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To The Point

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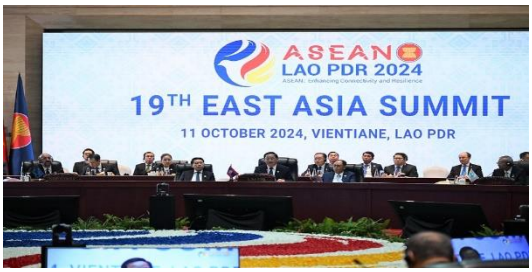
Table Of Content 15 Oct 2024

GS Paper 2 – International Relations

1 19th East Asia Summit (EAS), 2024



Context: The Prime Minister recently attended the **19th East Asia Summit (EAS)** held in **Vientiane, Lao People's Democratic Republic (PDR)**. This summit serves as the Indo-Pacific's premier forum for strategic dialogue among member countries, focusing on critical regional issues and fostering cooperation.

Key Announcements by India:

1. **ASEAN's Centrality**: India emphasized the importance of the **Association of Southeast Asian Nations (ASEAN)** in the Indo-Pacific regional architecture, asserting its pivotal role in India's Indo-Pacific Vision and collaboration within the **Quad** framework.
2. **Education Conclave at Nalanda University**: India extended an invitation to EAS countries for a **Heads of Higher Education Conclave** to be held at **Nalanda University** in Bihar, promoting educational cooperation and exchanges among member nations.
3. **Support for ASEAN's Approach on Myanmar**:
    - India reiterated the stance that **Myanmar** should be engaged rather than isolated.
    - India endorsed ASEAN's **Five-Point Consensus (5PC)** regarding the situation in Myanmar, which includes:
        - An immediate end to violence in the country.
        - Dialogue among all parties involved.
        - The appointment of a special envoy.
        - Humanitarian assistance provided by ASEAN.
        - A visit by the special envoy to Myanmar to meet with all parties.
4. **Call for Code of Conduct (CoC) for Navigation**:
    - India advocated for a robust **Code of Conduct (CoC)** for maritime activities, emphasizing that these activities should align with the **United Nations Convention on the Law of the Sea (UNCLOS)**.
    - The CoC should not impose restrictions on the foreign policies of regional countries.
5. **Development-Focused Approach**: India highlighted the necessity for the region to adopt a development-based approach rather than one focused on expansionism, promoting sustainable growth and cooperation.

Conclusion: The Prime Minister's participation in the EAS underscores India's commitment to fostering regional stability, educational collaboration, and engagement with ASEAN, particularly concerning Myanmar's situation and maritime governance. Through these initiatives, India aims to strengthen ties with Indo-Pacific nations and promote a cooperative framework that prioritizes development and engagement over isolation.

GS Paper 1 – Geography

2 What is X-Band Radar?

Context: In response to recent severe floods and landslides in Kerala's Wayanad district, the Union Ministry of Earth Sciences has approved the installation of an X-band radar in the region to enhance monitoring and early warning systems.

About X-Band Radar:

- **Definition**: An X-band radar operates by emitting radiation within the X-band of the electromagnetic spectrum, specifically between 8 to 12 GHz. This frequency range corresponds to wavelengths of approximately 2 to 4 cm.
- **High Resolution**: The shorter wavelengths of X-band radar allow for higher resolution imaging, making it effective in detecting fine details in the monitored area.
- **Attenuation**: While higher frequencies can provide better resolution, they also have a higher rate of attenuation, meaning the signals can weaken more quickly over distance or when interacting with atmospheric conditions.

Applications of X-Band Radar:

1. **Monitoring Landslides**: The primary application of the new radar will be to monitor particle movements, such as soil displacement, which can provide critical data for landslide warnings.
2. **High Temporal Sampling**: X-band radar can rapidly sample its environment, enabling the detection of particle movements that occur over short time spans, enhancing the ability to issue timely alerts.
3. **Meteorological Studies**: X-band radars are commonly used in meteorology to study cloud development and light precipitation due to their sensitivity to small water particles and snowflakes.

Conclusion: The implementation of X-band radar technology in Wayanad represents a significant step towards improving disaster preparedness and response capabilities in vulnerable regions. By enhancing the ability to monitor environmental changes, this radar can play a crucial role in mitigating the impacts of natural disasters, particularly in the context of increasing climate variability.

