

KAVACH- AN ANTI-COLLISION SYSTEM

Recently, the Supreme Court appreciates steps taken by Railways to roll out Kavach anti-collision system.



- The KAVACH is an indigenously developed **Automatic Train Protection (ATP)** system by the **Research Design and Standards Organisation (RDSO)** in collaboration with the Indian industry.
- It is a state-of-the-art electronic system with Safety Integrity Level-4 (SIL-4) standards. It makes use of **high frequency radio communication** and operates on the principle of continuous update of movement to prevent collisions

The salient features:

- It is meant to provide protection by **preventing trains to pass the signal at Red** (which marks danger) and **avoid collision**.
 - It activates the train's **braking system automatically** if the driver fails to control the train as per speed restrictions.
 - It also providing support for train operations during **adverse weather conditions such as dense fog**.
 - It works on the principle of continuous update of Movement authority.
 - It actively uses the **SOS to prevent any kind of mishap and accidents**.
-

WHAT IS A SPECIAL RUPEE VOSTRO ACCOUNT (SRVA)?



India has simplified the payment mechanism for traders importing pulses from Myanmar, requiring them to use the Rupee/Kyat direct payment system through the Special Rupee Vostro Account (SRVA).

Vostro Account is an account that domestic banks hold for foreign banks in the former's domestic currency, in this case, the rupee.

- Domestic banks use it to **provide international banking services** to their clients who have global banking needs.
- It is an integral **offshoot of correspondent banking** that entails a bank (or an intermediary) to facilitate wire transfers, conduct business transactions, accept deposits and gather documents on behalf of the other bank.
- It **helps domestic banks gain wider access to foreign financial markets** and serve international clients without having to be physically present abroad.

About SRVA:

- The **settlement of international trade through Indian Rupees (INR)** is an additional arrangement to the existing system of settlement that uses freely convertible currencies and works as a complimentary system.
- Freely convertible currency is a currency which is permitted by the rules and regulations of the country concerned to be converted into major reserve currencies like the U.S. Dollar, Pound Sterling.
- This will reduce dependence on hard (freely convertible) currency.
- SRVA requires prior approval of RBI before opening, unlike Rupee Vostro account.

How does SRVA arrangement function?

- The framework entails **three important components**, namely, invoicing, exchange rate and settlement.
 - Invoicing entails that all exports and imports must be denominated and **invoiced in INR**.
 - The **exchange rate** between the currencies of the trading partner countries **would be market-determined**.
 - The **final settlement** also **takes place in Indian National Rupee (INR)**.
- The **authorised domestic dealer banks** (those authorised to deal in foreign currencies) are required to open SRVA accounts for correspondent banks of the partner trading country.

- **Domestic importers** are required to make payment (in INR) into the **SRVA account** of the correspondent bank against the invoices for supply of goods or services from the overseas seller/supplier.
- Similarly, **domestic exporters** are to be **paid the export proceeds (in INR)** from the balances in the **designated account** of the correspondent bank of the **partner country**.
- All reporting of cross-border transactions are to be done in accordance with the extant guidelines under the **Foreign Exchange Management Act (FEMA), 1999**.

What are the eligibility criteria of banks?

- Banks from partner countries are required to approach an authorised domestic dealer bank for opening the SRVA.
- The domestic bank would then seek approval from the apex banking regulator, providing details of the arrangement.
- It would be the responsibility of the domestic banks to ensure that the correspondent bank is not from a country mentioned in the updated **Financial Action Task Force (FATF) Public Statement on High-Risk and Non-Co-operative jurisdictions**.
- Authorised banks **can open multiple SRV accounts** for different banks from the same country.
- Further, **balances in the account** can be **repatriated in freely convertible currency** and/or the currency of the beneficiary partner country, depending on the underlying transaction, that is, for which the account was credited.

Athletics Federation of India (AFI)



The Athletics Federation of India has disaffiliated 16 district associations across the country for failing to send teams for the National inter-district junior athletics meet.

Athletics Federation of India (AFI) is the top governing body responsible for overseeing athletics in India. It is a **non-governmental** and non-profitable autonomous body.

