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ENTRY OF PRIVATE PLAYERS IN NUCLEAR SECTOR AND RELATED CONCERNS

Context

- The **Atomic Energy Regulatory Board (AERB)** Chairperson has assured that nuclear safety standards will remain uncompromised despite **private sector participation in the nuclear energy sector.**

Status of Nuclear Power in India

- **Installed Capacity:** India has **25 active nuclear reactors** with a total capacity of 8.7 gigawatt-electric (GWe). Nuclear power reactors in the country generated 56,681 million units of energy in 2024-25.
- **Consistent Contribution:** Nuclear power has always contributed about 3% of India's overall electricity production.
- **Planned Expansion**: Nuclear capacity in India is planned to increase by around 3x in the next few years.
  - Through international cooperation, indigenous 700 Megawatt (MW) reactors and 1,000 MW reactors are under development, and the installed capacity is expected to touch 22.38 GW by 2031-32.
- **International Cooperation:** India has signed Inter-Governmental Agreements (IGAs) on Civil Nuclear Cooperation for peaceful purposes with 18 countries, indicating the rising worldwide confidence in India's nuclear program.
  - **Reactors Under Construction:** 10 reactors with around 8 GWe of capacity are under construction. Another 10 units with some 6.6 GWe of capacity are in the pre-project stage.
  - **Goal:** India's plans to increase its nuclear power capacity from the current 8,180 MW to 22,480 MW by 2031-32 and eventually 100 GW by 2047.

Need for Private Players in Nuclear Sector

- **India's Targets:** To reduce the emission intensity of its GDP by 45% by 2030 from the 2005 level.
  - To achieve 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.
- **Existing Infrastructure is Lacking:** The public sector infrastructure consisting primarily of the Nuclear Power Corporation of India Ltd (NPCIL), the Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI) and the NPCIL-NTPC joint venture Anushakti Vidhyut Nigam Limited (ASHVINI) may prove insufficient.
  - If India needs to increase capacity to 100 GW participation of more players is needed.

Governance Under SHANTI Act

- India's nuclear sector is governed by the **Atomic Energy Act, 1962,** under which only **government-owned entities such as NPCIL** can generate and supply nuclear energy.
  - There has been no private sector involvement in India's nuclear power sector so far.
- **Control of Sensitive Domains:** The Government retains exclusive authority over **the nuclear fuel cycle, waste management, and all security-related operations.**
- **Statutory Body:** Grants formal statutory recognition to the **Atomic Energy Regulatory Board (AERB**) to strengthen regulatory independence and authority.
- **Conditions for Private Stakeholders:**
  - They have to find the land and incur the entire capex as well as opex, including taxes.
  - After completion of the plant, the asset will have to be transferred to NPCIL for operation.
  - The power plant will be given the status of captive generating plant and the private entity will have full right on the electricity generated from the plant.
  - The firm will also be allowed to sell the power to other users.
- **Licensing:** A new entity interested in constructing and operating a nuclear power plant has to **secure the licence from the Department of Atomic Energy (DAE).**
  - Once this licence is issued, **it must then approach the AERB**, which will scrutinise the design from a safety point of view and the suitability of the site before issuing the safety authorisation for siting, followed by the safety authorisation for construction.

Arguments in Favour of Private Sector Participation in Nuclear Power

- **Improved Efficiency and Innovation:** Private companies bring technological advancements, operational efficiency, and innovation, potentially reducing costs and improving safety standards.
- **Increased Investment:** Private players can attract more capital, helping to address the financial challenges of large nuclear projects.

- **Faster Project Execution:** Private entities, driven by competition and profit incentives, can complete nuclear projects faster and more effectively compared to government processes.
- **Expertise and Global Standards:** Private companies can bring global best practices, cutting-edge technology, and expertise to the nuclear industry, improving overall standards.
- **Job Creation:** The entry of private players can lead to increased employment opportunities in the nuclear sector, from construction to operations.