What is Radar?

- **Definition**: Radar, short for "radio detection and ranging," is a technology that uses radio waves to determine the distance, velocity, and physical characteristics of objects in its vicinity.
- **How It Works**: A radar system consists of a transmitter that emits radio signals directed at an object (e.g., a cloud). When these signals hit the object, some of the energy is reflected back to the radar system. A receiver then captures and analyzes the reflected signals.
- **Types of Radar**: Weather radar, often referred to as Doppler radar, is a common type used in meteorology. It utilizes the Doppler effect, which describes changes in frequency of sound waves when the source moves towards or away from a listener.
    - **Doppler Effect**: In meteorological applications, Doppler radar can determine the speed and direction of cloud movement based on frequency changes in the returned signals.
    - **Pulse-Doppler Radar**: This variant measures precipitation intensity by emitting signals in pulses and tracking the frequency and timing of the reflected signals. It provides insights into weather conditions, potential storm formations, and new wind patterns.

GS Paper 2 – International Relations

3 What are Dragon Drones?

Context: Dragon drones have emerged as a significant and deadly weapon in the ongoing Russia-Ukraine war. Both Ukrainian and Russian forces have shared videos showcasing these drones as they deploy incendiary attacks, leading to their nickname as "dragon drones."

About Dragon Drones:

- **Functionality**: Dragon drones are designed to release a substance known as thermite, which is a mixture of aluminium and iron oxide. This compound has been used for over a century, initially developed for applications like welding railroad tracks.

Working Mechanism:

- **Thermite Reaction**: When thermite is ignited (typically using an electrical fuse), it initiates a self-sustaining exothermic reaction. This reaction generates extremely high temperatures that can burn through various materials, including:
    - **Metals**: Military-grade vehicles and other hard targets.
    - **Organic Materials**: Fabrics, trees, and other combustible materials.
    - **Water**: Notably, thermite can continue to burn even underwater, making it particularly versatile.
- **Impact on Humans**: The intense heat generated by thermite can cause severe burns and bone damage to humans, often resulting in fatal injuries.

Advantages of Dragon Drones:

- **Precision and Evasion**: When combined with high-precision drones, which are capable of evading traditional defense systems, dragon drones become highly effective and dangerous weapons on the battlefield.
- **Deployment Timeline**: Reports suggest that dragon drones were first deployed in the Russia-Ukraine conflict around September, marking a significant evolution in drone warfare tactics.

International Regulation:

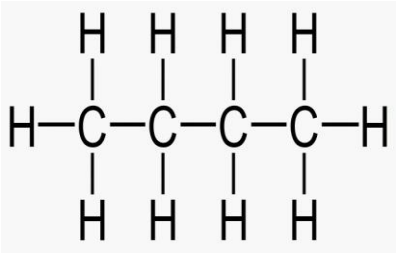
- **Legality**: The use of thermite itself is not prohibited under international law. However, deploying incendiary weapons like thermite against civilian targets is restricted by the **Convention on Certain Conventional Weapons**. This Cold War-era guidance, developed under the auspices of the United Nations, aims to protect civilian populations from the impacts of certain types of warfare.

Conclusion:

Dragon drones represent a notable advancement in modern warfare, utilizing innovative technologies to deliver devastating incendiary effects. As conflicts continue to evolve, the implications of such weaponry raise important ethical and regulatory questions regarding their use, especially in civilian-populated areas. The ongoing discussions around the legality and moral ramifications of employing such weapons highlight the need for clear international guidelines to address the changing landscape of warfare.

GS Paper 3 – Science and Technology

4 What are Alkanes?



Context: Alkanes are a fundamental class of organic compounds characterized by their simplicity and stability. Recent research has unveiled innovative methods to activate these compounds, enhancing their utility in various chemical reactions.

