NEXT IAS

India-Russia Relations

S-500 Air Defence System

Context:

- **Russian President Vladimir Putin** begins a **two-day visit to India** from **Dec 04, 2025,** which includes a **private dinner hosted by Prime Minister Narendra Modi** and the **23rd India-Russia annual summit.**

1. Why is the timing of the visit significant?

- The visit comes as **India and Russia mark 25 years of a strategic partnership** that began in Putin's first year in office as his country's head of state.
- Since **2000, New Delhi and Moscow** have had in place a system of annual summits:

- The I**ndian prime minister would visit Russia one year**, and the **Russian president** would pay a return visit to India the following year.
- This tradition, however, was broken in **2022, the year of Russia's full-scale invasion of Ukraine.**
- **PM Modi** was supposed to visit Russia for the summit, but the **conclave was put off.**
- In 2023, **Putin skipped a visit to India for the G20 summit in New Delhi.**
- At the time, Putin was rarely travelling abroad, largely because of an **International Criminal Court (ICC) warrant** against him related to the Ukraine war.
- **India is not a member of the ICC** and so it would have been safe for Putin to attend, but **Western members of the G20** made it clear that their leaders would be uncomfortable sharing the room with the Russian president.
- Finally, in **2024, the annual summit resumed, with Modi visiting Russia.**
- This time Putin visits **New Delhi after a span of four years.**

2. What is the history of India- Russia relations?

Time period	Description
1947	• **India and the USSR** established diplomatic relations just months before India gained independence in **August 1947.**  • India was on a **quest to achieve economic self-sufficiency,** so the then-**Soviet Union** was an important partner in terms of providing support for the **country's heavy industry,** with **investment in mining, energy and steel production**. • **India's economic planning model** was also based on the **Soviet five-year plan.**
Cold War Period (1947-1991)	• The **USSR emerged** as a **reliable ally for India,** especially during times of Western hostility. • Both countries signed the **Treaty of Peace, Friendship, and Cooperation (1971)** that laid the foundation for a strategic partnership.

	 • During the **1965 war between India and Pakistan,** the **USSR played a mediating role** and hosted the so-called **Tashkent summit** in 1966 where a peace treaty was signed. • The **Soviet Union also used its UN Security Council veto** several times in **support of India, half a dozen times** between **1957 and 1971.** • This was usually on the **issue of Kashmir** and once with **respect to India's military intervention in Goa to end Portuguese rule**. • It was also routine for the **Indian prime minister to stop over in Moscow** on the way back from Washington. • USSR supported India during the **1971 war with Pakistan**,in which the **US and China sided with Pakistan.**
1991	• India recognised the **Russian Federation after the dissolution of the Soviet Union.**

	
1993	• Treaty of Friendship and Cooperation: ▪ The **India-Russia Treaty of Friendship** and **Cooperation** was **signed on January 28, 1993,** after the **dissolution of the Soviet Union**, and it reaffirmed the **principles of cooperation from the earlier 1971 treaty.**  ▪ The **1993 treaty** established a **new legal basis for bilateral relations**, emphasizing **mutual respect, equal and mutually beneficial ties,** and **strengthening the role of the UN and international law.**

2000	• **Declaration of Strategic Partnership:** ▪ The **Declaration on India-Russia Strategic Partnership was signed in October 2000,** establishing a framework for **elevated bilateral cooperation across political, security, economic, defence, and cultural areas.** ▪ This partnership was further enhanced to a **"Special and Privileged Strategic Partnership" in 2010** and has been **maintained through regular annual summits between the leaders of both countries.** 

3. Mention key aspects of India-Russia bilateral relations?

- **Russia** has been a **longstanding and time-tested partner of India. Since the signing of the "Declaration on the India-Russia Strategic Partnership"** in **October 2000**, **India-Russia ties have evolved significantly, touching political, security, defence, trade and economy, science and technology, culture, and people-to-people cooperation.**
- In **December 2010, during the Russian President's visit to India**, this partnership was elevated to the level of a **"Special and Privileged Strategic Partnership."**
- Under this **Partnership, several institutionalized dialogue mechanisms operate at both political and official levels** to ensure regular interaction and follow-up on cooperation activities.
- **India and Russia also work closely at strategic, economic and defence levels** through formalized institutions like **India-Russia Intergovernmental Commission (IRIGC).**
- **It has two parts:**

- One is the T**rade, Economic, Scientific, Technological and Cultural Cooperation division (IRIGC-TEC)**, led by **India's External Affairs Minister (EAM) and Russia's First Deputy Prime Minister (DPM)**;
- The other is the **Military & Military-Technical Cooperation division (IRIGC-M&MTC), headed by the defence ministers of the two countries.**

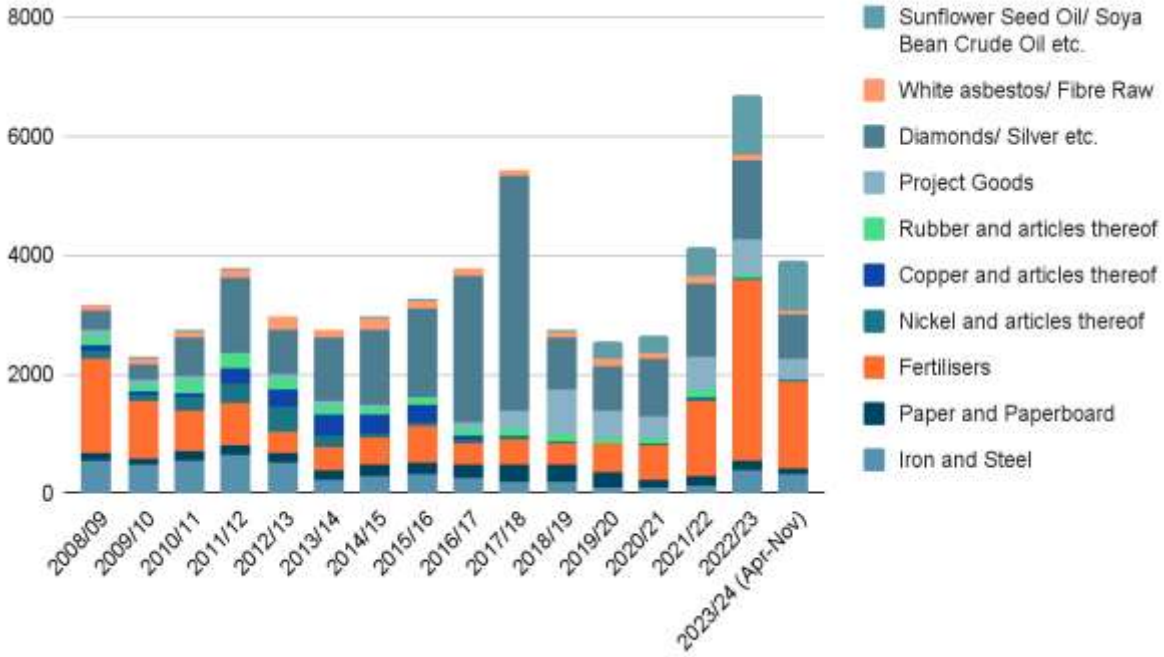
- In **December 2021**, a new format called the **"2+2 Dialogue" was added, where both Foreign and Defence Ministers meet simultaneously.**
- This was done **alongside; the summit level talks between the Prime Minister of India and the President of Russia.**