- It is affiliated to the World Athletics, the Asian Athletics Association (AAA), and the Indian Olympic Association. It has as many as **32 affiliated state units**.
- It came into existence in 1946 and the federation organises the National Championships, **trains the Indian Athletics National Campers, selects the Indian Athletics Teams** for various international competitions, including the Olympics, Asian Games, CWG, World Championships, Asian Championships, and other international meets, **conducts the National Championships** for various age categories.
- Besides, the AFI **conducts international and national championships** and various meets to promote the sport, popularise it amongst the masses and make athletics commercially attractive for the further growth of the athlete and the sport.
- The federation also **supervises and assists its state units** in their activities, plans and sets up special coaching camps, coaches training and takes initiatives for development programme and **grass root promotion of athletics** in India.

WHAT IS COMBINED MARITIME FORCES (CMF)?

INS Talwar of the Indian Navy recently seized drugs in the Arabian Sea as part of an operation led by the **Combined Maritime Forces (CMF)**.



Combined Maritime Forces (CMF) is a **multi-national naval partnership** based in Bahrain which exists to promote security, stability and prosperity across international waters, which encompass some of the world's most important shipping lanes.

- Its main **focus areas** are defeating **terrorism**, preventing **piracy**, encouraging **regional cooperation** and promoting a **safe maritime environment**.
- CMF **counters violent extremism and terrorist networks** in maritime areas of responsibility; works with regional and other partners to improve overall security and



CROSS & CLIMB ROHTAK



stability; helps strengthen regional nations' maritime capabilities; and when requested, responds to **environmental and humanitarian crises**.

- It is **comprised of five task forces**:
 - CTF 150 (Gulf of Oman Security and Counter-Terrorism)
 - CTF 151 (counter-piracy)
 - CTF 152 (Arabian Gulf Security and Cooperation)
 - CTF 153 (Red Sea/Gulf of Aden security and cooperation)
 - CTF 154 (maritime security training).
- **Member Nations:** Australia, Bahrain, Belgium, Brazil, Canada, Colombia, Denmark, Ecuador, Egypt, France, Germany, Greece, India, Iraq, Italy, Japan, Jordan, Kenya, Republic of Korea, Kuwait, Malaysia, the Netherlands, New Zealand, Norway, Pakistan, the Philippines, Poland, Portugal, Qatar, Saudi Arabia, Seychelles, Singapore, Spain, Thailand, Türkiye, UAE, United Kingdom, United States and Yemen.
- Participation is **purely voluntary**. No nation is asked to carry out any duty that it is unwilling to conduct. The member nations are not bound by either a political or military mandate.
- CMF is a flexible organisation. **Contributions can vary** from the provision of a liaison officer at CMF HQ in Bahrain to the supply of warships or support vessels in task forces, and maritime reconnaissance aircraft based on land.
- It **can also call on warships not explicitly assigned to CMF** to give associated support, which is assistance they can offer if they have the time and capacity to do so whilst undertaking national tasking.
- **Headquarters** are co-located with US Naval Central Command and US Navy Fifth Fleet at Naval Support Activity (NSA) **Bahrain**.
- **Command:**
 - CMF is **commanded by a U.S. Navy Vice Admiral**
 - CMF's Deputy Commander is a United Kingdom Royal Navy Commodore
 - Other senior staff roles at CMF's headquarters are filled by personnel from member nations.

HOW CAN THE PROCESS OF VOTING BE MADE MORE ROBUST

Why in News?

The Supreme Court has decided to hear petitions seeking 100% cross-verification of the Voter Verifiable Paper Audit Trail (VVPAT) slips with the vote count as per Electronic Voting Machines (EVMs).

What is the History of the Voting Process?

- **First two general elections of 1952 and 1957:** A separate box was placed for each candidate with their election symbol. Voters had to drop a blank ballot paper into the box of the candidate whom they wanted to vote for.
- **Third general elections:** From the third election, the ballot paper with names of candidates and their symbols was introduced with voters putting a stamp on the candidate of their choice.
- **Introduction of the EVM:** It was introduced on a **trial basis in 1982** in the Assembly constituency of Paravur in Kerala.
 - They were deployed in all booths during the Assembly elections of Tamil Nadu, Kerala, Puducherry and West Bengal in **2001**.
 - In the **2004** general elections to the Lok Sabha, EVMs were used in all 543 constituencies.
- **Introduction of the VVPAT:** In Subramanian Swamy versus Election Commission of India (2013), the SC ruled that a paper trail is an indispensable requirement for free and fair elections.
 - The **2019** general elections had EVMs backed with 100% VVPAT in all constituencies.
- **Doubts raised about the functioning of EVMs:**
 - The most repeated allegation is that EVMs are **susceptible to hacking** as it is an electronic device.