Characteristics of Alkanes:

- **Structure**: Alkanes consist entirely of single-bonded carbon (C) and hydrogen (H) atoms. They lack other functional groups, making them relatively straightforward in structure.
- **General Formula**: The general formula of alkanes is C_nH_{2n+2}, indicating that for every "n" carbon atom, alkanes have "2n+2" hydrogen atoms. The Lewis structure of alkanes can be simplified using the condensed structural formula.
- **Subgroups**:
    - **Linear Straight-Chain Alkanes**: These have a continuous chain of carbon atoms.
    - **Branched Alkanes**: These contain branches off the main carbon chain.
    - **Cycloalkanes**: These have carbon atoms arranged in a ring structure.

Chemical Properties:

- **Inertness**: Alkanes exhibit minimal chemical reactivity towards most laboratory reagents. Their lack of functional groups contributes to their chemical inertness.
- **Biological Stability**: Alkanes are relatively inert biologically and are not typically involved in the chemical processes of living organisms.
- **Reactivity**: While generally stable, alkanes can react under certain conditions, notably with:
    - **Oxygen**: Alkanes undergo combustion when reacting with oxygen, especially in engines or furnaces, producing carbon dioxide (CO_2) and water (H_2O) along with significant heat.
    - **Halogens**: Alkanes can react with halogens (such as chlorine or bromine) in halogenation reactions under specific conditions.

Importance and Applications:

- **Commercial Significance**: Alkanes are commercially crucial, serving as the primary constituents of fuels like gasoline and lubricating oils. Their stability and energy content make them essential in various industrial applications.
- **Organic Chemistry**: Alkanes are extensively utilized in organic chemistry as starting materials and solvents, thanks to their relative inertness and ability to undergo specific reactions when activated.

Recent Developments: Recent research has focused on the activation of alkanes using confined chiral Brønsted acids. This novel method aims to improve the efficiency and selectivity of chemical reactions involving alkanes, potentially leading to new pathways for their utilization in synthetic chemistry.

Conclusion: Alkanes are vital compounds in both commercial and chemical contexts. Understanding their properties and reactivity enhances our ability to use them effectively, especially as new methods for activation and transformation continue to emerge in the field of organic chemistry.

GS Paper 2 – Health and Disease Awareness

5 Murine Typhus disease

Context: Murine typhus is a bacterial disease caused by **Rickettsia typhi**, primarily transmitted through flea bites. This disease recently came into focus after a 75-year-old man from Kerala, who had travelled to Vietnam and Cambodia, was diagnosed with it.

Transmission:

- **Vectors**: Murine typhus is transmitted to humans mainly through the bites of infected fleas.
- **Reservoirs**: Rodents, including rats, mice, and mongooses, serve as the primary reservoirs for the disease. The fleas that carry the bacteria can also infest other small mammals, including domestic pets like cats and dogs.
- **Flea Lifespan**: Once infected, fleas can spread the disease for the remainder of their lives.
- **Alternative Transmission**: Humans can contract the disease by coming into contact with flea feces, particularly if the feces enter the body through cuts or scrapes.
- **Human-to-Human Transmission**: Murine typhus is **not** transmitted from person to person or from person to fleas.

Geographic Distribution:

The disease is commonly reported in coastal tropical and subtropical regions where rat populations are abundant. In India, cases have been documented in the Northeast, Madhya Pradesh, and Kashmir.

Symptoms: Symptoms typically manifest **seven to fourteen days** after exposure and may include:

- Fever
- Headaches
- Body aches
- Joint pains
- Nausea and vomiting
- Abdominal pain

Some individuals may later develop rashes on their skin, which can appear days after the initial symptoms.

Treatment:

- **Vaccine**: Currently, there is no vaccine available for murine typhus.
- **Antibiotic Therapy**: The antibiotic **doxycycline** is considered effective for treating murine typhus, but **early diagnosis** is crucial for successful treatment.

Conclusion: Murine typhus poses a significant health risk, particularly in regions with high rodent populations and flea infestations. Awareness of its transmission, symptoms, and treatment options is essential for prevention and effective management of the disease. Prompt medical attention and the use of appropriate antibiotics are key to improving outcomes for those affected.

GS Paper 2 – Governance and Health Institutions

6 National Regulatory Authority (NRA) of India Meets WHO International Standards for Vaccine Regulations

Context: India's vaccine regulatory systems, overseen by the National Regulatory Authority (NRA) and its affiliated institutions, have been declared functional in all key regulatory functions according to the **World Health Organization's (WHO) Global Benchmarking Tool (GBT)**. This assessment highlights India's commitment to maintaining high standards in vaccine regulation.

