

Network for space object Tracking and Analysis (NETRA)

- It is an early warning system in space to detect debris and other hazards to Indian satellites.
- The project estimated to cost Rs.400 crore, when in place, will **give India its own capability in space situational awareness (SSA)** like the other space powers — which is used to ‘predict’ threats from debris to Indian satellites.
- Experts says that it also goes so far as to serve as an unstated warning against missile or space attack for the country.
- The space agency says our SSA will first be for low-earth orbits or LEO which have remote-sensing spacecraft.
- Under NETRA, or Network for space object Tracking and Analysis, the ISRO plans to put up many observational facilities: connected radars, telescopes; data processing units and a control centre.
- They can, among others, spot, track and catalogue objects as small as 10 cm, up to a range of 3,400 km and equal to a space orbit of around 2,000 km.
- NETRA’s eventual goal is to capture the GEO, or geostationary orbit, scene at 36,000 km where communication satellites operate.

Space debris

- It could be floating particles from dead satellites or rocket parts that stay in orbit for many years.
- Satellite agencies agonise over even a speck of paint or fragment floating towards their spacecraft: it disables on board electronics and cripples the satellite worth several hundred crore rupees besides many services that run on it.
- Agencies constantly look for debris at the time of a launch and through the life of a satellite.

Currently what we are doing?

- Even now we do collision avoidance manoeuvres on our satellites.
- To do that we **depend on data from NORAD and others available in the**

public domain but we don’t get accurate [or comprehensive] information.

- By establishing an observation system of our own, we become part of the global network and can access precise data.
- **NORAD, or the North American Aerospace Defense Command**, is an initiative of the **U.S. and Canada** that shares selective debris data with many countries.

2. b

- In a landmark discovery, Archaeological Survey of India (ASI) experts claim they have found the exact location of Renati Cholas’ capital and debunked decades-old theory that the capital was in Karnataka.
- They claim the capital of Renati Cholas, who had ruled Renadu region in Rayalaseema and were the **first to use Telugu in administration and inscriptions instead of Sanskrit**, may be in modern-day Kamalapuram region in Kadapa district in Andhra Pradesh.
- The Telugu Cholas of Renadu (also called as Renati Cholas) ruled over Renadu region, the present day **Cuddapah district, Andhra Pradesh**.
- In another incident, a rare inscription dating back to the Renati Chola era has been unearthed in a remote village of Kadapa district recently.
- Going by the language and characters, the inscription was written in archaic Telugu.
- It was assigned to the 8th Century A.D., when the region was under the rule of Chola Maharaja of Renadu.

3. b

- **India and Russia** are scheduled to hold the bilateral naval exercise, **Indra 2020**, in the Andaman Sea, close to the strategic Strait of Malacca later this week.
- The situation arises amid high operational alert by the Indian Navy in the Indian Ocean Region (IOR) due to the ongoing standoff with China in Ladakh.
- The decision comes just after **India withdrew from the Kavkaz-2020**