

EKLAVYA MODEL RESIDENTIAL SCHOOLS (EMRS)



- It is a flagship intervention of the **Ministry of Tribal Affairs**, Government of India, to provide **quality residential education to Scheduled Tribes students from Class 6th to 12th in remote areas** to enable them to access the best opportunities in education and to bring them at par with the general population.
- The programme has been in **operation since 1998** and was **revamped during the year 2018-19** to expand the geographical outreach and enhance the quality of facilities.
- EMRSs will be set up in **every block with more than 50% ST population and at least 20,000 tribal persons.**
- **Features:**
 - EMRSs are **co-educational residential schools from Class VI to XII.**
 - Eklavya schools will be on **par with Navodaya Vidyalayas** and will have special facilities for preserving local art and culture besides providing training in sports and skill development.
 - The school infrastructure will include **classroom, administrative block, hostels for boys and girls, playground, accommodation for teaching and non-teaching staff, Labs etc.** facilities catering to the need of academic education as well as extracurricular activities.
 - **CBSE curriculum** is followed in these schools, and **education is completely free.**
 - **Each school has a capacity of 480 students** with an equal number of seats for **boys and girls.**
 - **Non-ST students** can be admitted in these schools on seats up to **10% of the total seats.**

NATIONAL MARITIME DOMAIN AWARENESS (NMDA) PROJECT



- It is aimed at **strengthening maritime and coastal security**.
- The project will bring in an **integrated approach to data collation, analysis, and information sharing** amongst the various maritime stakeholders.
- The project entails **upgradation of the existing National Command, Control, Communication, and Intelligence (NC3I) Network** to the NMDA Network along with the **incorporation of AI-enabled software** for smarter surveillance and decision-making.
- As part of the project, the **existing Information Management and Analysis Centre (IMAC) at Gurugram**, which is the **nodal centre of the NC3I Network**, will also be **upgraded into a Multi-Agency NMDA Centre**.
- This upgraded centre **will host personnel from 15 agencies** spanning seven key ministries — including Defence, Shipping, Petroleum, Fisheries, and others — to ensure seamless coordination and information sharing.

The NMDA project will **link various maritime agencies, coastal states, and union territories** for a unified operational picture of India's vast coastline and surrounding seas.

- It will also **integrate data from sectors such as commercial shipping and fisheries**, improving response capabilities to maritime threats, search-and-rescue missions, and environmental incidents.
- The project, set to be **executed on a turnkey basis**, will be **administered by the Indian Navy**.
- **Bharat Electronics Limited (BEL)** will serve as the **lead integrator**, providing state-of-the-art hardware and AI-enabled software solutions.

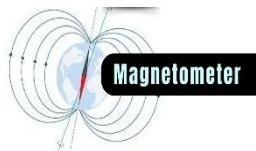
VERA C RUBIN OBSERVATORY



- It is located 8,684 feet above sea level atop the **Cerro Pachón** mountain in the Chilean Andes.
- Cerro Pachón was selected as the site for Rubin Observatory because it's an excellent place to conduct **high-quality astronomical and astrophysical science**.
- It is named after American astronomer Vera C Rubin, who provided evidence about dark matter for the first time in the 1970s
- It is partnered with the **S. Department of Energy (DOE) and National Science Foundation (NSF)**.
- This observatory will provide comprehensive images of the night sky unlike anything astronomers have seen before.
- It will constantly scan the sky of the **southern hemisphere for 10 years**, gathering 20 terabytes of astronomical data each night.
- The observatory's software will automatically compare new images with older ones and generate an estimated 10 million alerts per night for each change detected in the sky.
- The centrepiece of the observatory is the **Simonyi Survey Telescope**. This device is unique for three main reasons.
 - **Wide Field View:** Astronomers typically use the size of the visible surface of the full Moon to describe a telescope's field of view. The Hubble Space Telescope observes around 1% of the full Moon's disc, and the James Webb Space Telescope around 75% — using such telescopes is like looking into space through a straw.
 - **Largest Digital Camera:** The telescope has the world's largest digital camera, which is the size of a small car, weighs 2,800 kg, and boasts a staggering resolution of 3,200 megapixels.