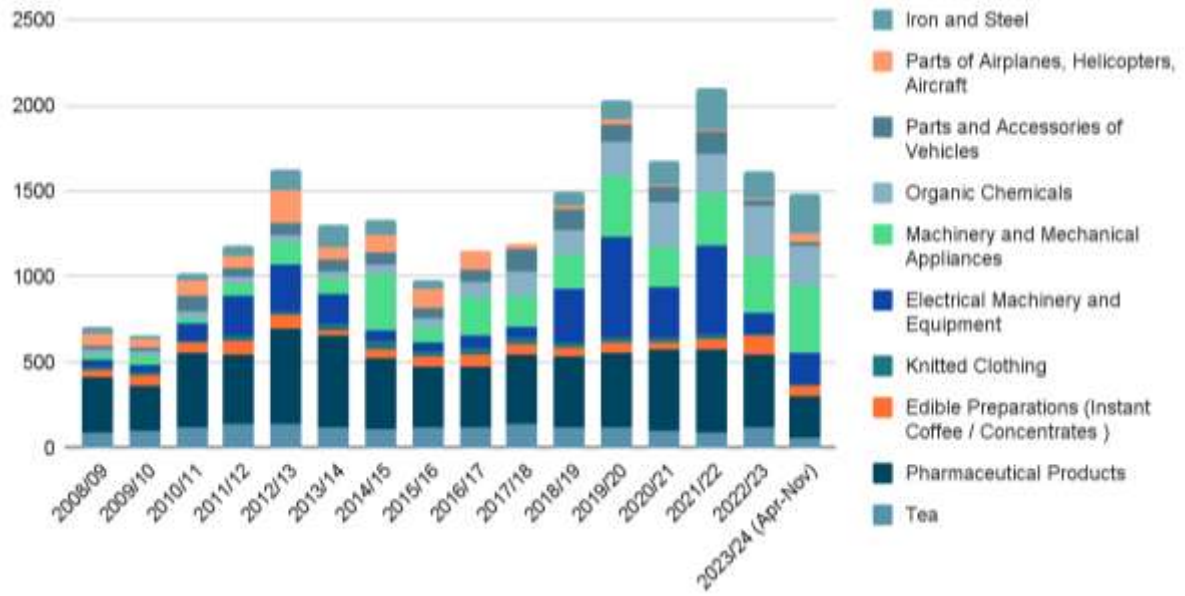
The Inter governmental Commission is a mechanism for regularly monitoring bilateral progress across the sectors of trade and economic cooperation between the two countries which was set up by an Agreement on inter governmental Commission on Trade, Economic, Scientific and Technological Cooperation signed in May 1992.

4. What are the key aspects of India -Russia Economic Relations?

- **India and Russia** have shared a **long-standing relationship**, with bilateral **trade and investment ties dating back to the Soviet era.**
- Over the years, the **two nations** have strengthened their **economic cooperation, with bilateral trade** reaching unprecedented heights.
- In the **post-Soviet era, India-Russia trade relations** continued to grow, with bilateral trade increasing from **USD 1.4 billion in 1995 to USD 68.7 billion in the Financial Year 2024-25.**

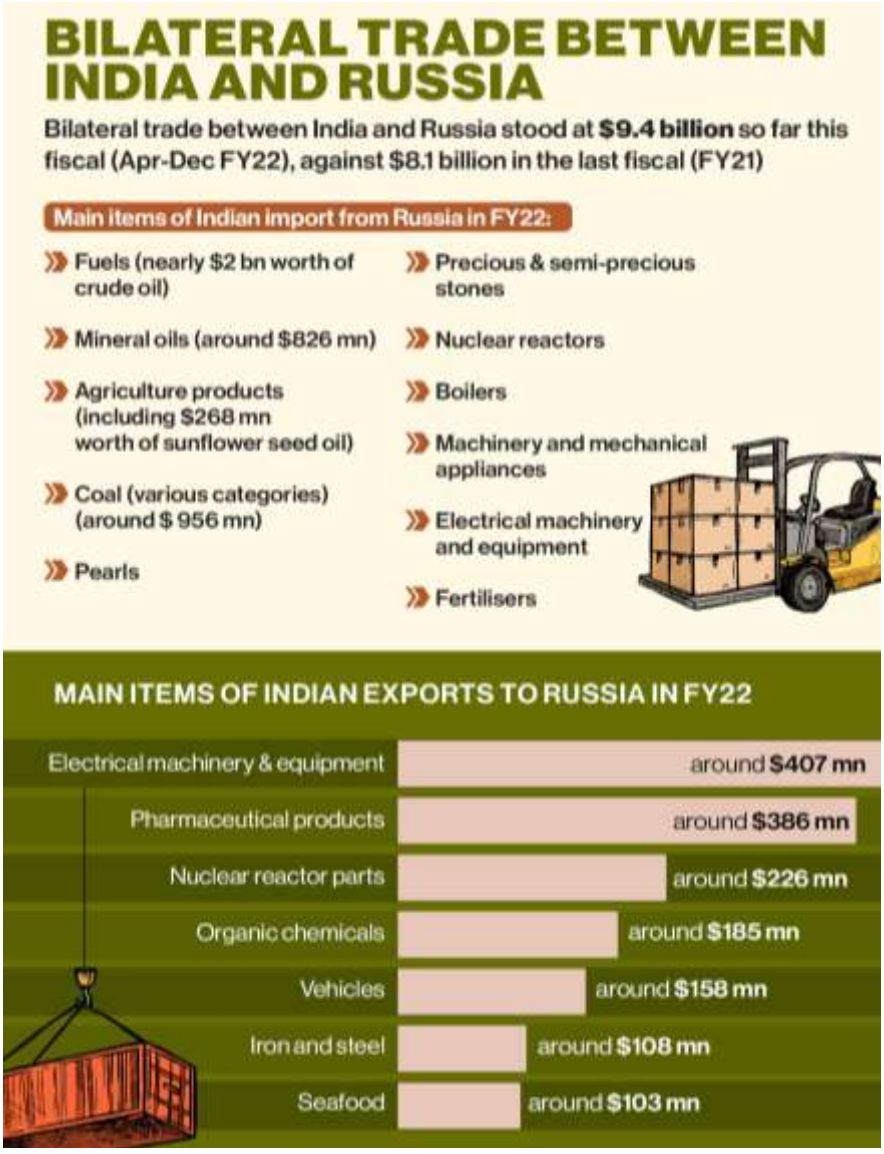
- The **two nations** have also strengthened their **investment ties**, with Indian companies investing in **Russia's oil and gas, pharmaceuticals, and IT sectors, and Russian companies investing in India's energy, infrastructure, and manufacturing sectors.**
- Both countries are working towards **ambitious targets set by their leaders: $50 billion in mutual investments by 2025 and $100 billion in annual bilateral trade by 2030.**
- Bilateral trade has grown rapidly and reached a **record $68.7 billion in FY 2024-25, with Indian exports at $4.9 billion (mainly pharmaceuticals, chemicals, iron & steel, and marine products)** and imports from **Russia at $63.8 billion (primarily crude oil and petroleum products, sunflower oil, fertilizers, coking coal, and precious stones/metals).**
- **Bilateral trade in services** has **remained stable during the last few years. It amounted to $1.021 billion for the year 2021**.
- **Bilateral investments between the two countries remain strong with a target of $50 billion investment by 2025.**





Dimensions	Descriptions
Bilateral Trade Figures	• **Bilateral trade between India and Russia** reached a record high of **USD 68.7 billion in FY 2024-25**, nearly **5.8 times higher than the pre-pandemic trade of USD 10.1 billion.** • It comprises **India's exports worth USD 4.88 billion** and imports from **Russia amounting to USD 63.84 billion.** • Key Indian exports include **agri-products (fish, shrimp, rice, tobacco, tea, coffee, grapes), chemical products, pharmaceuticals, iron and steel, ceramic products, aeroplane components, machinery, glass and glassware, clothing and knitwear, leather goods,rubber articles, electrical machinery, and surgical tools.** • Major imports from **Russia are dominated by oil and petroleum product, fertilizers, bituminous substances, mineral fuels, mineral waxes, machinery, equipment, precious metals and stones, wood, pulp and paper products, metals and vegetable oils.**

