

NEWS TODAY

Critical Information Infrastructures targeted by ransomware attacks in 2023: DoPT report

According to report, 2023 marked registration of **complex cyber-dependent crimes** with national security implications. E.g. **Malware attack in a ministry**, Data breaches and a massive **DDOS attack on critical Infrastructure** and airport.

- **DDOS** stands for distributed denial-of-service, a **malicious attempt disrupting normal traffic** and making website **unavailable to legitimate users**.

Critical Information Infrastructure (CII):

- **Definition:** Section 70 of **IT Act 2000** defines **CII** as a **computer resource**, incapacitation or destruction of which, shall have debilitating **impact on national security, economy, public health or safety**.
 - ⊕ E.g. Banking, Transportation systems, Water supply, Mobile networks, Defense etc.

Previous cases of Cyber-attacks on CII:

- **AIIMS ransomware attack** (2023), **Kudankulam Nuclear Power Plant cyberattack** (2019), **ICMR data breach** (2023).
 - ⊕ Apart from this an **Overall surge in Cyber-attacks has been observed in India** e.g. India reported **15,93,000 security incidents in 2023** compared to **53,000 in 2017 (CERT-IN)**.

Key Reasons behind Vulnerability of India's Critical Infrastructure:

- Budget constraints, relying on third parties, difficulties in continuous monitoring and real-time threat detection, lack of specialized cyber security personnel.

Steps taken for Protection of CII

- **National Security Council Secretariat:** It provides overall coordination and strategic direction for Cyber Security.
- **National Critical Information Infrastructure Protection Centre (NCIIPC):** Established to protect CII.
- **Indian Cyber Crime Coordination Centre (I4C):** A framework for law enforcement to deal with cybercrimes.
- **Others:** Cyber Surakshit Bharat Initiative, Defence Cyber Agency (DCyA) etc.

Parliamentary Standing Committee on Communications and Information Technology to review mechanism to curb fake news

Although not defined legally, "fake news" generally refers to **news stories that are false or misleading**, without verifiable or accurate facts, quotes, or sources.

- It may include **misinformation** (accidental spread of inaccurate information) and **disinformation** (intentional spread of misinformation).

Need for regulating fake news

- **Right to Information (RTI):** Fake news undermines Citizen's RTI which is upheld as a fundamental right under article 19(1)(a) of Constitution by Supreme Court in '**Raj Narayan vs. Uttar Pradesh Government (1975)**'.
- **Threats to Democracy:** Fake news can influence voters' behavior, incite riots, and cause social unrest.

- **Information Bubbles:** Algorithms due to online fake news reinforce prejudices such as racism, misogyny, etc.

Challenges in Regulating Fake News

- **Increasing Internet penetration** (More than 55% of the Indian population had access to Internet in 2023, according to IAMAI report)
- **Digital illiteracy** (Only 38% of households in India are digitally literate)
- **Potential of curtailing free speech.**

- ⊕ For example, recently **Bombay High Court struck down Fact Check Unit (FCU) of the PIB** introduced to flag "fake news" pertaining to the business of the government on social media platforms

Initiatives that can prevent spread of fake news

- **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021:** Prescribe a framework for the regulation of content by **online publishers of news and current affairs content, and curated audio-visual content**.
- **Bharatiya Nyaya Sanhita:** Section 353 criminalizes spreading false information or rumors, including electronically, **with intent to cause public harm**.
- **Information Technology Act, 2000:** Section 66D of the Act prescribes punishment for cheating by personation by using computer resources.

Justice Sanjiv Khanna takes oath as 51st Chief Justice of India (CJI)

The oath of office was administered by President Droupadi Murmu during a ceremony at Rashtrapati Bhavan.

About appointment of CJI

- The **senior-most Supreme Court judge**, considered fit for the role, is usually appointed as CJI on the recommendation of the outgoing CJI.
 - ⊖ This convention was breached in **1964, 1973, and 1977**.
- The **Union Minister of Law, Justice and Company Affairs seeks this recommendation**, which is then **sent to the Prime Minister, who advises the President on the appointment**.
 - ⊖ Under **Article 124 (2)**, every Judge of the SC be appointed by the President and shall hold office until he/she attains the age of 65 year.