- **Rapid Movement:** The Simonyi Survey Telescope is the fastest-slewing telescope in the world, and takes just five seconds to move and settle from one target to another. This speed is due to the telescope's compact structure (owing to the three-mirror design), and its mount which floats on a film of oil.
- The observatory will also play a **crucial role in expanding our knowledge about the nature of dark matter and dark energy.**
- While galaxies, stars, and planets make up 5% of the universe, dark energy makes up about 68%, and dark matter about 27%.

MAGNETOMETER



- A magnetometer is a passive instrument that **measures changes in the Earth's magnetic field.**
- The most **promising methods** for magnetic field measurement are based on **detecting polarization rotation** of a probe light passing through alkali atoms in a very weak magnetic field.
- Magnetometers based on this method, referred to as **Optically pumped atomic magnetometers (OPAMs) and Spin Exchange Relaxation Free (SERF)**
- Typically have high sensitivity but demand sophisticated magnetic shielding and have a lower dynamic range.
- Magnetometers are useful devices with applications **in areas ranging from fundamental physics** to medical imaging and navigation.

What is Raman-Driven Spin Noise Spectroscopy (RDSNS)?

- It uses **laser light to listen to the tiny quantum jitters** of Rubidium atoms.
- These jittery movements, called spin noise, are random fluctuations in the spin of atoms—fundamental quantum properties like tiny bar magnets.

- When exposed to a magnetic field, the pattern of this spin noise shifts in predictable ways. By shining lasers and analyzing the noise, researchers can accurately measure the magnetic field without touching or disturbing the atoms.
- RDSNS enhances the **dynamic range considerably** without significant loss of sensitivity.
- This method could transform the way we measure magnetic fields—making the process faster, portable and precise even in noisy, real-world environments.
- This method exhibits potential for field-deployable applications of magnetic field measurement with **broadband capability and fast time response**, extending across various scientific, industrial and exploratory fields.

FATF FLAGS DIGITAL PLATFORMS AS EMERGING THREAT IN TERROR OPERATIONS

- FATF is an intergovernmental policy-making body established in 1989 at the G7 Summit in Paris. Its primary objective is to develop policies to combat money laundering (ML), terrorist financing (TF), and other related threats to the integrity of the international financial system.
- **Headquarters**
 - FATF is headquartered in Paris, France, and functions out of the Organisation for Economic Co-operation and Development (OECD) headquarters.
- **Members**
 - FATF comprises 39 members, including 37 jurisdictions and 2 regional organizations (European Commission and Gulf Cooperation Council).
 - India became a full member of the FATF in 2010, which enhanced its global financial credibility.
- **Key Functions & Roles**
 - Setting International Standards for combating Money Laundering and Terror Financing through its famous 40 Recommendations.

- Monitoring Compliance of member and non-member countries with those standards.
- Conducting Mutual Evaluations to assess effectiveness of anti-money laundering and counter-terrorist financing measures.
- Issuing Public Statements to identify high-risk and non-cooperative jurisdictions (also known as the FATF Grey List and Black List).
- Encouraging Legal, Regulatory, and Operational Reforms in financial systems globally.

FATF Flags Rising Misuse of Digital Platforms for Terror Financing

- The FATF report highlights how terrorists involved in the Pulwama (2019) and Gorakhnath Temple (2022) attacks used online payment services, VPNs, and e-commerce platforms.
- It warns that social media, messaging apps, and crowdfunding sites are increasingly being exploited for financing terrorism.
- **State-Sponsored Terror Financing**
 - Without naming countries, the report notes that some national governments continue to financially and materially support terrorist organisations.
 - This includes direct funding, logistical support, training, and sanctions circumvention via trade and smuggling.
- **Complex Financial Schemes**
 - The FATF also points to commodity-based schemes, such as oil-to-gold-to-cash transactions involving multiple jurisdictions, used to move terror funds while evading detection.

Conclusion: Exploitation of Digital Infrastructure

- The report underscores a growing trend of misusing digital tools—e-commerce, VPNs, and online payment systems—for planning, funding, and executing terrorist acts.
- This highlights the urgent need for regulatory oversight and monitoring.