Arguments Against

- **Safety and Security Risks:** Private players may prioritize cost-cutting over rigorous safety measures, potentially risking catastrophic accidents.
- **Lack of Transparency:** Private companies may not be as transparent as public institutions, leading to a lack of accountability in the management of sensitive nuclear technologies.
- **National Security Concerns:** Involving private entities in nuclear power generation could raise concerns about the potential for foreign ownership, control, or influence over critical national infrastructure.
- **Limited Regulatory Control:** Ensuring strict regulatory oversight of private companies might be challenging, potentially leading to lapses in compliance with safety, environmental, and operational standards.
- **Profit Motive Over Public Welfare:** Private companies may prioritize profitability over public welfare, potentially compromising on environmental protections, worker safety, and the long-term sustainability of nuclear energy.

Way Ahead

- **Clear Regulatory Framework:** Establish a robust regulatory environment to ensure safety, compliance, and transparency, addressing concerns about accountability and national security.
- **Public-Private Partnerships (PPPs)**: Promote partnerships where the government maintains oversight, while private players handle operations, innovation, and investment, ensuring a balance of interests.
- **Gradual Implementation:** Start with pilot projects and small-scale initiatives to test private sector involvement, ensuring risk management before large-scale implementation.

Source: TH

ASSET MONETISATION

Context

- **An inter-ministerial group (IMG)** has recommended **asset monetisation proposals** worth over Rs 1,100 crore for consideration and approval by the **Cabinet-delegated Alternative Mechanism (AM).**

About

- The IMG reviewed **proposals primarily involving surplus land and building assets** of **Central Public Sector Enterprises (CPSEs).**
- The recommendations are aimed at **facilitating the productive use of surplus and underutilised public assets** while **generating economic value for government entities.**
- The proposals will now be placed before the **Cabinet-delegated Alternative Mechanism** for consideration and approval.

Asset Monetization

- Asset Monetization **involves creation of new sources of revenue** by unlocking the value of hitherto unutilized or underutilized public assets.
- **These assets could be categorized, broadly, into the following classes:**
  - Land and Buildings, brown-field operational assets such as pipelines, roads, mobile towers etc., financial assets like equity shares, debt securities, other hybrid/ structured finance asset units etc.
  - **Decision-making bodies:**
    - An Alternative Mechanism (AM), comprising Union Finance Minister, Minister of Road Transport and Highways and Minister of the concerned Administrative Ministry.
    - An Inter-Ministerial Group (IMG) Chaired /Co-Chaired by Secretary, DPE and Secretary of the Administrative Department.
    - Representatives of the Department of Expenditure, Department of Legal Affairs, Ministry of Corporate Affairs and Financial Advisor (DPE) not below the rank of JS shall be members of the IMG.
    - IMG can co-opt any other member as per its discretion.

Asset Monetisation Programme

- The initiative forms part of the **government's broader asset monetisation programme,** which

seeks to help CPSEs and other government entities realise the **economic potential of surplus assets** through systematic assessment, professional transaction preparation and competitive price discovery.

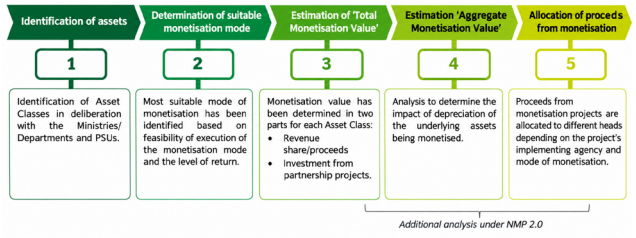
- **The National Land Monetization Corporation (NLMC),** the government's specialised agency for monetising surplus land and other non-core assets, **plays a key role in facilitating the process.**
  - It works with concerned ministries, departments and asset-owning entities.
  - It undertakes asset assessment, due diligence, valuation, transaction structuring and market-oriented monetisation activities.
- The government aims to **improve public asset management, ensure transparency in monetisation and maximise the value of surplus assets** to support investment and economic development.

About NLMC

- The National Land Monetization Corporation (NLMC) is a **wholly owned Government of India company** under the administrative control of the **Department of Public Enterprises, Ministry of Finance.**
- It was established following an announcement in the **Union Budget 2021-22.**
- NLMC facilitates the **monetisation of surplus land and other non-core assets of CPSEs and Government entities** through professional transaction advisory, due diligence, valuation and transparent, competitive monetisation processes.