	• **Bilateral trade in services** has remained stable over the past five years, with a trade balance **favoring Russia.** In 2021, it totaled **USD 1.021 billion.** • Both sides expect to reach the **bilateral trade target of USD 100 billion by 2030.**
Bilateral Investment Figures	• **At the summit in New Delhi in December 2021, the leaders of the two countries confirmed the goal of increasing the bilateral investment volume to USD 50 billion by 2025.**



	• **As of October 2023, India's investments in Russia were estimated to be USD 16 billion, up from USD 6.5 billion in 2011. Russian Investments in India total around USD 20 billion as per the remarks made by President Putin in December 2024.** • **Russian investments in India are concentrated in sectors like oil and gas, petrochemicals, banking, railways, and steel.** ▪ **Meanwhile, Indian investments in Russia primarily focus on oil and gas, along with pharmaceuticals.**
Bilateral Institutional Mechanisms	• **India-Russia Inter-governmental Commission** on **Trade, Economic, Scientific, Technological and Cultural Cooperation (IRIGC-TEC)** is the apex **G2G forum for bilateral economic cooperation.** ▪ It is chaired by **External Affairs Minister (EAM) of India Dr. S Jaishankar** and **First Deputy Prime Minister (DPM) of Russia Mr. Denis Manturov.** The 25th session of IRIGC-TEC was held in **New Delhi on 12 November, 2024.** • At present, there are **17 Working Groups (WG) and 6 Sub-Groups (SG)** under **IRIGC namely, WGs on Trade and Economic Cooperation, Modernization and Industrial Cooperation, Priority Investment Projects, Banking and Financial Matters, Energy & Energy Efficiency, ICT, Pharmaceuticals, Culture, Science and Technology, Agriculture, Urban Development, Road Transport, Higher Education, Northern Sea Route, issues of Climate change and low carbon development, Manpower Cooperation**.

	▪ The SGs include **Trade Barriers, Civil Aviation, Fertilizers, Mining, Railways and Modernization.** • **India-Russia Strategic Economic Dialogue (IRSED) is another G2G mechanism** co-chaired by V**ice Chairman, NITI Aayog on Indian side and Minister of Economic Development of the Russian Federation. 3rd round of the IRSED was held on April 15th 2021** in a **video-conferencing mode.** ▪ There are **six coordination** committees under the IRSED in six areas – **Transport, Agriculture, Digital transformation, SMEs, Trade and Banking and Tourism.**
High-level Visits (Prime Minister of India)	• The **Hon'ble Prime Minister of India, Shri Narendra Modi**, has undertaken several visits to Russia, **significantly bolstering India-Russia economic relations.** • During **Prime Minister's inaugural visit** in **2014**, key agreements were reached on **defense cooperation and nuclear energy, with a bilateral trade target of USD 20 billion set for 2015.** • The **2017 visit witnessed the signing of agreements for six additional nuclear reactors** and strengthened defense cooperation, with a **revised trade target of USD 30 billion by 2025.** • The **2018 SCO Summit facilitated regional trade cooperation**, while the **2019 visit expanded energy cooperation, defense collaboration, and set an ambitious trade target of USD 50 billion by 2025.**

	• The annual visit of **Prime Minister Narendra Modi to Russia in July 2024** marked **significant advancements in economic and trade cooperation.** • Key **agreements included setting a bilateral trade target of USD 100 billion by 2030**, exploring new long-term contracts in **energy resources, and promoting industrial cooperation in sectors like transport engineering and metallurgy.**
High-level Visits (Russian President)	• **President Vladimir Putin** has visited India **several times over the last two and half decades** and has been instrumental in **nurturing the relationship after the collapse of the Soviet Union.** • President **Putin visited India in December 2021** when he **traveled with Russia's defense and foreign ministers** in a visit that saw the **two countries reinforce their ties with a military and technical** cooperation pact until **2031 and a pledge to boost annual trade to USD 30 billion** by **2025**. The two countries had signed 2**8 investment pacts, including deals on steel, shipbuilding, coal and energy.** • In **October 2018, President Putin** visited **New Delhi for an annual summit with Prime Minister Narendra Modi.** ▪ Both sides signed a **USD 5 billion deal on S-400 surface to air missile systems to be supplied by Russia to India.**
High-level Visits (Ministerial	• During **August 11-13, 2019, Commerce & Industry Minister (CIM) Shri Piyush Goyal led a high-power delegation of Chief Ministers of**

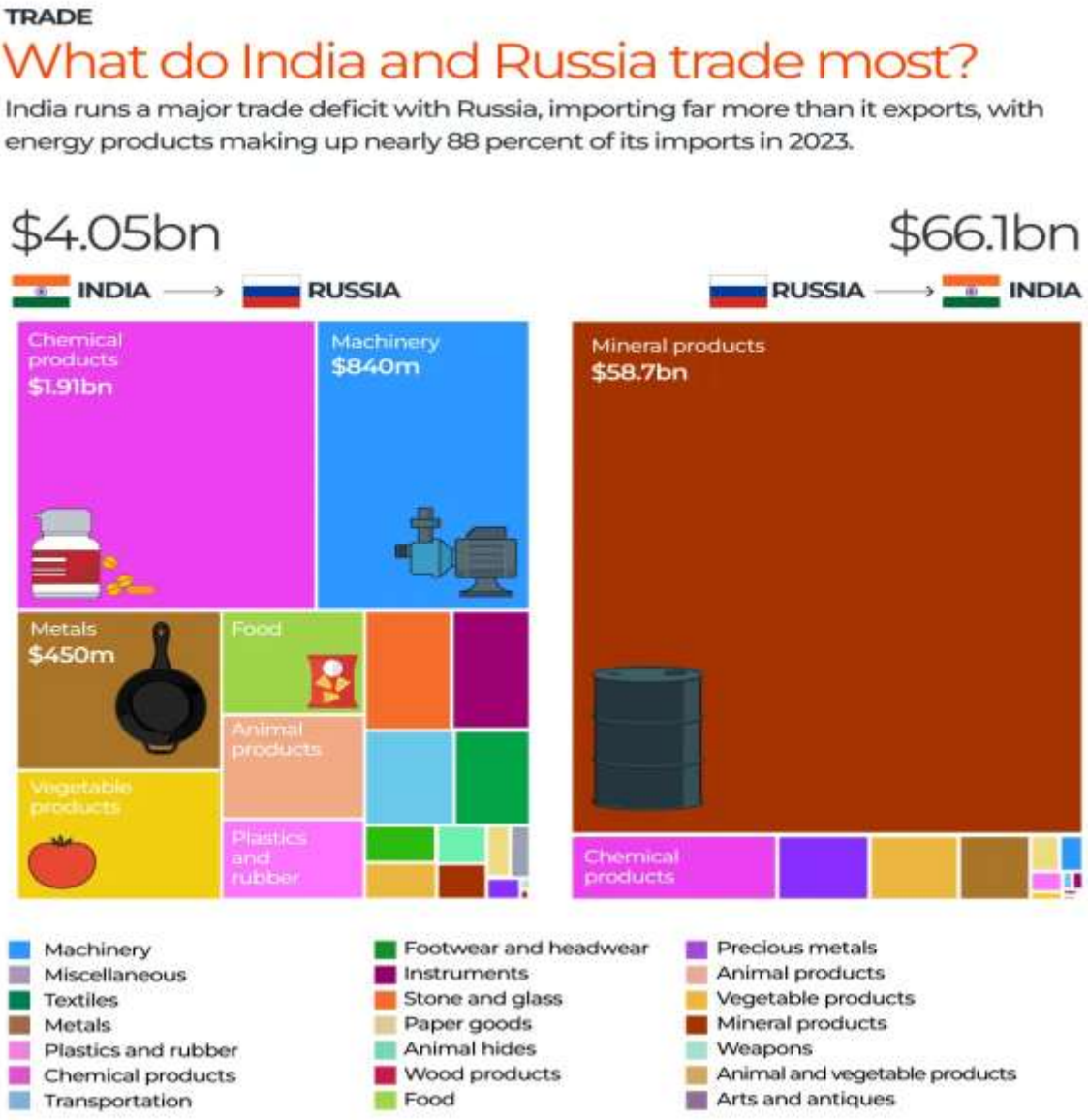
Level)	**Haryana, Gujarat, Uttar Pradesh and Goa** and about **140 Indian companies to Vladivostok from About 200 Russian companies**, Investment Agencies and **Funds took part from the Russian side.** • On **02-05 September 2021, Minister of Petroleum and Natural Gas, Shri Hardeep Puri participated in the 6th Eastern Economic Forum in Vladivostok**. During the visit he met the **Russian Energy Minister Shulginov and leadership of Russian oil and gas majors including Rosneft, Gazpromneft, Novatek, Sibur** to review the bilateral cooperation in the energy sector. ▪ He visited **Sakhalin site which has Indian investment.** • On **November 07-08 2022, EAM Jaishankar** visited **Moscow for consultations with Foreign Minister Lavrov and a meeting of the IRIGC-TEC. EAM** led a delegation of senior officials from the **Ministries of Agriculture, Petroleum and Natural gas, Ports, Finance, Chemicals and Fertilizers** as well as Commerce and Industry for substantive discussions to chart the **future course of action**, with the goal of realising the optimum potential of bilateral trade and economic relations – **a target of USD 30 billion by 2025** – to address the existing **trade deficit and market access issues in the interest of long term stability.** • On **25-29 December 2023, EAM Dr. S. Jaishankar visited Russia.** In **Moscow, EAM called on President Putin** and held discussions with **DPM Manturov, as well as the Foreign Minister Lavrov.**

