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Current affairs summary for prelims

3 May, 2024

# Intelligent Transportation System (ITS) Technology

***Context:*** *CDAC Thiruvananthapuram's thermal camera technologies were transferred to M/s Aditya Infotech (CP Plus) under the InTranSE Program of MeitY.*

- **Intelligent Transportation Systems (ITS) Definition and Directive:**
  - ITS encompasses innovative services for transport and traffic management to enhance safety and efficiency.
  - Defined by the EU as applying information and communication technologies in road transport, infrastructure, vehicles, and traffic management.
  - Aims to improve road transport, traffic management, and mobility.
- **Background and Motivation:**
  - Increasing focus on homeland security motivates governmental activity in ITS.
  - Surveillance of roadways is a priority for homeland security.
  - ITS can aid in rapid mass evacuation after large casualty events.
  - Infrastructure and planning for ITS parallel the need for homeland security systems.
- **Intelligent Transportation Technologies:**
  - Range of technologies includes car navigation, traffic signal control, and automatic incident detection.
  - Wireless communication methods such as IEEE 802.11p and DSRC are used for short-range and long-range communication.
  - Advances in vehicle electronics enable more sophisticated applications like artificial intelligence.
- **Floating Car Data and Sensing Technologies:**
  - Methods like triangulation, vehicle re-identification, GPS-based, and smartphone-based monitoring collect traffic data.
  - Advantages of floating car data include cost-effectiveness, wide coverage, quick setup, and all-weather functionality.
  - Sensing technologies include inductive loop detection, video vehicle detection, Bluetooth detection, radar detection, and information fusion.
- **Intelligent Transportation Applications:**
  - Emergency vehicle notification systems like eCall assist motorists in emergencies.
  - Automatic road enforcement via traffic enforcement cameras for speed, red light, and lane violation monitoring.
  - Variable speed limits and collision avoidance systems improve safety.
  - Cooperative systems enable communication between vehicles, infrastructure, and servers for road safety and efficiency.
- **ITS in the Connected World and Smart Transportation:**
  - Emerging mobility models like bike sharing and car sharing integrate with ITS.
  - Mobile operators play a significant role in providing connectivity and digital services.
  - Flexible payments and billing platforms accommodate various mobility models and enhance customer experience.
- **Regional Perspectives:**
  - In Europe, the Network of National ITS Associations and ERTICO promote ITS development and deployment.
  - In the US, state ITS chapters hold yearly conferences to showcase technologies.
  - In Latin America, cities like Colombia implement intelligent transportation systems to improve service quality and efficiency.

# Supersonic Missile Assisted Release of Torpedo (SMART) system

***Context:*** *The Defence Research and Development Organisation (DRDO) Wednesday tested a next-generation torpedo release system aimed at boosting the Navy's anti-submarine warfare capabilities.*

- **SMART System Overview:**
  - The Supersonic Missile-Assisted Release of Torpedo (SMART) system is developed by DRDO.
  - It enhances anti-submarine warfare capabilities with its missile-based mechanism for launching lightweight torpedoes.
- **Key Features:**
  - Capable of targeting submarines hundreds of kilometres away, exceeding the range of conventional lightweight torpedoes.
  - Designed for immediate action in the absence of other assets upon detecting an enemy submarine.
  - Utilises a canister-based missile system with advanced subsystems, including two-stage solid propulsion and precision inertial navigation.
  - Carries an advanced lightweight torpedo missile as a payload, deployed via a parachute-based release mechanism.
  - Validates several state-of-the-art mechanisms such as symmetric separation, ejection, and velocity control.
- **Test Details:**
  - Successfully flight-tested at around 8:30 am from a ground mobile launcher at Dr APJ Abdul Kalam Island off the Odisha coast.
  - Demonstrated effectiveness in launching lightweight torpedoes from both coasts and warships.
  - Validates the system's capabilities for targeting submarines at extended ranges.

Face to Face Centres

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- Confirms the reliability and precision of the SMART system's advanced subsystems.

➢ **Significance:**

- Marks a significant advancement in India's anti-submarine warfare capabilities.
- Strengthens the Navy's ability to counter submarine threats effectively and proactively.
- Demonstrates India's indigenous technological prowess and self-reliance in defence research and development.
- Highlights the strategic importance of the SMART system in securing maritime borders and national interests.