Key Highlights:

1. **Reassessment with Updated GBT**:
    - In 2017, India's NRA was assessed using the older version of GBT (version V).
    - The recent reassessment utilized the updated GBT version VI, which incorporates more rigorous evaluation criteria.
2. **Maturity Level 3**:
    - India retained a **Maturity Level 3** rating, which confirms a stable, well-functioning, and integrated regulatory system.
    - The NRA achieved the highest marks in several key regulatory functions, reflecting its effectiveness in overseeing vaccine quality and safety.

About WHO's Global Benchmarking Tool (GBT):

- The GBT is a framework used by WHO to evaluate national regulatory systems for various health products, including medicines, vaccines, blood products, and medical devices.
- It incorporates a concept of 'maturity level' ranging from:
    - **Level 1**: Existence of some elements of the regulatory system.
    - **Level 4**: Advanced level of performance and continuous improvement.

National Regulatory Authority (NRA) of India:

- The NRA comprises institutions engaged in the regulation, control, and testing of vaccines. Its primary responsibility is to ensure that vaccines meet international standards for quality, safety, and efficacy.
- Key components of the NRA include:
    - **Central Drugs Standard Control Organization (CDSCO)**
    - **State Drug Regulatory Authorities**
    - **Central Drugs Laboratory**
    - **Immunization Division**
    - **Pharmacovigilance Programme of India (PvPI)**

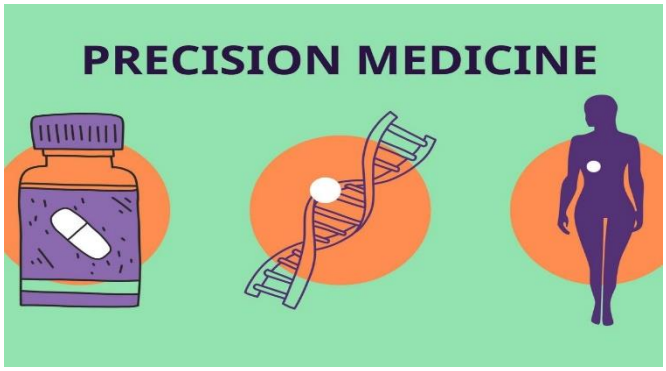
Regulation of Vaccines in India:

- **Import and Manufacturing**: The regulation is governed by the **Drugs and Cosmetics Act, 1940**, along with related rules.
    - Manufacturing licenses are granted after a joint evaluation by the concerned State Licensing Authority and CDSCO.
- **New Vaccines Manufacturing**: The **New Drugs and Clinical Trials Rules, 2019** outlines the requirements for conducting clinical studies and obtaining approvals for new vaccines.
- **Recombinant DNA (r-DNA) Vaccines**: Compliance with guidelines issued by the **Department of Biotechnology** is mandatory for r-DNA vaccines.

Conclusion: The recognition of India's NRA as meeting WHO international standards reinforces the country's commitment to ensuring the safety, efficacy, and quality of vaccines. This not only enhances public confidence in vaccination programs but also positions India as a key player in the global health landscape. The regulatory framework established ensures that vaccines developed and administered in India are of the highest standards, contributing to global health security.

GS Paper 3 – Science and Technology

7 Precision Medicine



Context: Precision medicine is ushering in a transformative era of **personalized healthcare**, evolving significantly since its foundations were laid by scientists during the completion of the **Human Genome Project.** This innovative approach integrates genomics and advanced technologies to tailor medical treatments to the individual characteristics of **patients, ensuring better diagnosis and treatment outcomes.**

Advancements in Precision Medicine:

The Role of Genomics: Genomics has become pivotal in revolutionizing the diagnosis and treatment of various health conditions, including cancers, chronic illnesses, and diseases affecting the immune, cardiovascular, and liver systems. Emerging technologies, such as gene editing and mRNA therapeutics, further enhance the capabilities of precision medicine.