About National Monetisation Pipeline 2.0

- **The Union Budget 2025-26,** identified **monetisation of operating public infrastructure assets** as a key means for **sustainable infrastructure financing.**
- The Budget provided for preparation of a **'National Monetisation Pipeline 2.0 (NMP 2.0)'.**
- **NMP 2.0 aims to** provide a medium-term roadmap of the programme for public asset owners; along with visibility on potential assets to the private sector.
- **Framework:** Asset monetisation shall comprise elements such as transfer of assets for a limited period, divestment of portions of listed entities to unlock additional capital, securitisation of cash flows or strategic commercial auctions.
- NMP 2.0 is divided into five stages:



The proceeds from asset monetisation projects are allocated to four different heads:

- **Consolidated Fund of India:** Any type of Government revenue from a monetisation project that is implemented by a Central Ministry (for example, revenue share, premium, lease rental, royalty) shall flow to the Consolidated Fund of India.
- **PSU/Port Authorities allocation:** Proceeds from monetisation activities undertaken by PSUs shall accrue to the concerned PSU (similar norm shall be followed for Major Port Authorities).
- **State Consolidated Fund:** Certain projects under NMP 2.0 are expected to generate revenues to the State Governments, especially those belonging to the mines and coal sectors (royalty payments). These proceeds shall accrue to the State Consolidated Fund.
- **Direct investment (private):** This head shall record the investment by the private sector in monetisation projects that involve construction and/or major maintenance components.

Source: DD

HOW DO TOKAMAKS WORK TO MAKE NUCLEAR FUSION POSSIBLE?

Context

- Recent developments in nuclear fusion research have renewed interest in fusion power, particularly in plasma confinement using tokamaks.

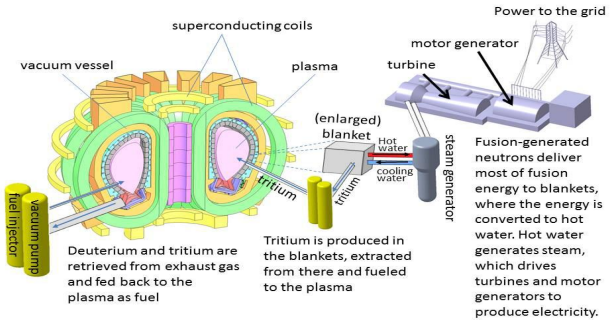
About Tokamak

- **A tokamak is a device (experimental fusion reactor)** that uses magnetic fields to confine extremely hot plasma within a toroidal (doughnut-shaped) vacuum chamber.
- **Origin:** Developed in the Soviet Union during the early 1950s, primarily by **physicists Igor Tamm and Andrei Sakharov.**
- **Meaning:** The word Tokamak is derived from a Russian abbreviation for 'toroidal chamber containing magnetic coils'.

- **Plasma is the fourth state of matter,** made up of unbound electrons and positively charged ions. It is prepared by heating a gas to a very high temperature.

How Does a Tokamak Work?

- **Creation of Superheated Plasma:** Hydrogen isotopes, primarily deuterium and tritium, are heated to temperatures of around **150 million °C.**
  - At these temperatures, their nuclei can overcome electrostatic repulsion and undergo nuclear fusion.
- **Magnetic Confinement through Magnetic Fields:** Since no physical material can withstand the extreme temperatures of plasma, a tokamak uses powerful magnetic fields to keep it away from the reactor walls.
  - **External magnetic coils generate a magnetic field** around the toroidal chamber, while an electric current induced through the plasma by a central solenoid generates a second magnetic field.
  - The interaction of these magnetic fields **produces helical magnetic field lines** that help to **confine the plasma and minimise particle losses.**
- **Nuclear Fusion Reaction:** Deuterium and tritium nuclei combine to form helium and a high-energy neutron, releasing energy.



How Is Electricity Generated?

- **Energy release:** Approximately 80% of the energy released during deuterium-tritium fusion is carried by neutrons, while **20%** is carried by **helium nuclei (alpha particles).**
- **Heat generation:** High-energy neutrons strike the surrounding blanket, transferring their energy as heat.
- **Tritium breeding:** The blanket contains lithium, which reacts with neutrons to produce tritium, helping replenish the reactor's fuel.
- **Electricity generation:** A coolant transfers the heat to a steam-generation system, which drives turbines to generate electricity.

