NaviC

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Why is in news? Centre informs that the usage of Indian Regional Navigation Satellite System (NaviC system) has increased in India

The Centre today informed that the usage of **Indian Regional Navigation Satellite System** (NaviC system) has increased in India.

NavIC finds utilisation in national projects like public vehicle safety, power grid synchronisation, real-time train information system, fishermen safety, etc.

Other upcoming initiatives viz. common alert protocol-based emergency warning, time dissemination, geodetic network, unmanned aerial vehicles, etc. are in the process of adopting NavIC system.

Department of Space is constantly engaged with the manufacturers of mobile phones and chipsets to support them technically for adding NavIC compatibility in their devices.

NavIC system provides signals for positioning. Applications like Google Maps can utilize the position obtained through NavIC or other similar system and display it on a map or other user interface for easy visualization.

Signals provided by NavIC system are agnostic to the end-user application. Hence, a mobile phone which has NavIC compatibility automatically uses NavIC signals when showing position on mapsPerformance of NavIC system is at par with the other positioning systems.

NaviC:

The **Indian Regional Navigation Satellite System** (IRNSS), with an operational name of NavIC, is an **autonomous regional satellite navigation system** that provides accurate real-time positioning and timing services.

It covers India and a region **extending 1,500 km** (930 mi) around it, with plans for further extension.

An extended service area lies between the primary service area and a rectangle area enclosed by the 30th parallel south to the 50th parallel north and the 30th meridian east to the 130th meridian east, 1,500–6,000 km (930–3,730 mi) beyond borders.

The system currently consists of a constellation of eight satellites, with two additional satellites on ground as stand-by.

There are a total of eight satellites however only seven remain active. Three satellites in **geostationary orbit** and four satellites in **geosynchronous orbit**.

The constellation is in orbit as of **2018**.

NavIC will provide two levels of service, the "standard positioning service", which will be open for **civilian use**, and a "**restricted service**" (an encrypted one) for authorised users (including the military).

NavIC-based trackers are **compulsory on commercial vehicles in India** and **some consumer mobile phones** with support for it have been available since the first half of 2020.

It was recognised by the **International Maritime Organization** (IMO) as a part of the World-Wide Radio Navigation System (WWRNS) for operation in the Indian Ocean Region in 2020.

Further with extensive coverage, one of the stated future **uses of the project includes sharing of the project with the SAARC nations**. This will help in integrating the regional navigation system further and a diplomatic goodwill gesture from India towards countries of the region.

Four global systems: GPS from the U.S, GLONASS from Russia, Galileo from European Union, BeiDofrom China.

Two regional systems: NavIC from India, QZSS from Japan.

Potential Uses:

Terrestrial, aerial and marine navigation;

Disaster management;

Vehicle tracking and fleet management (especially for mining and transportation sector);

Integration with mobile phones;

Precise timing (as for ATMs and power grids);

Mapping and geodetic data capture.