Key Examples:

1. **Gene Therapy**: Researchers successfully restored vision in individuals who lost their sight due to genetic mutations.
2. **Stem Cell Research**: In the U.K., scientists reversed an individual's diabetes by transplanting reengineered stem cells.
3. **COVID-19 Vaccines**: During the pandemic, researchers rapidly developed new **mRNA vaccines**, a breakthrough that earned a **Nobel Prize in 2023.**
4. **Organ-on-Chips**: These microfluidic devices contain human cells that replicate tumor microenvironments, enabling researchers to test drugs in more realistic settings.

Advancements in Precision Medicine in India:

The Indian precision medicine market is experiencing significant growth, projected to reach over **$5 billion by 2030**, with a compound annual growth rate (CAGR) of **16%.** Key developments include:

- **BioE3 Policy**: This new policy focuses on developing precision therapeutics and harnessing biotechnology to create innovative manufacturing processes that mimic natural biological systems. It emphasizes research and development (R&D) and entrepreneurship, aiming to establish biomanufacturing, Bio-AI hubs, and bio-foundries in India.
- **NexCAR19**: In 2023, India's Central Drugs Standard Control Organization approved NexCAR19, the country's first domestically developed CAR-T cell therapy.
- **AI-Driven Facilities**: Siemens Healthineers partnered with the Indian Institute of Science in Bengaluru to launch AI-driven facilities focused on precision medicine.

The Role of Biobanks in Advancing Precision Medicine:

Biobanks are essential for precision medicine, serving as repositories for biological samples (blood, DNA, cells, tissues, and organs) alongside genetic data. These samples, collected from consenting individuals, are crucial for research. The success of precision medicine relies on extensive and diverse biobanks that ensure research benefits a wide range of individuals.

Growth of Biobanks in India:

India currently has 19 registered biobanks hosting a variety of biological specimens, including cancer cell lines. Recent initiatives include:

- **Genome India Program**: Completed sequencing 10,000 genomes from 99 ethnic groups to identify treatments for rare genetic diseases.
- **Phenome India Project**: Collected 10,000 samples to create better prediction models for cardio-metabolic diseases.
- **PRaGeD Mission**: Focused on identifying new genes or variants for targeted therapies for pediatric genetic disorders.

Despite these advancements, stringent regulations around biobanks in India present significant challenges to fully leveraging the benefits of precision medicine.

Challenges in Regulating Biobanks in India

1. **Global Standards vs. Regulatory Gaps**: Countries like the U.K., U.S., Japan, and many European nations have established comprehensive biobanking regulations. In contrast, India's regulations are inconsistent, which can undermine public trust and limit the potential of precision medicine.
2. **Inadequate Ethical Guidelines**: The Indian Council for Medical Research's guidelines have gaps, such as insufficient clarity on how participants' data will be used and the duration of data storage. This raises concerns about privacy and potential discrimination based on genetic information.
3. **Lack of Central Regulation**: The absence of a single authority to regulate biobanks leads to inconsistencies and ethical violations, including unauthorized data sharing.
4. **Unregulated Access to Biological Samples**: Many international pharmaceutical companies can access Indian samples, creating risks associated with research collaborations.
5. **Impact on Data Ownership and Profits**: Regulatory gaps may lead to Indians losing ownership of their biological samples and the profits generated from research findings.

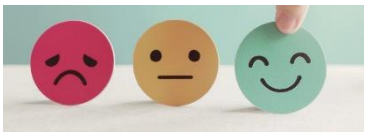
Seizing the Opportunity for Leadership in Biobanking:

1. **Enhancing Public Trust**: Strong protections for data privacy and regulatory oversight will encourage participation in biobanks, providing a solid foundation for research.
2. **Pharmaceutical Diplomacy and Global Aspirations**: As a member of international groups like the Quad and BRICS, India aims to leverage its pharmaceutical capabilities. Aligning biobanking laws with global standards will enhance public trust and participation in precision medicine.

Conclusion: Precision medicine holds tremendous potential to transform healthcare, but to realize this potential, India must address regulatory challenges and establish robust biobanking practices. By enhancing public trust and aligning with global standards, India can emerge as a leader in precision medicine and biotechnology.

