

# Science & Tech

## Topic - International Space Mission GPS

GPS (Global Positioning System)

Navigation based

[ Global GPS      Regional GPS ]

↓  
MEO / Inclined

Near to Equator  
(GEO, GTO)

GPS → Work?

↳ Through the help of imaginary lines

Latitude  
Longitude  
+  
Altitude

1970's - GPS - NAVSTAR

"Navigation Satellite and Ranging" (US)

Military  
+  
Civilian

⇒ GLONASS (Global Navigation Satellite System)

⇒ BeiDou  
(Regional)

COMPASS - By 2020  
(GLOBAL)

⇒ Galileo  
(EU)

Regional

2020  
Globalised

②

Japan France

2020+

INDIAN

GPS

Regional GPS

~~Global GPS~~

No target

1. GAGAN - GPS Aided Geogaugmented Navigation.

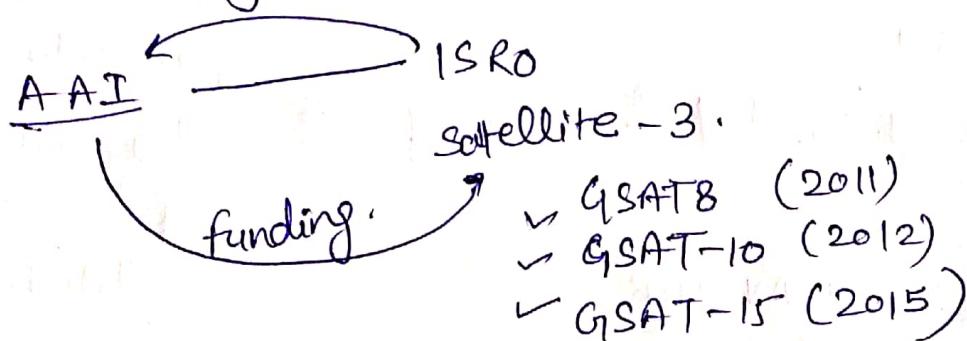
• 1st Regional GPS of India.

• also called as SBAS (Satellite based augmentation system).

• To modernise the air traffic

• AAI & ISRO worked together for GAGAN

{ Airport Authority of India }



# IRNSS (Indian Regional Navigation Satellite System).

Govt of India - ~~2006~~

Navigation Satellite System).

Two System

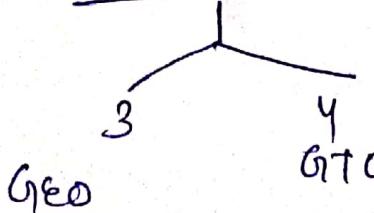
① SPS (Standard Position System)

↳ Civilian uses

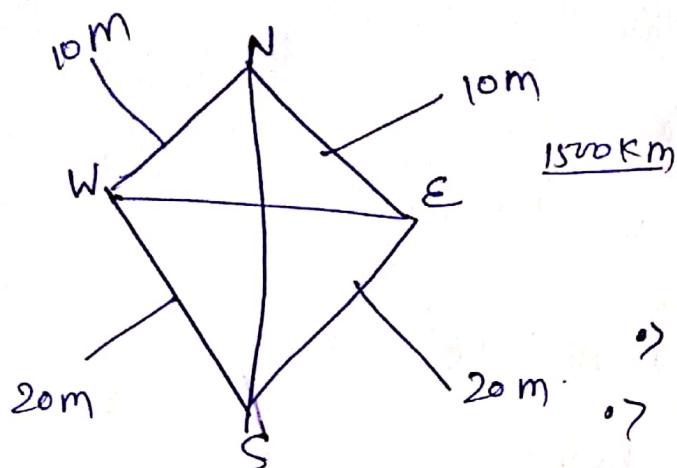
② PPS (Precision Positioning System)

↳ Encrypted

7 Constellation



2013 → dots ✓



Resolution  
(Clarity classed)

- ⇒ Movement of troops
- ⇒ Terrorist activity
- ⇒ Coastal Region.

# 2014 -

NAVIC - Navigation Indian Constellation.  
↓  
Dedicated to fishermen of India.

Bhuvan = Wikinepia ————— 2009  
of  
India

- ⇒ also see Boundary.
  - ⇒ Weather detection.
  - 3 Satellites Constellation → Cartosat-I & II }  
ResourceSat - I }
- NRSC/NIRSA - it is the coordination agency for Bhuvan app.

④

HST - (Hubble Space Telescope)

TMT - (Thirty Meter Telescope)

ISS - (International Space Station)

# HST → Launched in LEO in 1990.

- 2015
- \* Study about Supernova
  - Information about Comet
  - Study of Black hole

# TMT — China  
Japan  
Canada  
India } + USA

Mauna Kea

~~Maunakea Hawaii~~  
Island

TMT setup at this Island

# ISS (International Space Station)

(Human Creature / Research place in space at LEO.)

USA - NASA  
Russia Roscosmos  
Canada - CSA  
Japan - JAXA  
Europe - ESA

} Participating in ISS

ISS → place of Microgravity Environment.

- Physics (Superconductivity)
- Human & Plant