Golden Dome

***Prelims**: Current events of national and international importance.*

Why in news?

Recently, President of United States revealed the ambitious 'Golden Dome' project a $175-billion futuristic missile defence shield using space-based interceptors.

- **Golden Dome** – It is a **multi-layered Air defence system** intended to protect U.S against air warfare.
- It is a **sophisticated integration of existing proven defense systems** rather than entirely new space-based weapons.
- It is inspired on **Israel's Iron Dome**, but expanded to cover land, sea, air, and space.

The Iron Dome is Israel's missile defence system which detects an incoming rocket, determines its path, and intercepts it.

- **Goal** - To protect the U.S. homeland using an advanced, multi-layered air and missile defense system
- It can detect and intercept cruise missiles, ballistic missiles, hypersonic missiles, drones, whether they're conventional or nuclear
- **Timeline** - It is planned to launch by January 2029.
- **Space-based system** – Thousands of small satellites to detect and intercept missiles from orbit—first of its kind.
- **Interceptors in space** – The system may deploy anti-missile interceptors in space to neutralize threats during the early launch phase.
- **Real-time surveillance** – It uses space-based sensors and radar to monitor global missile threats 24/7.
- **Multi-Domain defense** – It integrates land, sea, air, and space tech for a layered defense.
- It is likely to use AI algorithms, data fusion, and real-time decision-making tools for fast threat detection and neutralization.
- **Concerns –** It violates of principles of peaceful use of space and space-based weapons could violate Outer Space Treaty.
- It could trigger a new space-based arms race, with nations developing counter-space capabilities

Reference

The Indian Express| Golden Dome

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