



# MoU for Cooperation on Satellite- Based Naval Applications

## Why in News?

Recently, Memorandum of understanding (MoU) has been signed between the [Space Applications Centre \(ISRO\)](#) and the [Indian Navy](#) on data sharing and cooperation on Satellite-based Naval Applications in [Oceanology](#) and [Meteorology](#).

## What are the Key Highlights of The MoU?

- It will **enhance collaboration** and would initiate a **common platform of mutual cooperation**.
- The scientific advancements by Space Applications Centre would be **synergized with the Indian Naval efforts to keep the nation's defence in step with rapid development in the field of Satellite Data retrieval and applications**.
- **Cooperation would include various dimensions:**
  - Sharing of non-confidential observational data.
  - Operational exploitation of Space Applications Centre (SAC)-generated **weather products and provisioning of Subject Matter Experts (SME) for the processing of satellite data towards the development of new tools**.
  - Providing Calibration and validation of ocean models.

## What is Space Applications Centre?

- **About:**
  - **Space Applications Centre** is a major **research and development centre of the Indian Space Research Organisation (ISRO)**.
    - It is **situated in Ahmedabad** and performs multi-disciplinary activities.
  - The core competence of the Centre lies in the **development of space-borne and air-borne instruments/payloads** and their applications for national development and societal benefits.
    - These applications are in diverse areas and **primarily meet the communication, navigation, and remote sensing needs of the country**.
- **Achievements:**
  - The Centre also contributed significantly to scientific and planetary missions of ISRO like [Chandrayaan-1](#), **Mars Orbiter Mission**, etc.
  - The communication transponders developed at this Centre for **Indian National Satellite (INSAT)** and [Geo Synchronous Satellite \(GSAT\)](#) series of satellites are used by the government and private sector for VSAT, DTH, Internet, broadcasting, telephones, etc.

## UPSC Civil Services Examination Previous Year Question (PYQ)

### Prelims

**Q. Satellites used for telecommunication relay are kept in a geostationary orbit. A satellite is said to be in such an orbit when: (2011)**

1. The orbit is geosynchronous.
2. The orbit is circular.
3. The orbit lies in the plane of the Earth's equator.
4. The orbit is at an altitude of 22,236 km.

**Select the correct answer using the codes given below:**

- (a) 1, 2 and 3 only  
(b) 1, 3 and 4 only  
(c) 2 and 4 only  
(d) 1, 2, 3 and 4

**Ans: (a)**

**Exp:**

- Satellites used for telecommunication relay are kept in a geostationary orbit. If this satellite is observed from a particular position on the ground, it remains stationary at the same spot. It plays an instrumental role in global communications and weather forecasting.
- A geo-synchronous orbit is an orbit around the Earth, which has an orbital period that matches the Earth's rotation, i.e., 24 hours. A geo-stationary orbit is a type of circular geo-synchronous orbit, which encircles the equator (i.e., directly above the equator). Hence, 1 is correct.
- **As the geo-stationary orbit lies directly over the equator and in the same plane as that of the Earth's equator, it encircles the Earth in a circular orbit. Hence, 2 and 3 are correct.**
- A geostationary orbit is 35,786 km (i.e., 22,236 miles) above the Earth's surface. Hence, 4 is not correct. **Therefore, option (a) is the correct answer**

**Source: PIB**

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