	▪ **EAM had comprehensive exchange of views on bilateral cooperation in trade and economic, energy, defense, connectivity, cultural and people to people exchanges, and cooperation between regions of the two countries.** • On April 17-18, 2023, **DPM Denis Manturov visited India to co-chair the 24th session of the IRIGC-TEC.** ▪ During the meeting, both sides **reviewed issues of bilateral trade, financial, industrial and energy cooperation, including the nuclear power industry, agriculture, transportation, healthcare, education and culture.** • On **February 4, 2025, Russia's Minister of Energy Mr. Sergei Tsivilev** held a meeting with **India's Minister of Petroleum and Natural Gas**, Shri Hardeep Singh Puri in New Delhi and reviewed the **ongoing Russian-Indian cooperation** in the energy sector as well as discussed prospects for further collaboration. • On February 11-14, the **Russian delegation headed by First Deputy Minister of Energy Mr. Pavel Sorokin,** participated in the **India Energy Week 2025 held in New Delhi.** The delegation included key representatives of **Novatek, Gazprom Neft, Sberbank, H2 Invest, NovTek New Technologies among others. On the sidelines of the event**, Mr. Sorokin held a meeting with **Minister of Petroleum and Natural Gas Shri Hardeep Singh Puri** and discussed prospects for expanding **bilateral energy partnership.**

	• On **May 2, 2025, Ms. Olga Lyubimova, Russian Minister of Culture** visited India and took part in the **World Audio Visual & Entertainment Summit 2025 (WAVES 2025) held in Mumbai on May 1-4**. On the sidelines of the **WAVES summit, Ms. Olga Lyubimova** held a meeting with **Indian Minister of Information and Broadcasting, Shri Ashwini Vaishnaw** and discussed the **bilateral cooperation in cinematography**, as well as the establishment of the **Eurasian Academy of Cinematographic Arts and the Open Eurasian Film Award "Diamond Butterfly".** • On **18-21 June 2025, Shri Ashwini Vaishnaw**, **Minister of Railways; Information and Broadcasting and Electronics and Information**, visited Russia to participate in **SPIEF 2025, held in Saint Petersburg on 18-21 June 2025**. He delivered keynote speeches in the sessions focused on **AI and India-Russia Business Dialogue.** • On **August 20, EAM co-chaired the 26th Session of the IRIGC-TEC** with **First Deputy Prime Minister H.E. Mr. Denis Manturov** and discussed the whole gamut of **India-Russia economic cooperation. Both sides reaffirmed commitment on timely** achievement of the **revised bilateral trade target of USD 100 billion by 2030** by addressing tariff and **non-tariff trade barriers, removing bottlenecks in logistics, promoting connectivity, effecting payment mechanisms smoothly**, early conclusion of the **India-EAEU FTA, and regular interaction between the businesses of the two countries.**

Other significant visits	• From **3-7 June, a delegation of 35 Indian government** authorized R**ecruiting Agents (RAs) visited Moscow and St. Petersburg** for the first time, to explore **manpower cooperation and opportunities in Russia.** • During the visit, they held meetings with **government officials, industry associations and business chambers.**

5. What do India and Russia trade most?



6. Mention key aspects of India Russia Parliamentary Cooperation?

India-Russia Inter Parliamentary Commission:

- The **Inter-Parliamentary Commission, between the Lok Sabha and the Russian State Duma (lower house)**, has played a **key role in facilitating parliamentary cooperation.**
- It has met **five times since its inception (2000, 2003, 2015, 2017, 2018).**
- The **Commission is co-chaired by the Speaker of the Lok Sabha and the Chairperson of the State Duma.**
- The **5th India-Russia Inter Parliamentary Commission was held in India on 09 December 2018.**

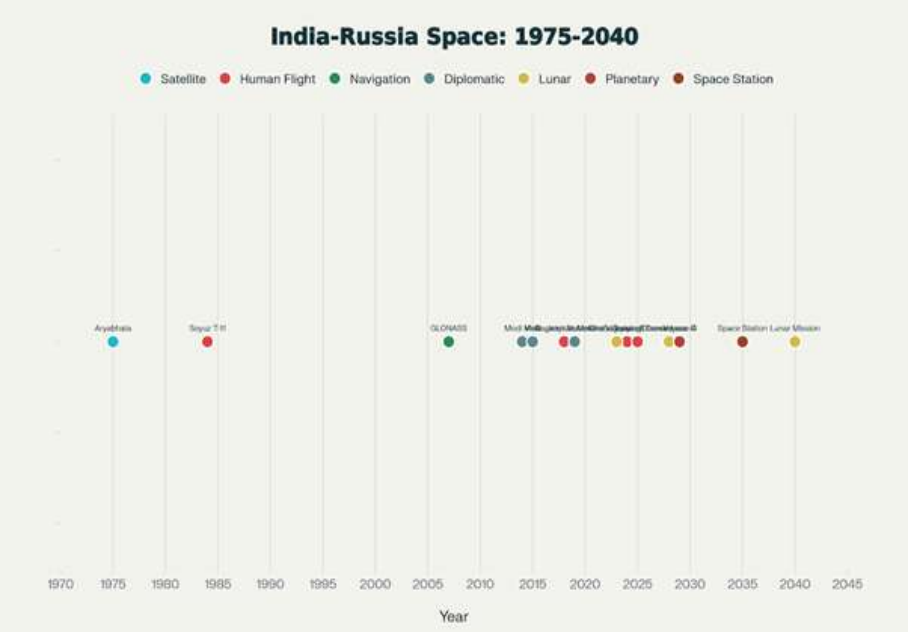
Inter Country delegation:

- **Chairman of the State Duma (Russia's lower house of Parliament) Mr. Vyacheslav Volodin** paid an official visit to India from **02-04 Feb 2025.**
  - During the visit, **Volodin called on President and Vice President and had bilateral meeting with the Lok Sabha Speaker.**
  - The **Russian delegation attended the then ongoing 2025 budget session of both Rajya Sabha and Lok Sabha.**
  - In **July 2024, Lok Sabha Speaker Shri Om Birla led the Indian delegation for the 10th BRICS Parliamentary Forum in Saint Petersburg** and also had bilateral meetings with **Chairman Volodin and Speaker of the Russian Federation Council (Upper House of Parliament) Ms. Valentina Matvienko.**

Cooperation during Operation Sindoor:

- In the context of **Pahalgam terror attack and India's Operation Sindoor**, an all-party delegation led by **Ms. KanimozhiKarunanidhi comprising 5 MPs and senior diplomat Ambassador Manjeev Puri visited Russia from 22-24 May 2025** to project India's united resolve and **zero-tolerance approach towards terrorism in all its forms and manifestations.**
- From **21-26 June 2025, Dr. Shashi Tharoor, MP Lok Sabha** who was on his personal visit held meetings with **Mr. Konstantin Kosachev (Deputy Chairman of Federal Council) and Mr. Leonid Slutsky (Chairman of State Duma Committee on International Affairs).**
- From **29-30 October, Indian parliamentary delegation including Hon'ble MPs Shri RajkumarChahar, Dr. C.N. Manjunath from Loksabha and Dr. V. Sivadasan from Rajya Sabha** participated in the meetings of the **Asian Parliamentary Assembly Standing Committee on Social and Cultural Affairs in Moscow.**

7. Mention key aspects in India Russia Science and Technology cooperation?

Aspects	Analysis
Space Cooperation	• **India-Russia space cooperation** has evolved into one of the **world's most significant partnerships, spanning five decades.** • In **1975, Russia (then the Soviet Union) launched India's first satellite, Aryabhata, aboard a Soviet Kosmos-3M rocket, kick-starting India's space program.** • This foundational achievement was followed by **Rakesh Sharma's historic spaceflight on Soyuz T-11 in 1984**, making him the first Indian citizen in **space aboard a Soviet spacecraft.** 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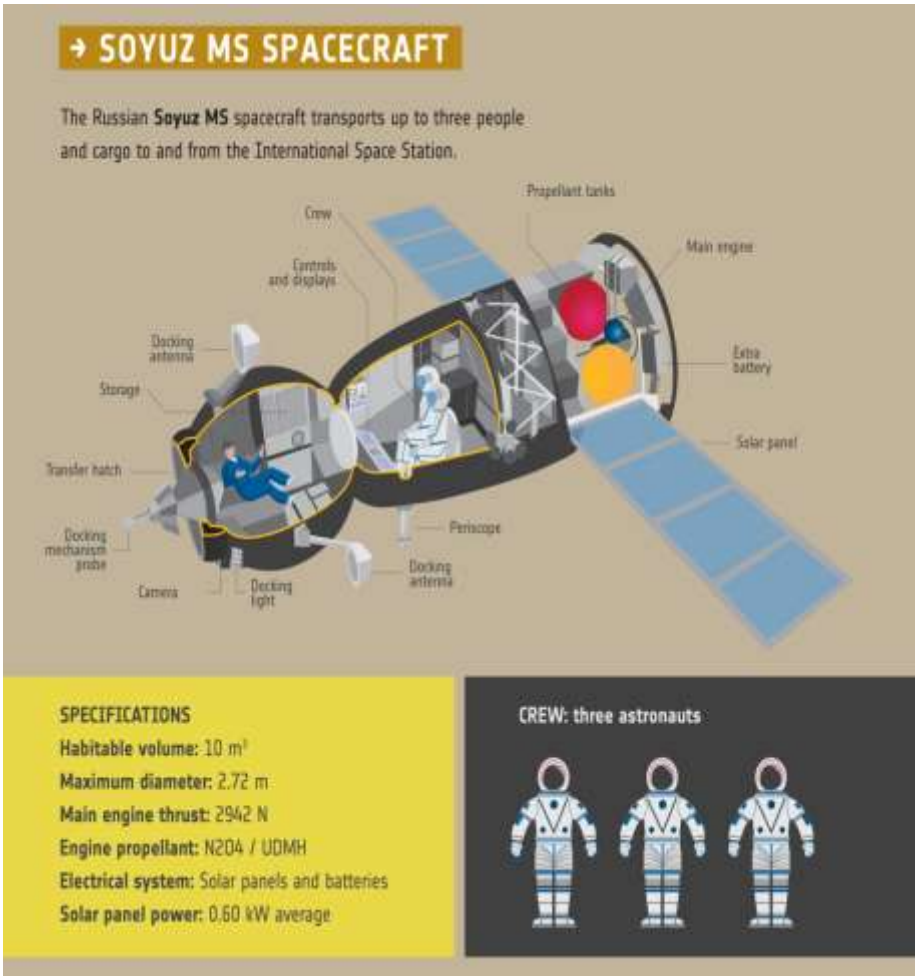
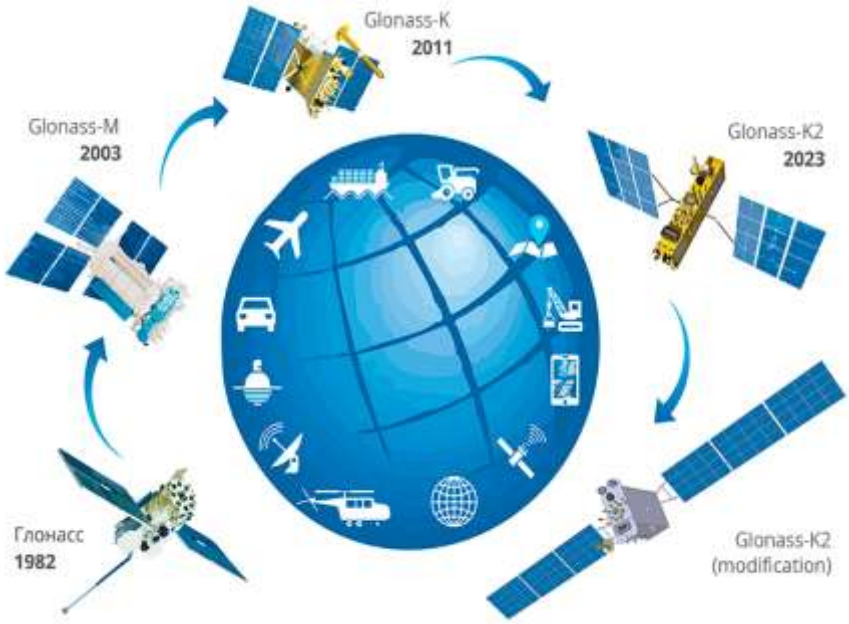

→ SOYUZ MS SPACECRAFT
The Russian Soyuz MS spacecraft transports up to three people and cargo to and from the International Space Station.
Propellant tanks
Crew
Main engine
Controls and displays
Docking antenna
Extra battery
Storage
Solar panel
Transfer hatch
Periscope
Docking mechanism probe
Docking antenna
Camera
Docking light
SPECIFICATIONS
Habitable volume: 10 m³
Maximum diameter: 2.72 m
Main engine thrust: 2942 N
Engine propellant: N2O4 / UDMH
Electrical system: Solar panels and batteries
Solar panel power: 0.60 kW average
CREW: three astronauts

- The **Gaganyaan mission represents the apex of India-Russia space cooperation.**
- Announced by **Prime Minister Modi in 2018, this $1.4 billion (Rs 9,023 crore)** program aims to send a **three-member Indian crew** into a **400-km Low-Earth-Orbit for a 3-7 day mission.**