# Article 361

***Context:*** *A sexual harassment complaint has been filed against West Bengal Governor C V Ananda Bose in Kolkata, but Constitutional immunity prevents naming him as an accused or investigating.*

➢ **Article 361 of the Constitution - Immunity to President and Governors:**

- Provides immunity to the President and Governors from prosecution while in office.
- States that they are not answerable to any court for the exercise and performance of their powers and duties.

➢ **Crucial Sub-clauses:**

- Criminal proceedings cannot be initiated or continued against the President or Governor during their term.
- No process for arrest or imprisonment can be issued against them during their term.

➢ **Precedents and Practical Application:**

- Instances where criminal action was halted until the Governor completed the term in office are cited.
- Example: In 2017, the Supreme Court allowed charges against BJP leaders but not against the then Governor of Rajasthan, Kalyan Singh.
- In 2017, Meghalaya Governor V Shanmuganathan resigned following allegations of sexual harassment.
- In 2009, Andhra Pradesh Governor N D Tiwari resigned amidst a sex scandal.

➢ **Protection of President and Governors – Article 361:**

1. **Exception to Equality Principle:** Article 361 of the Indian Constitution deviates from the Fundamental Right to Equality outlined in Article 14.
2. **Grant of Immunity:** The article provides immunity to the President and Governors from prosecution while they hold office
3. **Limitation on Personal Answerability:** The President and Governors are not personally answerable to any court for the exercise of their powers during their tenure.
4. **Scope of Oversight:** While immunity is granted, the conduct of these officials can be reviewed by designated bodies appointed or designated by either House of Parliament under Article 61
5. **Bar on Criminal Proceedings:** Criminal proceedings cannot be initiated or continued against the President or Governors during their term in any court.
6. **Prohibition on Arrest Warrants:** Courts are prohibited from issuing arrest warrants for the President and Governors while they hold office.
7. **Civil Proceedings with Notice:** Civil proceedings against the President or Governors for actions in their personal capacity require a prior notice period of two months.

# News in Between the Lines

## Bhil Tribe

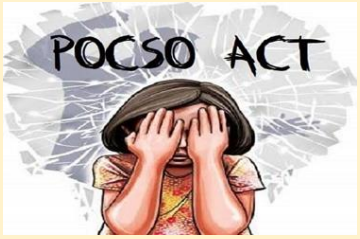
*Recently, Nirmala Kagadya Vasave, a 38-year-old Adivasi from the Bhil community in Nandurbar, Maharashtra, emphasized the prolonged neglect of tribal development over 75 years, calling for Adivasi empowerment and representation to address the issue.*

**About Bhil Tribe:**

- The Bhil tribe is an **indigenous ethnic group** in India that is considered one of the oldest tribes in the country.
- The name "Bhil" comes from the **Dravidian word villu,** which means "**bow**".
- The Bhils are known for their **archery skills** and **knowledge of local geography.**
- They are also skilled sculptors and traditionally **experts in guerrilla warfare**, though most today are farmers and agricultural laborers.

- They live in forested and hilly regions and speak **Bhili**, an **Indo-Aryan language**.
- The Bhils are divided into two main groups: the **central** and **eastern Rajput Bhils**.
- The central Bhils live in the mountain regions of **Madhya Pradesh**, **Maharashtra**, **Gujarat** and **Rajasthan**, while the Bhils in the **northeast** live in **Tripura**.
- The Bhils are known for their traditional crafts, such as **pottery**, **basketry** and **paintings**.

## POCSO Act




*Recently, the Supreme Court emphasized that the objectives of the Protection of Children from Sexual Offences (POCSO) Act cannot be overlooked, even if child marriages persist or abusers marry their minor victims to evade prosecution.*

### About POCSO Act:

- The **Protection of Children from Sexual Offences (POCSO) Act, 2012** was passed by the Parliament to **prevent children under 18 from sexual assault**, **sexual harassment** and **child pornography.**
- It is **administered by the Ministry of Women and Child Development**.
- The act also **establishes Special Courts** for the trial of these offenses.
- The POCSO Act defines a child as "**any person"** under the age of 18, establishing a gender-neutral legal framework for child sexual abuse victims.
- It defines various types of sexual abuse, such as **penetrative** and **non-penetrative assault**, as well as sexual harassment and pornography.
- The act also **prescribes punishment for people** who traffic children for sexual purposes.
- **In 2019, the act was amended** to increase the minimum punishment for aggravated penetrative sexual assault from seven years to ten years.