Why haven't tokamaks produced energy so far?

- **Extreme temperature requirements:** Maintaining plasma at temperatures exceeding **100 million °C** is technically challenging.
- **Plasma instability:** Plasma can develop instabilities that lead to energy and particle losses, disrupting confinement.
- **Material limitations:** Reactor-facing components must withstand intense heat, radiation and neutron bombardment.
- **Tritium availability:** Tritium is scarce and radioactive, requiring reliable breeding and fuel-handling systems.
- **High costs:** Constructing and operating fusion reactors requires advanced materials, superconducting magnets and sophisticated control systems.

Major Developments in Tokamak Technology

- **International Thermonuclear Experimental Reactor (ITER):** A major international collaboration involving seven members; **China, the European Union, India, Japan, South Korea, Russia and the United States.**
  - Located at **Cadarache, France,** it aims to demonstrate the scientific and technological feasibility of fusion energy.
  - It is designed to produce **500 MW of fusion power** using 50 MW of external plasma heating power (a fusion energy gain factor, Q, of 10).
  - Under its revised baseline, deuterium-tritium operations are planned for 2039.
- **China's EAST Tokamak:** The Experimental Advanced Superconducting Tokamak (EAST) in China sustained high-confinement plasma for 1,066 seconds in 2025.
  - However, EAST has not achieved net energy production.

India's Progress in Tokamak Research

- The two main machines are at the **Institute for Plasma Research (IPR) in Gandhinagar.**
  - **ADITYA**, India's first tokamak, began operating in **1989** and was rebuilt as **ADITYA-U,** which resumed operations in **2017.**

- **SST-1, the Steady State Superconducting Tokamak**, produced its first plasma in 2013 and uses superconducting magnets.
- **PRAGYA:** An experimental compact tokamak unveiled by **Bengaluru-based Pranos Fusion**, aimed at developing capabilities in plasma control and magnetic confinement.

- **ITER participation:** India is a member of ITER and contributes through the development and supply of several specialised reactor components.

Alternatives to Tokamak Technology

Technology	Key features	Example
Stellarator	Uses complex external magnetic coils to confine plasma without relying on a large plasma current.	Wendelstein 7-X, Germany
Inertial Confinement Fusion	Uses powerful lasers or particle beams to compress a small fuel pellet, initiating fusion.	National Ignition Facility, USA
Magnetic Mirror	Uses magnetic fields to confine plasma, with stronger fields at the ends to reflect charged particles.	Mirror fusion experiments

Concluding remarks

- Tokamak technology represents a major pathway to controlled nuclear fusion.
- However, achieving stable plasma confinement, sustainable fuel supply and a positive overall energy balance remains essential before fusion can become a commercially viable source of clean energy.

Source: TH

INDIA'S PUSH TOWARDS DEBRIS-FREE SPACE BY 2030

Context

- The Union Minister of State for Science and Technology announced a vision of achieving debris-free space by 2030 along with inaugurating **Base 1**, a space robotics facility established by **Cosmoserve Space in Hyderabad.**

What is Space Debris?

- **Space debris is defined as** all non-functional, man-made objects, including fragments and elements thereof, in Earth orbit or re-entering into Earth's atmosphere.
- **Kessler Syndrome:** It is a theoretical scenario in which a cascade of collisions between artificial objects in low Earth orbit leads to a rapidly increasing amount of space debris, making the use of near-Earth space impossible for an extended period of time.

Dangers of space junk

- **High Orbital Velocity:** According to NASA, debris can travel at speeds of up to **18,000 mph**, which is 10 times faster than the speed of a bullet.
- **Collision Risks:** High-speed debris can collide with operational satellites and spacecraft, damaging critical systems or rendering them non-functional.
- **Threat to Human Spaceflight:** Increases the risk to astronauts aboard spacecraft and space stations, including the International Space Station (ISS).
- **Economic Losses:** Can increase satellite replacement, repair, insurance and space mission costs.