- It could make **India only the fourth country after the USA, Russia, and China** to achieve independent **manned space capability.**
- Russia is **providing critical support across multiple dimensions:**
  - **Astronaut Training: Four Indian astronauts** completed advanced training at **Russia's Gagarin Cosmonaut Training Centre in 2024, with more under preparation.**
  - **Spacesuits and Life Support: Russia supplies** custom **Sokol spacesuits, life-support systems, and emergency safety equipment.**

	▪ **Technical Systems: Russian expertise in radiation shielding, crew modules, rendezvous and docking systems, and flight suits enhances the spacecraft's capabilities** ▪ **Medical and Flight Training: Glavkosmos, a ROSCOSMOS subsidiary**, provides consulting **support, medical examinations, and comprehensive space flight training.**
GLONASS-NavIC Integration	• A **cornerstone of bilateral space cooperation** is the mutual deployment of ground stations for **satellite navigation systems.**  • Following an agreement signed in **October 2016, Russia established a ground base station** in **Bengaluru** to receive communications signals from its **GLONASS (Global Navigation Satellite System)**, while ISRO set up India's NavIC (now called **Indian Regional Navigation Satellite System) ground stations in Russia.**

Lunar/Planetary Exploration	• **Lunar Missions: Chandrayaan-4, planned for 2028**, will involve sample return from the Moon with **Russian technical expertise in propulsion and landing systems**.  ▪ The **Luna 27 joint mission combines India's rover technology with Russia's proven lander capabilities.** ▪ Both nations have demonstrated their **independent capabilities, India successfully landed Chandrayaan-3** on the **lunar south pole in 2023**, while **Russia's Luna-25 made an earlier approach (though it ultimately failed).** • **Planetary Exploration**: Russia is developing the **Venera-D Venus mission (targeted for 2029) with an orbiter and lander to study Venus's atmosphere and surface**, leveraging **Russian expertise** as the world leader in Venus exploration.

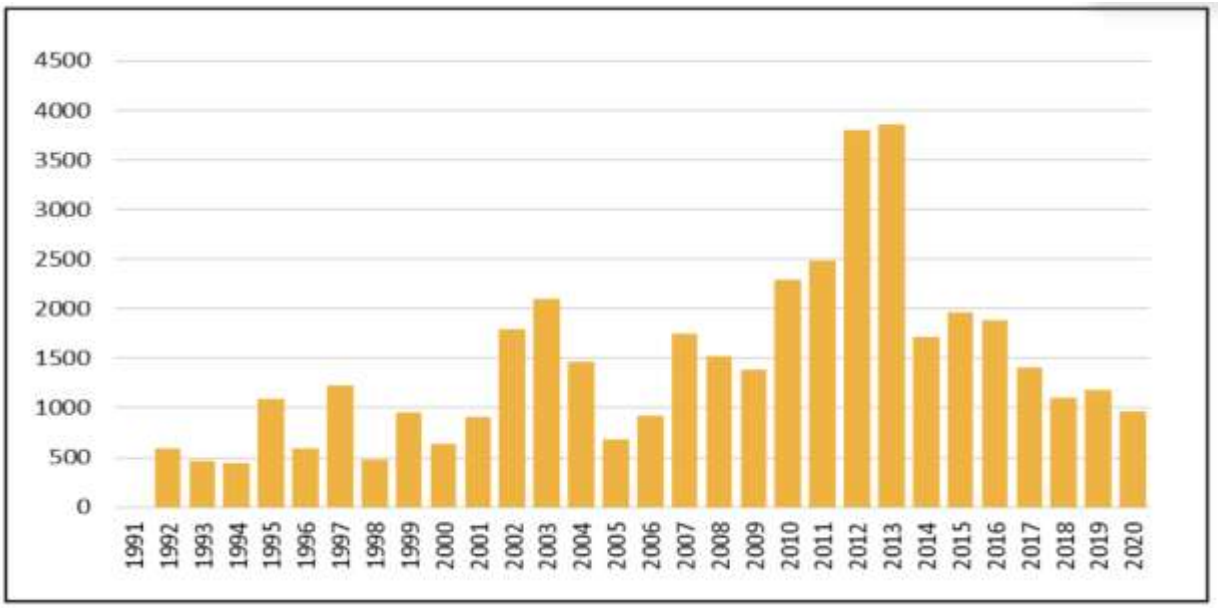
	▪ India is **exploring participation in payload development and research collaboration.** • A Mars mission is **being planned with Russia contributing advanced propulsion technologies.** • Additionally, both nations are **exploring opportunities for joint lunar bases and deep-space missions** as part of their extended cooperation framework.
Launch Vehicle Tech, Cryogenic Engines	• **Russia has provided critical technology for India's launch vehicle development.** • Seven **cryogenic functional units** and ground demonstrator units supplied by Russia to ISRO were used for the **GSLV MK-I and became seeds for India's development of the GSLV MK-II and III's home-grown cryogenic stage.** • Currently, both nations are developing **semi-cryogenic rocket engines** with scope for collaboration in producing and **utilizing these engines for different applications.** • India and Russia have agreed to explore prospects of **"mutually beneficial cooperation in rocket engine development, production and use".**
Space Station	• India has announced plans to establish the **Bharatiya Antariksh Station (Indian Space Station) by 2035**, to enable a permanent human presence and research in low earth orbit.

	 • **Russia's Ambassador Alipov commended this goal as a "new milestone" and pledged Russia's encouragement for the project.** • The **two nations are also working together within BRICS** on broader space initiatives, including a **remote satellite constellation project and efforts** to prevent an arms race in outer space. • Both countries **maintain in-depth dialogue on space security and have been collaborating on Russia's initiative for non-placement of weapons in outer space.**
Multi-stakeholder bases and scientific cooperation	• Both countries have adopted **multi-stakeholder bases and scientific cooperation** is facilitated through many agencies. • While from the Indian side, **Department of Science & Technology (DST), Ministry of Earth Sciences (MOES), Council of Scientific**