GS Paper 2 – Health Issues and Policies

8 WHO and UNICEF Release Report on Mental Health of Children and Young People



Context: On **October 10**, the World Health Organization (WHO) and UNICEF released a significant report titled *"Mental Health of Children and Young People - Service Guidance"* to coincide with **World Mental Health Day.**

- **World Mental Health Day**, an event celebrated annually since 1992, initiated by the World Federation for Mental Health. The report emphasizes the urgent need for improved mental health services for children and adolescents, reflecting the growing recognition of mental health issues in young populations.

Understanding Mental Health:

Mental health encompasses a state of well-being that enables individuals to cope with life stresses, realize their potential, learn effectively, work productively, and contribute to their communities.

Key Findings of the Report

1. **Early Onset of Mental Health Conditions**: One-third of mental health conditions manifest before the age of **14**, with half emerging by the age of **18**.
2. **Prevalence Among Adolescents**: An estimated **15%** of adolescents aged **10-19** experience mental health conditions, with anxiety, depression, and behavioral disorders being the most common.
3. **Suicide Statistics**: Suicide ranks as the **fourth leading cause of death** among individuals aged **15–19**.
4. **Barriers to Care**: Many young people face challenges in accessing necessary mental health care due to limited availability, high costs, and stigma.
5. **Funding and Resource Gaps**: Public funding and human resources for mental health services are notably low worldwide, particularly for children and adolescents.
6. **Recommendation for Community-Based Care**: The report advocates for phasing out institutional care in favor of community-based services that enable children to grow within their families and communities, ensuring continuity in their education, social relationships, and overall development.

India's Efforts in Mental Health:

The report acknowledges India's progress in addressing mental health issues among young people:

- **Mental Health Care Act 2017**: This legislation decriminalized suicidal behaviors, promoting a more supportive environment for individuals struggling with mental health challenges.
- **Schizophrenia Research Foundation (SCARF)**: Based in Chennai, SCARF provides free care in line with international standards, particularly focusing on early psychosis services.
- **Centre for Mental Health Law and Policy**: Located in Maharashtra, this center engages young adults in co-producing *Outlive*, a prevention program aimed at reducing urban suicides among marginalized young people aged **18–24**, addressing issues related to caste, class, gender, and sexuality.

Conclusion: The WHO and UNICEF report serves as a crucial reminder of the pressing need for enhanced mental health services for children and young people globally. With one in seven adolescents facing mental health issues, the emphasis on community-based care, along with the recognition of initiatives like those in India, is vital for fostering a healthier future for the younger generation.

GS Paper 3 – Economic Issues

9 Serious Fraud Investigation Office (SFIO)

Context: The Serious Fraud Investigation Office (SFIO) has recently been in the spotlight following the recording of the statement of the daughter of Kerala's Chief Minister, who is also the owner of a now-dormant information technology firm. This development has raised significant political controversy.

About Serious Fraud Investigation Office (SFIO):

- **Establishment**: The SFIO was established on **July 21, 2015**, and was granted statutory status under **Section 211** of the **Companies Act, 2013**.
- **Nature and Function**:
    - SFIO is a specialized corporate fraud investigation agency functioning under the **Ministry of Corporate Affairs**.
    - It is a **multi-disciplinary organization** comprising experts in various fields, including:
        - **Accountancy**
        - **Forensic Auditing**
        - **Law**
        - **Information Technology**
        - **Investigation**
        - **Company Law**
        - **Capital Markets**
        - **Taxation**

सत्यमेव जयते
SFIO
Serious Fraud Investigation Office

- **Objective**: The primary aim of the SFIO is to detect and prosecute white-collar crimes and frauds within the corporate sector.

Criteria for Investigation:

The SFIO investigates cases that exhibit certain characteristics:

1. **Complexity**: Cases that are complex and involve interdepartmental and multidisciplinary implications.
2. **Public Interest**: Cases with substantial public interest, assessed by the monetary size or impact.
3. **Systemic Improvement**: Cases where investigations can lead to improvements in systems, laws, or procedures.
4. **Source of Referral**: The SFIO takes up investigations based on referrals from:
    - The **Department of Company Affairs**.
    - Reports from the **Registrar** or inspector under **Section 208** of the Companies Act, 2013.
    - Special resolutions passed by companies requiring investigation.
    - Requests from the Central or State Governments.