International agreements on space debris

- **The Space Liability Convention of 1972:** It defines responsibility in case a space object causes harm.
  - The treaty states that "a launching State shall be absolutely liable to pay compensation for damage caused by its space objects on the surface of the earth or to aircraft," and liable for damage due to its fault in space.
- **Zero Debris Charter:** Twelve nations and the European Space Agency (ESA) have signed the **Zero Debris Charter** at the ESA/EU Space Council. It aims to become **debris neutral in space by 2030**.

India's Initiatives Towards Space Debris Management

- **Active Debris Removal (ADR):** India is developing indigenous capabilities to capture and remove non-functional satellites and other debris from orbit.
- **Project NETRA (Network for space object Tracking and Analysis),** an early warning system, was initiated by ISRO to help detect space hazards to Indian satellites.

- The project is expected to give India its own capability in **space situational awareness (SSA)**, something that other space powers already have.
- The SSA is used to predict threats from debris to Indian satellites.

- **The ISRO System for Safe and Sustainable Operations Management (IS4OM)** was established in 2022 to continually monitor objects posing collision threats and to mitigate the risk posed by space debris.
- **Mission EMBRACE** was a 2026 space mission by Indian startup Cosmoserve Space that tested the world's first in-orbit soft robotic capture mechanism aboard Skyroot Aerospace's Vikram-1 rocket.
  - However, the robotic petals failed to deploy as intended due to an apparent mechanical issue under space conditions.

Challenges in Space Debris Removal

- **High costs:** Developing and deploying debris-removal missions involves substantial financial and technological investments.
- **Regulatory issues:** Under the Outer Space Treaty, space objects remain under the jurisdiction and control of their launching states, complicating their removal without consent.
- **International coordination:** Lack of universally binding and enforceable standards for debris removal creates coordination challenges.
- **Dual-use concerns:** Technologies used for debris removal could also have anti-satellite applications, raising security concerns.

Way Ahead

- **Strengthen indigenous research** in robotic capture, autonomous navigation and satellite servicing technologies.
- **Develop internationally coordinated standards** for responsible satellite disposal and active debris removal.
- Ensure compliance with the **UN Committee on the Peaceful Uses of Outer Space (COPUOS) Space Debris Mitigation Guidelines.**
- **Encourage Design for Demise**, post-mission disposal and de-orbiting technologies to minimise the creation of future debris.

Source: PIB

NEWS IN BRIEF

BAHAMAS JOINS ISA

Context

- The Bahamas has joined the International Solar Alliance (ISA) as its 116th member.

What is the International Solar Alliance?

- The ISA was jointly launched by **India and France** on the side-lines of the 21st Conference of Parties (COP21) meeting of the United Nations Framework Convention on Climate Change (UNFCCC), which was held in Paris in **2015**.
- It is **Headquartered in Gurugram**, Haryana.
- The alliance aims to accelerate the global adoption of solar energy through its **'Towards 1000' strategy**, which seeks to:
  - Mobilize **USD 1,000 billion** of investments in solar energy solutions by 2030.
  - Facilitate the installation of **1,000 gigawatt (GW)** of solar energy capacity.
  - Provide clean energy access to **1,000 million** people.
  - Help reduce global carbon dioxide emissions by **1,000 million tonnes** annually.
- Initially focused on countries between the **Tropics of Cancer and Capricorn**, the ISA opened its membership to all UN member states following an amendment to its **Framework Agreement in 2020**.

Source: AIR

SUPREME COURT'S REMARK ON 'ARREST', 'DETENTION' AND 24-HOUR DEADLINE

Context

- **In Sujit Das and Others v. Union of India (2026),** the SC held that the 24-hour deadline for producing an arrested person before a magistrate begins from the actual time of detention, not from the formal recording of the arrest.

Supreme Court ruling

- The court held that any attempt to draw an artificial **distinction between 'arrest' and 'detention' would dilute or negate the fundamental protection** guaranteed by the Constitution **under clause (2) of Article 22.**

- It also directed that, while computing the 24-hour deadline, **no other time can be excluded therefrom except for the time necessary for the journey** from the place of arrest to the magistrate court.
- The Court held that the stringent bail conditions under **Section 37 of the NDPS Act, 1985,** cannot override the fundamental rights guaranteed under Articles 21 and 22.