## P versus NP problem

*Recently, the P versus NP problem, typically confined to computer science, has shown broader impacts in the field of medical science.*

### About P versus NP problem:

- The P versus NP problem is a **fundamental question in computer science** regarding the efficiency of solving computational problems.
- It asks whether every problem whose solution can be quickly verified by a computer can also be quickly solved by a computer.
- P Problems refer to **computational problems that can be efficiently** solved by a computer, with the time required to find a solution increasing polynomially as the size of the input grows.
- **NP problems are those for which a solution can be verified quickly**, but finding the solution itself may not be quick, with the time required to verify a solution increasing polynomially as the size of the input grows.
- The resolution of the P versus NP problem has significant implications across various fields, including **computer science**, **mathematics**, **cryptography**, **finance**, **logistics**, and **healthcare**.
- The **P versus NP problem remains unsolved,** and it is considered one of the most important open questions in computer science.

## Aravali Range

*Recently, the Supreme Court issued a directive stating that illegal mining activities in the Aravali range in Rajasthan must stop immediately.*

### About the Aravali Range:

- The Aravalli Range is one of the **oldest fold mountains** globally, spanning approximately 670 km in a south-west direction from near **Delhi through southern Haryana and Rajasthan to Gujarat**.
- **Guru Shikhar,** standing at 1,722 meters (5,650 feet), is the **highest peak in the Aravalli Range**, located in the **Arbuda Mountains of R ajasthan**.
- The Aravalli serves as a source for three major river systems and their tributaries, including the **Banas** and **Sahibi rivers** (tributaries of the Yamuna) and the **Luni River**, which flows into the Rann of Kutch.
- It is part of the **Aravalli-Delhi orogenic belt,** formed due to tectonic plate collisions during the Proterozoic era.
- It is a **constituent of the Indian Shield**, formed through **cratonic collisions**.
- Historically, the Aravalli Range was **much higher but has eroded over millions of years**.
- It is rich in mineral resources such as **copper**, **zinc**, **lead** and **marble**.

## Place in News

## Canada

*India has rejected the comments made by Canadian Prime Minister Justin Trudeau on killing of Khalistan separatist Hardeep Singh Nijjar saying that the remarks once again illustrate the political space given to separatism, extremism and violence in Canada.*

**Canada (Capital: Ottawa)**

**Location:** Canada is a country situated in **North America**.

**Boundaries:** Canada shares its borders with the **Atlantic Ocean** (East), **the Pacific Ocean** (West), **the Arctic Ocean** (North) and **the United States** (South).

**Physical Features:**

- The highest point in Canada is **Mount Logan**, which is located in the Yukon Territory.
- Major rivers in Canada include the **Mackenzie River**, St. Lawrence River, Fraser River, Yukon River, Saskatchewan River, **Peace River**, and **Ottawa River**.
- Canada is rich in minerals, including significant deposits of **gold**, **silver**, **copper**, **nickel**, **zinc**, **uranium**, **aluminum**, **iron ore**, **cobalt** and **cadmium**.

**International Relations:** Canada is a member of various international organizations including the **United Nations**, **NATO**, **G7**, **G20**, **Commonwealth of Nations** and the **WTO**.

## POINTS TO PONDER

- What recent decision did the Supreme Court make regarding marriage under the Hindu Marriage Act? **– Mere registration of marriage without a proper ceremony is invalid**
- What did scientists research to efficiently remove uranium wastewater extracted from radioactive-contaminated soil? **– Nano-material-based adsorption process**
- Which act prohibits smoking in public places and bans the sale of tobacco products to minors? **– Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003**
- Where was the successful flight-testing of the Supersonic Missile-Assisted Release of Torpedo (SMART) system conducted recently? **– Dr. APJ Abdul Kalam Island, Odisha**
- In the Minerva Mills case of 1980, what did the Supreme Court declare regarding provisions of the 42nd Amendment which restricted the Judicial Review? **– Declared the provisions as unconstitutional**