Key Role of CJI

- **First amongst the equals:** SC in the **State of Rajasthan vs Prakash Chand (1997)** ruled that the CJI is the **head of the judiciary and holds a leadership position**, they do not hold any superior judicial authority over the other SC judges.
- **Master of the Roster:** It is the **exclusive power of the CJI to constitute Benches** (including Constitution benches), to hear cases.
- **Head of Collegium:** CJI heads the Collegium for judicial appointments and transfers in the higher judiciary.
- **Appointment of officers and servants of SC:** It shall be made by the CJI or such other Judge or officer of the Court as he may direct (Article 146).

About Collegium

- It is a system for making **recommendations for appointment of judges of SC and HC**.
 - ⊖ **Judges are appointed by President under Article 124 and 217** (respectively for SC and HC) of Constitution.
- **For appointment in SC:** Collegium consists of CJI and four other senior-most judges of the SC.
- **For appointment in HC**
 - ⊖ **Collegium at HC** consists of **Chief Justice of HC and two senior judges** of the concerned HC.
 - ⊖ **Collegium at SC** consists of **CJI and two seniormost Judges of the SC**.

Drone seizures at Punjab border double to 'unprecedented' 200: Border Security Force (BSF)

The BSF attributes this rise to **improved anti-drone strategies and advanced technical measures**.

- Previously, Pakistani syndicates were using land routes but now they are using **Chinese-made drones** to smuggle **drugs, arms, and ammunition to destabilize India**.
 - ⊖ This is because traditional security measures such as surveillance cameras may not be capable of **detecting drones at a distance**.

Other security threats posed by drones

- **Weaponization of drones:** Modification of small commercial drones allows for easy carrying of explosives or weaponry.
- **Disruption of Critical Infrastructure:** Drones can carry out **cyber-attacks, electronic jamming or physical attacks** to disrupt infrastructure networks.
- **Privacy concerns:** Drones loaded with high-definition cameras can threaten privacy of common citizens.
- **Drone Swarms:** This refers to a situation where **large number of drones** operate autonomously in coordinated formations, potentially overwhelming defence systems.

Anti-drone technologies

- **Radio Frequency sensors** that can detect known drone radio signals over wide areas.
- **High-Power Microwave (HPM) systems** emit **stream of microwave energy** in a **wide area** and are best suited for **area denial operations against personnel or small electronics including drones**.
- **Integrated drone detection and interdiction systems (IDD&IS)** deployed along the northern borders with China provide both "soft kills" through jamming and "hard kills" using lasers.

Other Steps taken to counter security threats from drones

- **Anti-Rogue Drone Technology Committee (ARDTC)**, established by Ministry of Home, to evaluate and certify technology available to counter rogue drones.
- **Drone Rules 2021:** It divides the Indian airspace into three zones- Green, Yellow and Red (red zones are no go zone for drones).
- **Detailed vulnerability mapping** along Indo-Pak border to strengthen surveillance.

World Intellectual Property Indicators 2024 report released by World Intellectual Property Organization (WIPO)

According to report, India experienced **significant growth** in intellectual property filings, with **patents filings doubling between 2018 and 2023**.

Other Key Findings related to India:

- **Patents:** India is **ranked 6th globally** with 64,500 Patent Filings and country's Patent-to-GDP ratio surged to 381 from 144 (2013 to 2023).
- **Trademarks:** India's IP office is **second highest globally in trademarks** and now India ranks 4th globally in trademark filings.
- **Industrial Design Filing:** Ranked **10th globally** with a 36% increase in 2023, showing significant growth in creative design.

Factors behind Surge in Patent filing:

- **Government Initiatives and Policy Support:** E. g. Patents (Amendment) Rules, 2024 (reduced renewal fee and filing frequency time), simplified patent process, National IPR Policy, 2016 etc.
- **Timely clearance of applications:** India granted **1.03 lakh patents** in financial year 2023-24.
- **Strengthened IP Infrastructure:** Digitization of patent filing processes, establishment of IPR facilitation centers etc.

Challenges/Issues related to Patents in India:

- **Abolition of Intellectual Property Appellate Board:** Leading to creation of a void in handling appeals in IP cases.
- **Evergreening of Patents:** To extend patent period, guaranteeing monopoly over drugs.
- **Other Issues:** Compulsory licensing, lack of fixed timelines for each step in procedure etc.