Constitutional and Legal Provisions

- **Article 22(2):** It mandates that every arrested and detained person must be produced before the nearest magistrate within 24 hours of arrest, excluding the time necessary for the journey from the place of arrest to the magistrate's court.
  - No person can be detained beyond this period without the authorisation of a magistrate.
- **Article 21 (Right to Life and Personal Liberty):** It guarantees that no person shall be deprived of life or personal liberty except according to the procedure established by law.
- **Section 58 of the Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023:** It prohibits a police officer from detaining a person arrested without a warrant for more than 24 hours, excluding the time necessary for the journey to the magistrate's court.
  - It also requires detention to remain reasonable in the circumstances of the case, even within the **24-hour limit.**

Source: IE

ANUBHAV PLATFORM

In News

- The Telecom Regulatory Authority of India (TRAI) launched **Network Anubhav.**

Anubhav Platform

- It is a **geospatial and analytical platform** that allows consumers to view location-specific network test results and access **Do Not Disturb (DND) services t**hrough a web interface.
- It brings together consumer-generated data from TRAI's MySpeed and MyCall apps and findings from its independent drive tests, providing information to users, telecom service providers and the regulator.
- The platform allows consumers to view cellular and fixed broadband test results by service provider and technology, including download and upload speeds.

Telecom Regulatory Authority of India (TRAI)

- It is an **independent statutory body** established under the TRAI Act, 1997.
- It regulates the **telecommunications, broadcasting and cable television sectors** to promote transparent regulation, fair competition, consumer protection and the orderly growth of the telecom ecosystem.
- It is a regulatory authority and does not provide direct consumer services. For individual service issues, consumers should contact their licensed service provider through the prescribed complaint and grievance-redressal mechanism.

Source:DD

VIABILITY GAP FUNDING (VGF) SCHEME

Context

- The Union Cabinet approved **a new viability gap funding (VGF) scheme** to promote **grid-scale energy storage systems** with a financial outlay of Rs 17,500 crore **from 2026-27 to 2030-31.**

About

- Under the scheme, the government plans to **promote energy storage capacity of 92 gigawatt-hour (GWh).**
  - **Out of this, 30 GWh** will be Battery Energy Storage Systems (BESS), **60 GWh** will be **pumped hydro storage (PHP)** and another **2 GWh will focus on emerging storage system technologies.**
- The scheme is expected to **support new storage capacity equal to 170%** of the country's existing grid-scale energy storage system capacity.
  - India currently has around **54 GWh of grid-scale energy storage** capacity and has **set a target of 411 GWh by 2031-32.**
- Energy storage capacity will be allocated through a **tariff-based competitive bidding process.**
- BESS projects under the scheme will be subject to a **minimum domestic content requirement (DCR) of 40%.**
  - The requirement is aimed at **promoting indigenous manufacturing,** reducing

dependence on imported components and creating opportunities for Indian industry.

BESS and PHP

- **BESS** is an energy storage technology which stores electricity chemically and discharges it when needed.
  - **Lithium-ion batteries, particularly lithium iron phosphate (LFP) batteries,** are currently the dominant technology for grid-scale storage because of their falling costs, high efficiency and long operational life.
- **PHP** uses **surplus electricity to pump water from a lower reservoir** to a higher one.
  - When electricity demand peaks, it releases the stored water downhill through turbines to generate power.

Significance

- Energy storage systems are becoming vital as **India rapidly scales up its renewable energy capacity to meet its climate goals.**
- Energy storage systems **can store excess renewable electricity** during periods of high generation and discharge it when demand rises but power generation remains low.

Source: IE

PRALAY MISSILE

Context

- Defence Research and Development Organisation (DRDO) conducted the successful flight test of quasi-ballistic missile 'Pralay' from Dr APJ Abdul Kalam Island off the coast of Odisha.