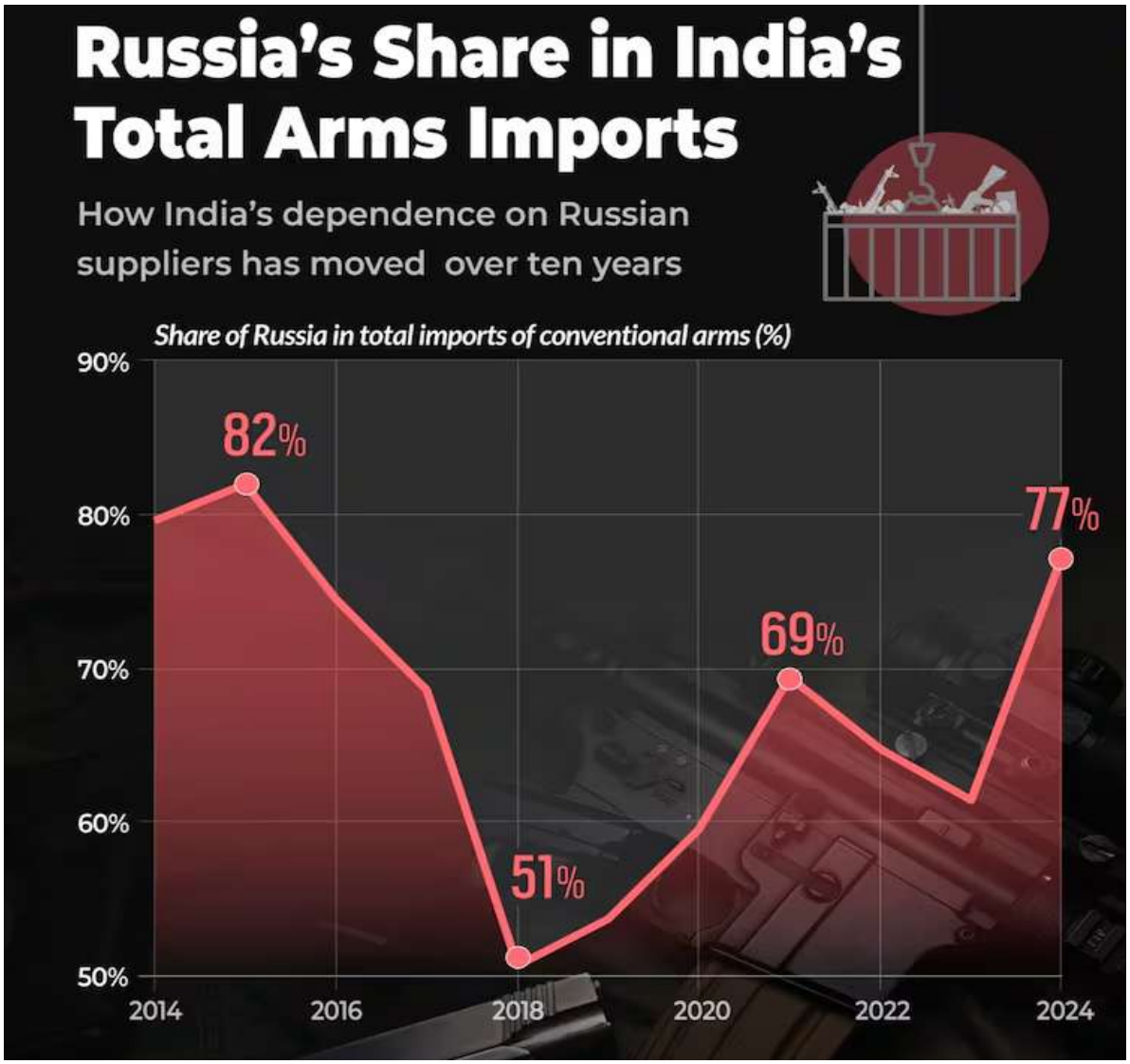
	& Industrial Research (CSIR), Department of Biotechnology (DBT), Ministry of Electronics & Information Technologies (MEITY), Indian Council of Medical Research (ICMR), Indian Council of Agricultural Research (ICAR) and Indian National Science Academy (INSA) are the primary agencies in civilian science & technology cooperation. • On the **Russian side, Ministry of Science and Higher Education (MSHE), Russian Foundation for Basic Research (RFBR), Russian Science Foundation (RSF), Skolkovo Foundation (SF), Russian Academy of Sciences (RAS), Russian Federal Foundation for Small Innovative Enterprises (FASIE) and Russian Ministry of Economy Development (MED) are involved in making this partnership stronger.**
Basic Science Cooperation	• Both countries have been **supporting joint R&D in Basic Sciences.** • Around **150 joint projects are presently under implementation in Mathematics & Computations, Physics & Astrophysics, Chemistry, Earth Science, Biological & Medical Sciences, Engineering Sciences and Information & Communication Technologies.** • **Support and training from Russia** has been a key factor in the success of the vaccine production facility of **Bharat Immunologicals and Biologicals Corporation Ltd at Bulandshahr in Uttar Pradesh.** • This resulted in the **development of oral polio vaccine by several companies.**

	• This eventually led to launch of **Pulse Polio program and thankfully India is now, one of polio free countries.** • **Joint collaboration in Materials science** has led to establishment of **International Advanced Centre for Powder Metallurgy and New Materials (ARCI) set up at Hyderabad.** • This was the **first Centre of Excellence established through the Indo-Russian cooperation 25 years ago.**
Applied Research	• A **new corporate level collaboration linkage for Technology Promotion with Skolkovo Foundation** and other **leading technology parks in Russia is also being promoted for Tech SME and Startup exchanges**. • This could be an **effective mechanisms for promoting two way transfer of technologies.**

8. Mention key aspects of India Russia Defence Cooperation?



- **Defence is one of the most important parts** of the strong friendship and strategic partnership between **India and Russia.** Both countries follow a **special 10-year agreement** that guides all their **military and defence technology cooperation.**
- The **military-technical cooperation agreement for 2021–2031** inked on **6 December 2021 in New Delhi**, focuses on **joint research, development, production, and after-sales support of weapons and military equipment.**

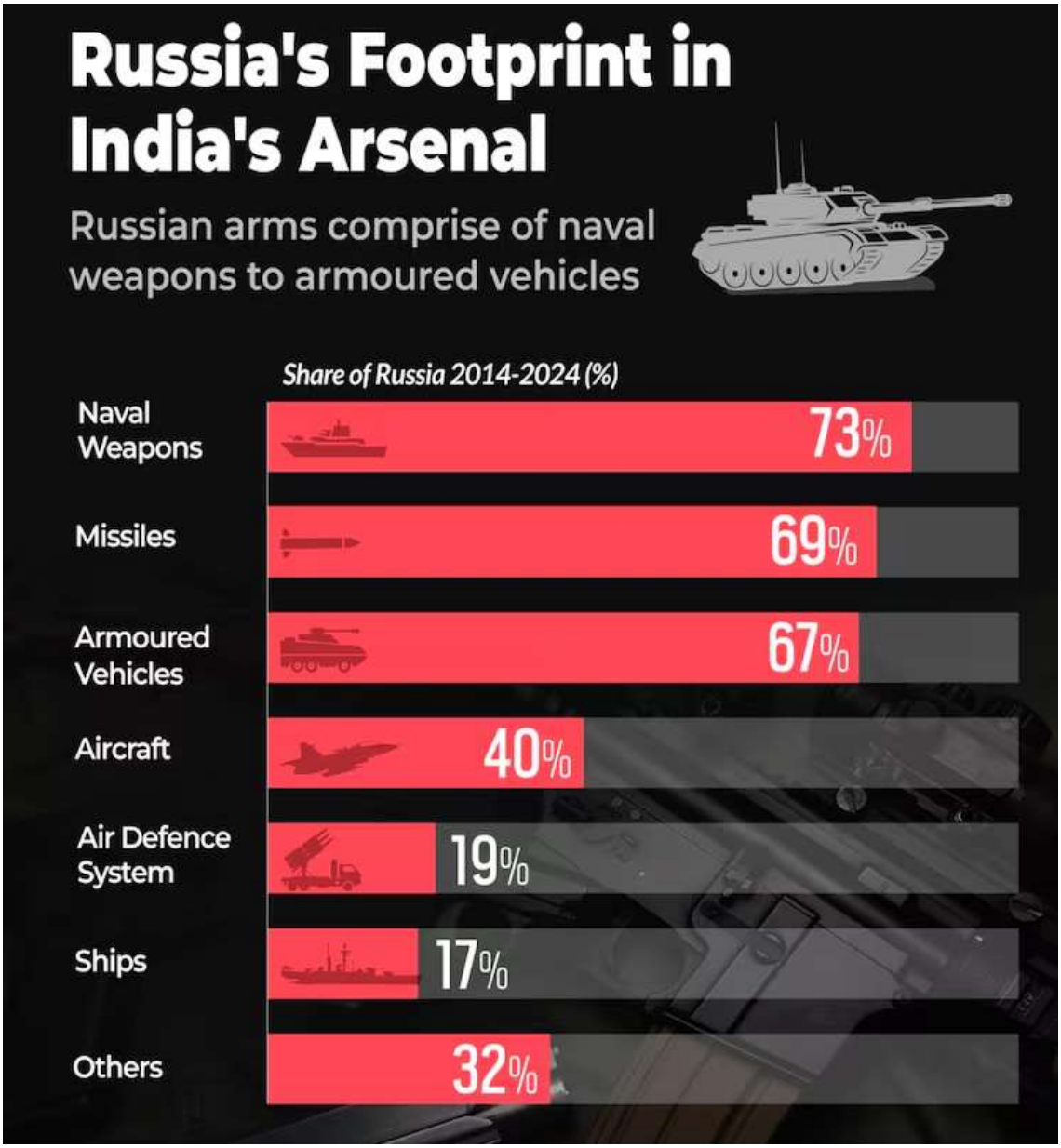


- The **India-Russia Inter-Governmental Commission on Military & Military Technical Cooperation (IRIGC-M&MTC)** is co-chaired by **India's Defence Minister and Russia's Defence Minister.**