- **The sample size for matching** of the EVM count with VVPAT slips at present is 5 per assembly constituency/segment. This is **not based on any scientific criteria** and may fail to detect defective EVMs during counting.
- The present process also **allows for booth-wise polling behaviour** to be identified by various parties that can result in **profiling and intimidation**.
- **Clarification given by the ECI:** EVMs are standalone devices like a calculator with no connectivity to any external device and hence free from any kind of external hack.

Way Forward to Make Process of Voting More Robust:

- **The sample for matching of EVM count and VVPAT slips** should be decided in a **scientific manner**. 100% match of EVM count with VVPAT slips would be unscientific and cumbersome.
 - **In case of even a single error**, the VVPAT slips should be counted fully for the concerned region and form the basis for results.
 - This would **instil a statistically significant confidence** in the counting process.
- In order to provide a degree of cover for voters at the booth level, **‘totaliser’** machines can be introduced that would aggregate votes in 15-20 EVMs before revealing the candidate-wise count.

WHAT IS IMPORTED INFLATION?

The Asian Development Bank recently warned that India could face imported inflation as the rupee could depreciate amid the rise in interest rates in the West.



About Imported Inflation:

- It is a general and sustainable **price increase due to an increase in the costs of imported products**.
- This price increase concerns the price of raw materials and all imported products or services used by companies in a country. It is **also referred to as cost inflation**.

- **Several factors cause imported inflation:**
 - **Exchange Rates:** The more the currency depreciates on the foreign exchange market, the **higher the price of imports**. Effectively, more money is needed to buy goods and services outside the country.
 - **Commodity Prices:** When commodity prices rise globally, it **directly impacts the cost of imports** and can lead to higher inflation in the importing country.
 - **Trade Policies and Global Supply-Chains:** Changes in trade policies, such as tariffs and quotas, can influence the cost of imported goods.
 - **Transportation Costs:** Fluctuations in transportation costs, influenced by factors like fuel prices and logistical challenges, can affect the final cost of imported goods.
 - **Effect:**
 - With imported inflation, **production costs are higher** for companies. These companies most often reflect this increase in the selling price of the goods and services sold. As a result, **prices within the country rise**.
-

WHAT IS GAIA-BH3?

Recently, astronomers spotted the most massive known stellar black hole in the Milky Way galaxy named Gaia-BH3.



About Gaia-BH3:

- It is the **most massive stellar black hole** yet discovered in the Milky Way galaxy. It was spotted in data from the European Space Agency's Gaia mission because it imposes an odd 'wobbling' motion on the companion star orbiting it.
- The researchers used the European Southern Observatory's Very Large Telescope in Chile's Atacama Desert and other ground-based observatories to confirm the mass of Gaia BH3.

- It has a mass that is nearly 33 times that of our sun, and it's located 1,926 light-years away in the **Aquila constellation**, making it the second-closest known black hole to Earth.
- The **closest black hole is Gaia BH1**, which is located about 1,500 light-years away and has a mass that is nearly 10 times that of our sun.
- **Most Massive Black Hole in Milky Way galaxy:** The title for the most massive black hole in our galaxy will always belong to **Sagittarius A***, the supermassive black hole located at the center of the Milky Way, which has about 4 million times the mass of the sun, but that is because it's a **supermassive black hole**, rather than a stellar black hole.

Stellar black hole vs Supermassive black hole:

- **Stellar-mass black holes** are formed from the gravitational collapse of a single star or from the merger of two neutron stars. Therefore, they have masses similar to the masses of stars.
 - More specifically, stellar-mass black holes have masses ranging from about 3 times the mass of our sun to about 50 times the mass of our sun.
- In contrast, **supermassive black holes** have a **mass greater than** about **50,000 times the mass of our sun** and are typically millions to billions of times the mass of our sun.
 - They are far too large to have formed from the gravitational collapse of a single star. However, scientists do not currently know how they form.
- Supermassive black holes are **always found at the center of a galaxy** and almost **all galaxies have a supermassive black hole** at its center. This seems to suggest that each supermassive black hole is formed as part of the formation of its galaxy.