About Pralay Missile

- Development: Developed by the Research Centre Imarat, Hyderabad, along with other DRDO laboratories.
- Nature: It is an indigenously developed, solid-propellant, quasi-ballistic, surface-to-surface missile.
- Range and Payload: It has a strike range of approximately 150 to 500 km, depending on its payload weight. It can carry a 1,000-kg payload over 350 km, while a lighter 500-kg payload extends its range to approximately 500 km.
- **Mobility:** It can be launched from a road-mobile launcher, providing operational flexibility and enabling rapid deployment.
- **Nuclear Capability:** Pralay is designed primarily as a conventionally armed tactical missile.
- Pralay complements India's existing missile inventory, which includes the BrahMos and Prahaar, offering enhanced capabilities for standoff missile strikes.

Source: AIR

CERT-IN ISSUES SECURITY GUIDELINES FOR AGENTIC AI SYSTEMS

Context

- The Indian Computer Emergency Response Team (CERT-In) has issued the Artificial Intelligence (AI) Security Auditing Guidelines: Framework for Secure, Ethical, and Auditable Artificial Intelligence Systems.

About Agentic AI

- Agentic AI refers to AI systems that **can independently plan, make decisions and execute multi-step tasks** to achieve specified objectives with limited human intervention.
- Unlike conventional AI systems that primarily respond to user prompts, agentic AI can:
  - **Autonomous task execution:** Independently perform multiple steps to complete a task.
  - **Tool integration:** Access external software, databases, APIs and execute code.
  - **Persistent memory:** Retain information from previous interactions and tasks.
  - **Task delegation:** Assign tasks to other AI agents or systems.

Key Provisions of CERT-In Guidelines

- The framework calls for **testing whether an AI agent can exceed its authorised permissions**, use tools without approval, bypass approval mechanisms, or misuse its credentials.
  - It also identifies **unsafe delegation of tasks and the effectiveness** of emergency-stop mechanisms as areas that auditors should examine.
- It address the risks associated with an **agent's memory and the information it retains** from earlier interactions or tasks.
  - They call for testing whether this memory can be manipulated and whether information belonging to one user can leak to another.
- The framework **separately addresses systems in which multiple AI agents work** together and pass tasks between one another.

- It calls for each agent to have a unique identity and clearly defined permissions.

- **Delegation Controls:** Organisations must also have controls to detect and limit repeated delegation of tasks, uncontrolled creation of new tasks and loops in which agents keep assigning work to one another.
- **Audit Trails:** The guidelines call for records that allow auditors to reconstruct what happened within a multi-agent system.
- **Emergency Controls:** For high-risk systems, the framework also specifies the ability to suspend an individual agent or an entire workflow and revoke its access credentials.
- **The guidelines also call for organisations to maintain an inventory** of the components used in production AI systems, including models, training data, software and external tools.

Source: TH

MALABAR TREE TOAD

In News

- Malabar Tree Toad is officially declared as the **State Amphibian of Karnataka.**

Malabar Tree Toad (Pedostibes tuberculosus)

- It is also known as **Malenadina Mara Gantikappe.** It was discovered in 1876.
- **Habitat**: It is semi-arboreal species generally associated with montane moist evergreen forest on lateritic plateaus.
- **Distribution**: It is endemic to the Western Ghats of India, where it has a very fragmented range.
  - It occurs in the states of Kerala, Goa, Tamil Nadu, Karnataka, and Maharashtra
- **Characteristics:** It is one of the toad species in the world which can climb trees .
  - Unlike other amphibians, its breeding cycle is from March to June, before the onset of monsoon.
- **Ecological role**: It is also an important indicator species for the health of the evergreen forests.
- **Protection status**: It is an amphibian species to be listed under Schedule II of the Wildlife Protection Act, 1972.
  - It is listed as Least Concern by the IUCN Red List of Threatened Species.
  - Karnataka has become the first state in the country to have an officially declared state amphibian

Do you know ?

- Kerala announced **Purple Frog (locally known as Mahabali or pig-nosed frog) as its state amphibia**n, but it has not been officially declared, making the Malabar Tree Toad the first amphibian in the country to claim the honour.
- Karnataka so far has
  - State Animal Elephant
  - State Tree Sandalwood
  - State Bird Indian roller
  - State Butterfly Southern bird wing
  - State Flower Lotus
  - State Fish Carnatic Carp
  - State Fruit Mango

Source:IE

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