Anti Radiation Missile: Rudram-1

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Why in News

The **Defence Research and Development Organisation (DRDO)** has successfully flight tested **indigenously developed Anti Radiation Missile (Rudram-1).**

Key Points

- **About Anti Radiation Missiles:**
  - **Aim:** These are designed to detect, track and **neutralise the adversary's radar, communication assets** and other **radio frequency sources,** which are generally part of their air defence systems.
    - These can locate and target **any radiation emitting source.**
    - These can play a **key role in neutralising any jamming platforms of the enemy** or take out radar stations thereby **clearing a path for own fighters to carry out an offensive** and **also prevent own systems from being jammed.**
  - **Components:**
    - **Inertial navigation system:** A computerised mechanism that uses changes in the object's own position — coupled with GPS, which is satellite-based.
    - **'Passive homing head' for Guidance:** A system that can detect, classify and engage targets (radio frequency sources in this case) over a wide band of frequencies as programmed.

- **About Rudram-1:**
  - **Development and Test:** It is an **air-to-surface missile,** designed and **developed by** the **DRDO.**
    - DRDO conducted a successful test of the **New Generation Anti Radiation Missile (NGRAM)** also called the **Rudram-1** at the **Integrated Test Range (ITR)** in **Balasore** (Odisha).
    - Rudram-1 is the **first indigenous anti-radiation missile** of the country.
  - **Capability:** Once the missile locks on the target, it is **capable of striking accurately even if the radiation source switches off in between.**
  - **Operational Features:**
    - The missile, **integrated with SU-30 MkI aircraft,** has a **capability of varying ranges** based on the launch conditions.
      It can be adapted for launch from other fighter jets too.
    - It can be launched from **altitudes of 500 m to 15 km** and **speeds of 0.6 to 2 mach.**
- **Significance:**
  - Rudram has been developed for the **Indian Air Force - IAF's requirement** to enhance its **Suppression of Enemy Air Defence (SEAD) capability.**
  - Further, **modern-day warfare** is more and more **network-centric,** which means it comprises elaborate detection, surveillance and communication systems that are integrated with the weapons systems.
  - This is yet **another test of indigenously developed weapons systems** in addition to the recent tests of **Shaurya missile** or Hypersonic Technology Demonstrator Vehicle (HSTDV), which is an unmanned scramjet vehicle, or the test of flight test of a **Supersonic Missile Assisted Release of Torpedo (SMART) system.**

Source: PIB