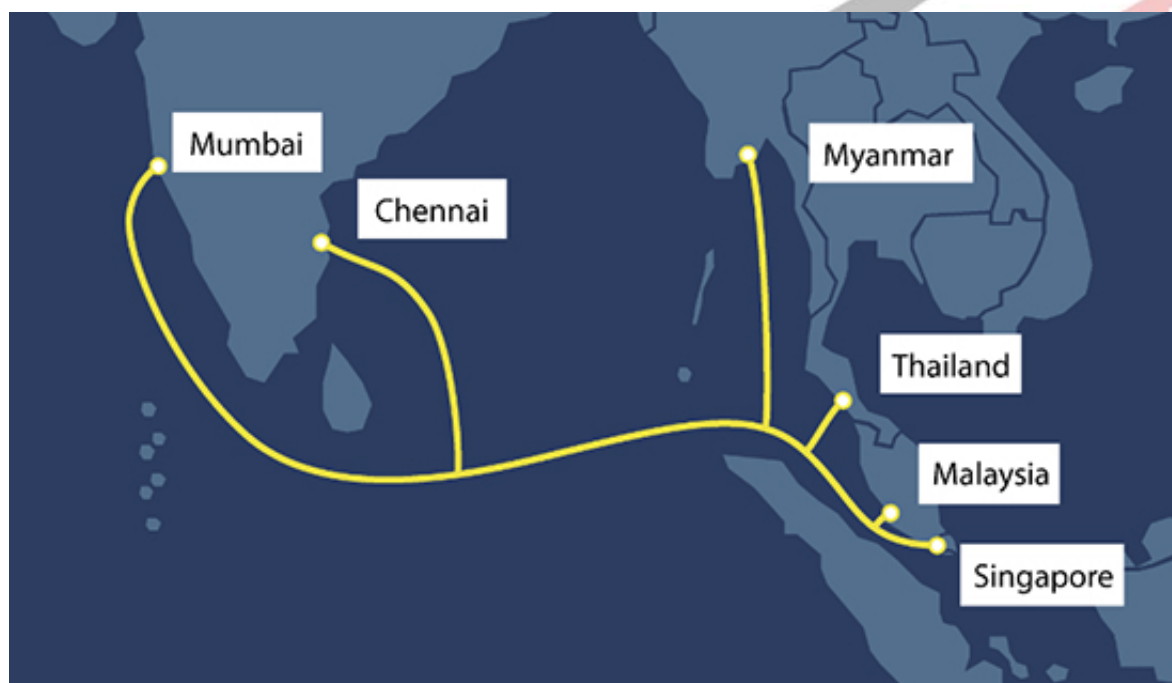


MIST Submarine Cable System

Why in News?

Recently, the Ministry of Environment, Forest and Climate Change recommended **MIST (Myanmar/Malaysia-India-Singapore Transit) Submarine Cable System** for [Coastal Regulation Zone \(CRZ\)](#) clearance.

- This will be the **17th** such [Optical Fibre Cable System](#) to land in Mumbai and is expected to be ready for service in 2023.



What is the MIST?

- MIST is **an international submarine cable communication network**, traversing the undersea to connect India with other Asian countries such as **Myanmar, Thailand, Malaysia and Singapore**.
- It is an **8,100km-long undersea transnational fibre optic cable system** connecting Mumbai to Singapore, via Chennai.
 - The cable system **will terminate in Mumbai at Versova beach**.
- Of the total length of the international undersea cable system, **523.50 km will be laid along the Tamil Nadu coastal waters** about 12 nautical miles offshore. and about 202.06 km in the CRZ boundary of Maharashtra.

What is the Significance of the Project?

- MIST cable system will provide **secure, reliable, robust and affordable telecom facilities in**

Asia.

- It will **boost telecom connectivity between India and other Asian countries**, namely Myanmar, Thailand, Malaysia and Singapore.
- This is a project of immense importance to global communications and will have a **minimal footprint on Mumbai's coastal environment**.
- It would also **help avoid conflict with various stakeholders** considering the increasing number of international cable landing on the Chennai coast.

What are the Similar Upcoming Projects?

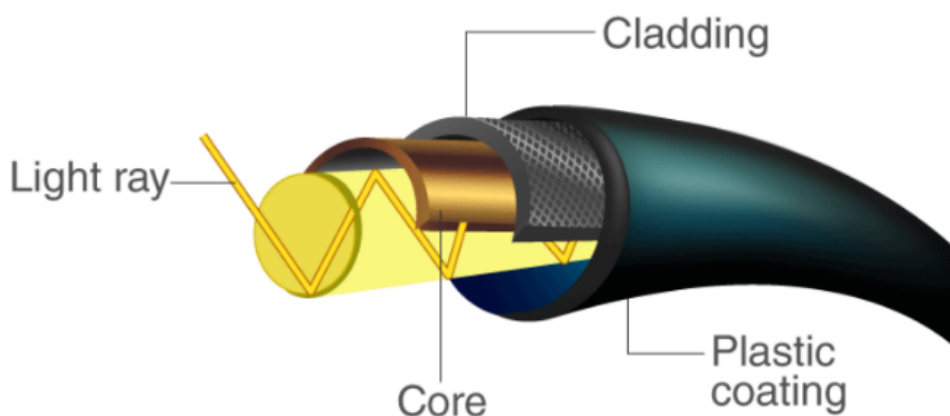
- **Reliance Jio Infocomm's India Asia Xpress (IAX)**, connecting India to the Maldives, Singapore, Sri Lanka and Thailand.
- **India Europe Xpress (IEX)**, connecting India to Italy via Saudi Arabia and Greece.
- **SeaMeWe-6 project**, owned by a consortium of telecom providers, will connect Singapore to France via India, Bangladesh, Maldives.
- **Africa2 cable**, which will connect India with the United Kingdom via several African countries.

What is a Submarine Communications Cable?

- It is a cable laid on the **seabed between land-based stations to transmit telecommunication signals** across stretches of ocean and sea.
- Modern submarine cables **use fiber-optic technology**.
- The optical fibre elements are typically coated with plastic layers and contained in a protective tube suitable for the environment where the cable will be deployed.
- Compared to satellites, using internet connection through submarine cables is **more reliable, cost efficient and of larger capacity**.

What is an Optical Fibre?

- Optical fibre is **the backbone of the digital infrastructure** — the data is transmitted by light pulses travelling through long strands of thin fibre.
- Metal wires are preferred for transmission in optical fibre communication as signals travel with fewer damages.
 - The optical fibre works on the principle of **total internal reflection (TIR)**.
- Light rays can be used to transmit a huge amount of data (In case of long straight wire without any bend).
 - In case of a bend, **the optical cables are designed such that they bend all the light rays inwards (using TIR)**.



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