THE ELECTION COMMISSION OF INDIA DOES NOT HAVE UNFETTERED POWER

- Ahead of the upcoming Assembly elections in November, the Election Commission of India (ECI) has ordered a Special Intensive Revision (SIR) of electoral rolls in Bihar.
- Opposition parties allege that the move is intended to disenfranchise thousands by questioning their citizenship status. The ECI has rejected these claims, asserting its legal authority to conduct the revision.
- With multiple petitions now before the Supreme Court, the focus has shifted from political motives to the legality and constitutional validity of the ECI's power to initiate such a revision so close to the elections.

Legal Grounds for Voter Disqualification and the Scope of ECI's Powers

- **Constitutional Basis for Voting Eligibility**
 - Article 326 of the Constitution mandates elections based on adult suffrage, allowing every Indian citizen aged 18 or above to vote, unless disqualified on specific grounds.
- **Disqualifications under the Representation of the People Acts**
 - The RPA, 1950 outlines disqualifications such as:
 - Being of unsound mind (as declared by a competent court), and
 - Disqualification under Section 11A of the RPA, 1951.
- **Conditions for Voter Registration**
 - **Section 19 of the RPA** requires a person to be:
 - At least 18 years of age, and Ordinarily resident in the constituency.
 - **Section 20 of the Act** clarifies the meaning of "ordinarily resident."
 - Simply owning or having a house in a constituency does not make someone an ordinary resident there. At the same time, if a person is temporarily away from their usual place of living, they still remain an ordinary resident of that place.

- **ECI's Constitutional Authority**
 - Under Article 324, the Election Commission of India is entrusted with the preparation of electoral rolls and conduct of elections.
 - The Supreme Court calls this a “reservoir of power”, essential for ensuring free and fair elections—a part of the Constitution’s basic structure.
- **Limits on ECI's Powers**
 - Despite its broad mandate, the ECI’s powers are not unlimited.
 - As held in **Mohinder Singh Gill v. CEC (1978)**, the Commission must adhere to existing laws where they apply.
 - It can exercise its discretion only in areas not covered by statute, solely to advance the objective of free and fair elections.

Legality of Electoral Roll Revision and the ECI's Powers Under Scrutiny

- **Legal Provisions for Electoral Roll Revision**
 - Section 21 of the Representation of the People Act (RPA), 1950 outlines four types of electoral roll revisions:
 - Before Lok Sabha or Assembly elections;
 - Before by-elections;
 - On ECI’s annual direction, and
 - Special revision for a constituency or part of it (with the ECI recording reasons for doing so.)

Conclusion

- While the Election Commission of India does have the power under Section 21 of the RPA to revise electoral rolls, that power under Section 21(3) is specifically limited to a constituency or part of it—not an entire state.
- Despite the wide powers granted under Article 324, the ECI remains bound by statutory law and is accountable to the principles of natural justice, as affirmed by the Supreme Court.

PARAKH RS SURVEY

- PARAKH RS, formerly known as the **National Achievement Survey (NAS)**, is administered by the **Performance Assessment, Review, and Analysis of Knowledge for Holistic Development (PARAKH)**, an autonomous institution under the **National Council of Educational Research and Training (NCERT)**.
- The 2025 edition of PARAKH RS covered:
 - **21,15,022 students**
 - **74,229 schools**
 - **781 districts**
- Subjects tested included:
 - **Grades 3, 6, and 9:** Language and Mathematics
 - **Grades 3 and 6:** Environmental Studies
 - **Grade 9:** Science and Social Science
- In addition, **2.7 lakh teachers and school leaders** participated through questionnaires to provide contextual data.

Policy Implications and Concerns

- The PARAKH RS results underline a serious concern: **learning deficits are widening as students progress to higher grades**, especially in conceptual subjects like mathematics and science.
- These findings suggest the urgent need to:
 - Strengthen foundational literacy and numeracy in primary education.
 - Improve pedagogy and teacher training, particularly in underperforming regions.
 - Integrate formative assessment tools for early detection of learning gaps.
 - Reorient school curricula to foster critical thinking and contextual understanding.