Regulation of Patents

- **Globally:**
 - ⊖ World Intellectual Property Organization (WIPO)
 - ⊖ WTO TRIPS Agreement 1994
 - ⊖ **Conventions:** Patent Cooperation Treaty 1970, Budapest Treaty 1977 etc.
- **India:**
 - ⊖ **India Patents Act, 1970**
 - ◆ Amendment of act in 2005 ensured compliance of the Patents Act, 1970 with the **WTO TRIPS Agreement**.

India's 1st Space Defense Exercise Antariksha Abhyas 2024 held in Delhi

Exercise (Conducted by **defense space agency (DSA)**) aims to help **secure national strategic objectives** in space and **integrate India's space capability in military operations**.

- **Space Defense** accounts for prevention of potential **threats to space assets** (Kinetic, direct energy, jamming, cyber etc.) and existing countermeasures.

Need for space defense

- It can arise due to **Military, Non- military threats etc.**
 - ⊖ **Non-Military Threats (uncontrolled and natural):** Includes **Space Debris** and **Radiation** leading to failure of satellite systems.
 - ⊖ **Military threats (controlled)**
 - ◆ **Cyber-attacks:** hacking on-board sensors, uplink and downlink jamming, tracking operations, etc.
 - ◆ **Anti-satellite weapons:** Direct-ascent ASAT, orbital ASAT etc.
 - ◆ **Rendezvous and Proximity Operations:** De-orbiting satellites, directed energy attack from proximity, deterrence etc.
 - ⊖ **Surveillance and Reconnaissance:** Using high-resolution cameras, synthetic aperture radars etc. for weapon deployment, border security etc.

Challenges to Space defense in India

- Low Private investment, Need of National Defense Space Strategy, functional silos with lack of collaboration among stakeholders, long defense procurement procedure etc.

Way forward

- Passing draft **new Remote Sensing Policy** and the new Satcom Policy.
- Fast **defence procurement procedures**, R&D strategy for technology identification frameworks etc.
- **Exploring integration of Satcom with battle plans** and enabling close collaboration in DSA, DSRO AND ISRO.

Steps taken by India for Space defense

- **Creation of Integrated Space Cell** within headquarters of Integrated Defence Staff in 2010.
- **Defence Space Agency (DSA)** created in 2018.
- **Creation of Defence Space Research Organisation (DSRO)** in 2019.
- **Test of an Anti-satellite (ASAT) missile- Mission Shakti** in 2019.

Also in News



Inter-State Council (ISC)

The Inter-State Council has been reconstituted.

About ISC

- It is a forum through which **Centre and the state co-ordinate and co-operate** with each other.
- **Genesis:** Established under **Article 263** of Constitution through a Presidential Order in **1990** on recommendation of **Sarkaria Commission**.
- **Composition: It consists of:-**
 - ⊖ **Chairman:** Prime Minister
 - ⊖ **Members:**
 - ◆ CM of all States.
 - ◆ CM of Union Territories having a **Legislative Assembly and Administrators of UTs** not having a Legislative Assembly.
 - ◆ **6 Ministers** of Cabinet rank in Union Council of Ministers to be nominated by Prime Minister.



Comb jellies

Researchers have discovered new species of marine creatures called Comb jellies that can age in reverse.

About Comb jellies:

- **Ancient marine animals** that drift through the ocean's water column around the world.
 - ⊖ Comb jellies could also be **one of the first animals** as their origin can be traced back to an estimated 700 million years ago.
- **Habitat:** Native to the western Atlantic Ocean.
- **Distinctive Body Structure:** Have a gelatinous, transparent body and are characterized by rows of ciliated "combs" along their body,
- **Primitive Nervous System:** Possess a decentralized nerve net rather than a centralized brain.
- **Significance of study:** It could help to understand the aging process in humans as well as developmental biology of other animals.



Nano fertilizers

Indian Scientists have developed a **nanomaterial coating** (made of nano-clay) for **muriate of potash (MoP)**.

- MoP serves **80% of potassium fertilizer needs**.

