A-SAT and ADTCR

Why in News

The Defence Research and Development Organisation (DRDO) displayed its **Anti-Satellite (A-SAT) missile** and the Air Defence Tactical Control Radar (ADTCR) during the 71st Republic Day parade.

- Additionally, the Indian Air Force 's (IAF) latest inductions, **Chinook heavy-lift helicopters** and **Apache attack helicopters**, took part in the Republic Day flypast.
- Moreover, the Army showcased its recent induction, the **155-mm Dhanush towed howitzer** and K9-Vajra self-propelled artillery gun.

A-SAT Missile

- **About the Missile**
  - It is an interceptor missile that destroys or jams satellites in space.
  - There are two types of A-SATs:
    - **Kinetic A-SATs,** like ballistic missiles, physically strike an object in order to destroy it.
    - **Non-Kinetic A-SATs** are the ones that use non-physical means to disable or destroy space objects, which include frequency jamming, blinding lasers or cyber-attacks.
  - The theoretical maximum range of A-SATs is limited which means satellites above 20,000 km are out of range.
- **India's Test of A-SAT Missile**
  - On 27th March, 2019, **India successfully conducted a Kinetic Anti-Satellite (A-SAT) missile test** from Dr. APJ Abdul Kalam Island launch complex (Odisha).
  - The A-SAT missile was developed by the DRDO under **Mission Shakti.**
    - Mission Shakti seeks to defend India's space assets and thus aims at strengthening India's overall security.
  - **India became the fourth country** to acquire such technology after USA, Russia, and China.
  - The A-SAT technology has a **'hit to kill' feature** which is developed for the first time in India. It enables to destroy an enemy satellite by directly colliding with it with pinpoint accuracy.

Air Defence Tactical Control Radar

- Air Defence Tactical Control Radar (ADTCR) is used for volumetric surveillance, detection, tracking and friend/foe identification of aerial targets of different types and transmission of prioritised target data to multiple command posts and weapon systems.
- It is also capable of **detecting very small targets and low flying targets.**

Source: TH