



IRNSS: Part of World Wide Radio Navigation System

Why in News

The **Maritime Safety Committee** (MSC) of the [International Maritime Organisation](#) (IMO) has recognised the [Indian Regional Navigation Satellite System](#) (IRNSS) as a component of the **World Wide Radio Navigation System (WWRNS)** during its 102nd session held virtually.

- The IMO is the **United Nations specialised agency** responsible for the safety and security of shipping and the **prevention** of marine and atmospheric **pollution** by ships.

Key Points

- India has become the **fourth country** in the world to have its independent regional navigation satellite system recognised by the IMO as a part of the **World Wide Radio Navigation System (WWRNS)**.
- The other three countries that have its navigation systems recognised by the IMO are the **USA, Russia and China.**
- **Significance:**
 - The IMO has accepted IRNSS as an **alternative navigation module in Indian waters**. It was in use only on a pilot basis earlier but **now all merchant vessels are authorised to use it, even small fishing vessels.**
 - The navigation system **can now replace GPS in the Indian Ocean waters upto 1500 km** from the Indian boundary.
 - IRNSS is a **regional and not a global navigation** system.
 - With the recognition as a component of the WWRNS, the Indian navigation system is similarly placed as **Global Positioning System (GPS - USA)**, most commonly used by marine shipping vessels across the world or the Russian Global Navigation Satellite System (**GLONASS**).
 - It is being considered as a significant achievement towards the **'Atmanirbhar Bharat'** initiative.
 - Apart from navigational benefits it has strategic importance as it reduces overdependence on the global navigation system.
- **Important Navigation Systems:**
 - **USA navigation system:** The [Global Positioning System](#) (GPS) is a satellite-based navigation system that consists of 24 orbiting satellites.
 - **Glonass is Russian** Satellite Navigation System considered as a counterpart to GPS of the USA.
 - [BeiDou Navigation Satellite System](#) of **China:** A hybrid constellation consisting of around 30 satellites in three kinds of orbits.
 - **Galileo** is **Europe's** Global Navigation Satellite System.

Indian Regional Navigation Satellite System

- IRNSS is an independent regional navigation satellite system developed by the **Indian Space Research Organization** (ISRO).
- The main objective is to provide reliable position, navigation and timing services over India and its neighbourhood.
- The IRNSS constellation **was named as “NavIC”** (Navigation with Indian Constellation) by the Prime Minister.
- NavIC provides **two types of services**:
 - **Standard Positioning Service** (SPS) is meant for the general public.
 - **Restricted Service** (RS) is an encrypted service meant for authorised users and agencies.
- Unlike the widely used GPS which includes 24 satellites, NavIC has **8 satellites** and their range is within India and its adjoining regions extending up to **1,500 km** from the **country's border**.
- Technically satellite systems with more satellites provide more accurate positioning information. However, compared to GPS which has a position **accuracy of 20-30 metres**, the NavIC is able to pinpoint location to an estimated accuracy of **under 20 metres**.

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