5. **Independent Cases**: The SFIO can also initiate investigations independently, as determined by the Director, who must provide written reasons for taking up the case.

Authority and Structure:

- Upon assignment of a case to the SFIO, no other investigative agency can concurrently investigate any offense under the Companies Act.
- **Leadership**: The SFIO is headed by a director, who holds the rank of **Joint Secretary** in the Government of India. The Director is supported by:
    - Additional Directors
    - Joint Directors
    - Deputy Directors
    - Senior Assistant Directors
    - Assistant Directors
    - Prosecutors
    - Other secretarial staff
- **Headquarters and Regional Offices**: The SFIO is headquartered in **New Delhi**, with regional offices located in:
    - **Mumbai**
    - **Chennai**
    - **Hyderabad**
    - **Kolkata**

Conclusion: The Serious Fraud Investigation Office plays a critical role in maintaining corporate governance and integrity in India. By investigating complex fraud cases and ensuring accountability in the corporate sector, the SFIO contributes to enhancing public trust in financial systems and practices.

GS Paper 3 – Science and Technology

10 Space Based Surveillance (SBS) Mission

Context: The **Cabinet Committee on Security (CCS)** has recently approved the third phase of the **Space Based Surveillance (SBS)** mission. This mission aims to enhance awareness of land and maritime domains for both civilian and military applications.

Key Points of the SBS Mission:

- **Launch of Satellites**: The SBS mission will involve the deployment of at least **52 satellites** in **Low Earth Orbit (LEO)** and **Geostationary Orbit (GEO)**.
    - **21 satellites** will be constructed by the **Indian Space Research Organisation (ISRO)**.
    - **31 satellites** will be developed by various private companies.
- **Operations**: The mission will be operated by the **National Security Council Secretariat** and the **Defence Space Agency**, both under the **Ministry of Defence**.
- **Support to Armed Forces**: Each of the three armed forces (Army, Navy, and Air Force) will have dedicated satellites for operations related to land, sea, or air missions.

Phases of the SBS Mission:

1. **Phase I**: Initiated in **2001**, the first phase included the launch of four satellites, notably **RISAT 2**.
2. **Phase II**: Launched in **2013**, the second phase involved the deployment of six satellites, including **RISAT 2A**.

Support and Goals

- **International Cooperation**: The SBS 3 mission will be bolstered by:
    - Acquisition of **31 Predator drones** from the United States.
    - Joint manufacturing of military satellites with **France**.
    - Development of **anti-satellite missile capabilities**.
- **Strategic Objectives**: India aims to enhance its capabilities in:
    - Detecting enemy submarines in the **Indo-Pacific region**.
    - Monitoring infrastructure developments by adversaries along its land and maritime borders.

Overview of the Cabinet Committee on Security (CCS): The CCS is a vital body within the Government of India, focusing on national security and defense policy matters.

Key Information:

- **Chairman**: The Prime Minister serves as the chair of the CCS.
- **Members**:
    - Prime Minister

- Defence Minister
- Home Minister
- Finance Minister
- External Affairs Minister

Functions of the CCS:

- The CCS addresses all issues related to **India's defence and security**.
- It reviews matters concerning **law and order** and **national security**.
- The committee discusses various measures necessary to enhance national security.
- It deals with foreign policy matters that could impact internal or external security.
- The CCS considers security-related agreements with other countries and discusses political issues affecting national security.

Cabinet Committees in India: Cabinet committees, though not mentioned in the Indian Constitution, allow smaller groups of ministers to streamline decision-making on specific policy areas, thus easing the workload of the Union Cabinet.

Formation and Reorganization: Cabinet committees are formed or reconstituted following a new government's formation or a cabinet reshuffle.

Major Cabinet Committees:

1. Cabinet Committee on Economic Affairs
2. Cabinet Committee on Political Affairs
3. Cabinet Committee on Investment and Development
4. **Cabinet Committee on Security**
5. Cabinet Committee on Parliamentary Affairs
6. Cabinet Committee on Employment and Skill Development
7. Cabinet Committee on Housing
8. Appointments Committee of the Cabinet

This comprehensive framework reflects India's strategic approach to enhancing its national security through advanced technological initiatives like the SBS mission while ensuring effective governance through the CCS.