About Nano Fertilizers

- Nano fertilizers are **nutrients that are encapsulated or coated within nanomaterial** (measuring 100 nanometres or less).
 - ⊕ It enables **controlled release and its subsequent slow diffusion** into the soil.
- **Benefits:**
 - ⊕ **Promotes sustainable farming:** Reduces soil and water contamination.
 - ⊕ **Cost Effectiveness:** Improves nutrient absorption, reduce nutrient wastage and lower application frequency provide, etc.

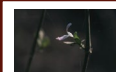


Hokersar wetland

Arrival of migratory birds in Hokersar wetland is adversely affected due to poor rainfall.

About Hokersar wetland

- Designated Ramsar Site in **2005**.
- It is a **permanent eutrophic lake** in the flood plains of **River Jehlum**.
- It lies in the **west of Srinagar**
- **Two perennial streams** of **Dood-Ganga and Sukhnag** feed the wetland.
- It is the **only site with remaining reedbeds of Kashmir**.
- **Major migratory bird:** Large Egret, Great Crested Grebe, Little Cormorant, Common Shelduck, Tufted Duck and endangered White-eyed Pochar, coming from **Siberia, China, Central Asia, and Northern Europe**.



Dicliptera polymorpha

Scientists from Agharkar Research Institute (ARI), Pune discovered a new **species of Dicliptera** in the Western Ghats (one of India's four global biodiversity hotspots)

About Dicliptera polymorpha

- **Habitat:** Thrives in **open grasslands with extreme conditions** like drought and frequent fires, utilizing **robust rootstocks** to endure environmental stress.
- **Unusual dual-blooming pattern:** Blooms twice a year, once **post-monsoon** (From early November to March or April) and again **after grassland fires** (in May and June).
- **Spicate inflorescence:** It is the only known Indian species with this spicate inflorescence structure, with its closest allied being found in Africa.



Pantsir Air Defense system (PADS)

Bharat Dynamics Limited, signed a MoU with Russia's Rosoboronexport for "**cooperation on Pantsir variants**".

About PADS

- The Pantsir-S1 system is a **mobile, short-range air defence system** equipped with both missile and gun capabilities.
- It can provide **air defence to small military, industrial, and administrative facilities**.
- It can defend against **fixed- and rotary-winged aircraft, cruise missiles, and high-precision weapons**.

Related news

- Germany will deploy **Israel's Arrow-3 missile interception system** by 2025.



State of the Climate 2024

WMO has published the State of Climate 2024 Update for COP29 on the backdrop of the U.N. climate summit at Baku.

Key messages of the report

- **Temperature:** Jan-Sept 2024 **Global average temperature is 1.54 (±0.13) °C** above pre-industrial level.
- **Greenhouse Gases:** Atmospheric concentration of CO2 has increased from around 278 ppm in 1750 to 420 ppm in 2023, an increase of 51%.
- **Sea level Rise:** From 2014-2023, global mean sea level rose at a rate of 4.77 mm per year, more than double the rate between 1993 and 2002.
- **Sea ice extent:** Antarctic sea ice was the second lowest in satellite record (1979-2024) after 2023.



Gotti Koya tribe

National Commission for Scheduled Tribes has asked Centre, States to submit a detailed report on status of Gotti Koya tribals.

About Gotti Koya or Guttikoya tribe

- These are the Adivasi tribe of **Chhattisgarh**, who had relocated from Chhattisgarh to neighboring States in 2005 to escape violence between **Naxals and Indian security forces**.
- **Language:** Speak their mother-tongue Gondi, a south-central Dravidian language.
- **Traditional Occupation:** Hunting, food gathering and fishing.
- **Festivals and Ritual performances:** They believe in Gods and Goddesses.
 - ⊕ They worship nature first which provides food and livelihood to them.
- **Political organization:** Villages are politically organized with its head called Patel.

Places in News



Azerbaijan (capital: Baku)

The **2024 UN Climate Change Conference (UNFCCC COP 29)** began in Baku (Azerbaijan).

Political Features

- **Land Boundaries:** Surrounded by Russia, Iran, Armenia, Georgia.
- **Territorial Dispute with Armenia:** Over Nagorno-Karabakh region.

Geographical Features

- **Surrounding water bodies:** Caspian Sea (East).
- **Major River:** Kura and Aras rivers
- **Highest Peak:** Bazardyuzyu (part of the Greater Caucasus range)
- **Natural Resources:** Oil and Natural Gas, lead, zinc, iron, copper, etc.



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