- The **5th Meeting of IRIGC-M&MTC took place in New Delhi on October 28-29 2025.**
- The **14th edition of India-Russia joint training exercise INDRA-2025 was held in Bikaner, Rajasthan from 6-15 October, 2025** with the participation of more than **250 servicemen from each side.**
- On **10-16 September 2025, a contingent of 65 Indian Armed Forces personnel from the Army, Air Force, and Navy**, took part in **Zapad-2025 military exercise at Nizhny Novgorod in Russia.**
- On 28 Mar-02 Apr 2025, the **bilateral Naval Exercise INDRA 2025 between Indian and Russian** navies was conducted in two phases - **Harbour phase at Chennai and Sea phase in Bay of Bengal.**
- On **10-16 September 2025, a contingent of 65 Indian Armed Forces personnel from the Army, Air Force, and Navy,** took part in **Zapad-2025 military exercise** at **Nizhny Novgorod in Russia.**

- **On 29 October 2025**, Indian delegation led by **Sanjeev Kumar, Secretary (Defence Production) participated in the 23rd Working Group Meeting of the India-Russia Inter-Governmental Commission on Military Technical Cooperation and Defence Industry in Moscow.**

The defense cooperation evolved beyond a mere buyer-seller dynamic to include joint research, development, and co-production of advanced systems.



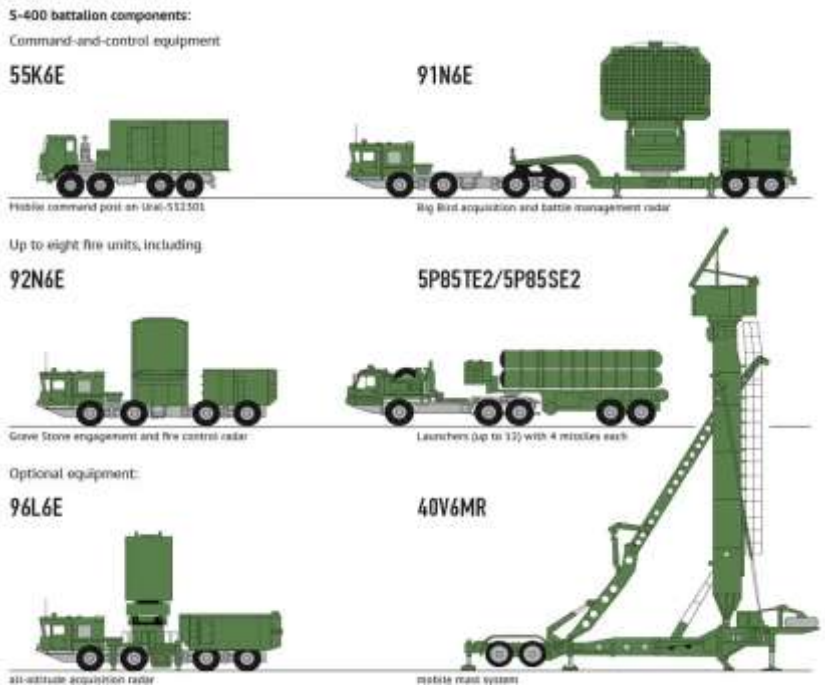
Following are some of the weapon systems:

Weapon Systems	Description
BrahMos Missile	• **BrahMos Cruise Missile system** jointly developed by I**ndia's DRDO and Russia's NPO Mashinostroyeniya (NPOM)**, which remains a **flagship of India–Russia military-technical collaboration** in missile technology.

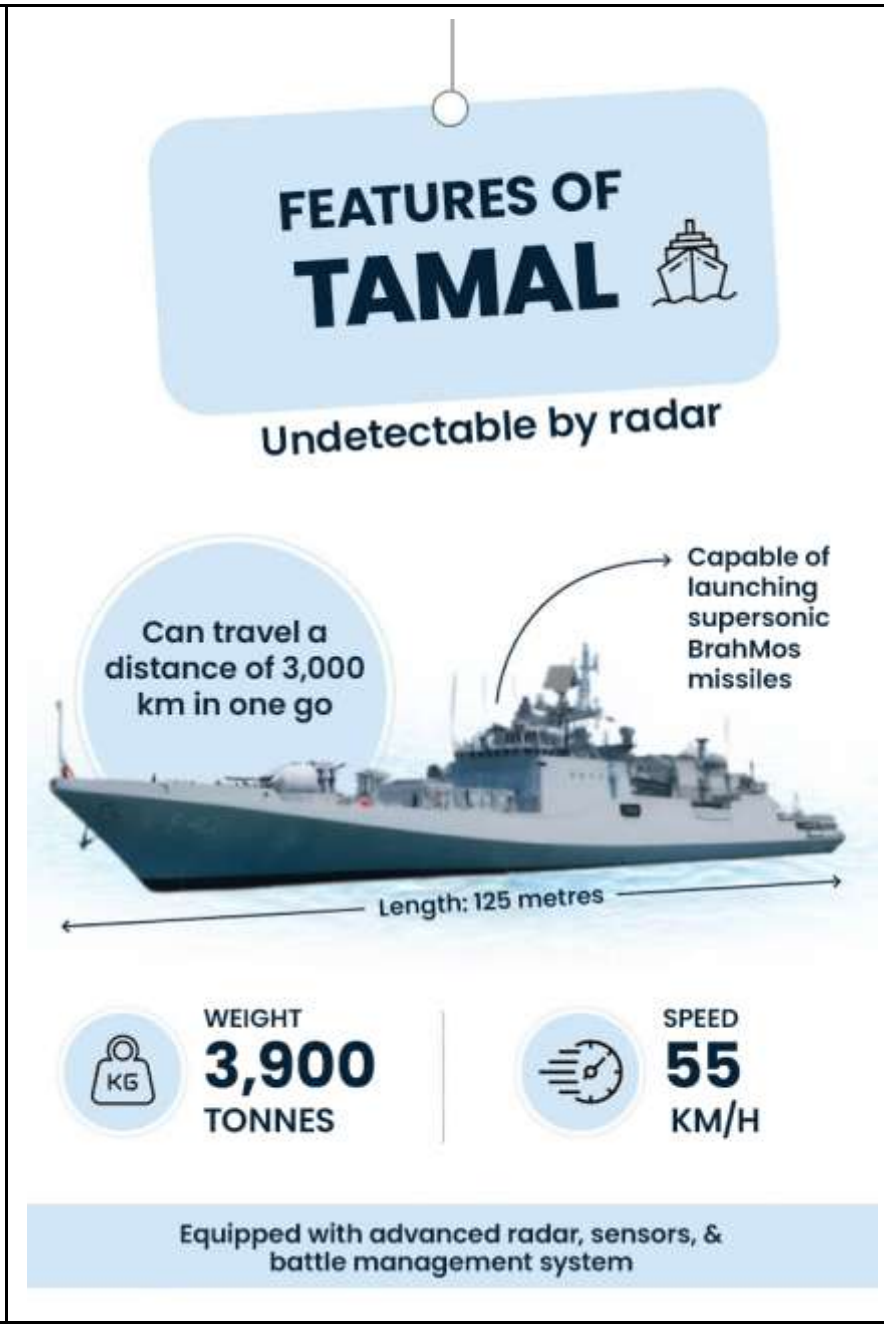

SPEED UNMATCHED
POWER UNSTOPPABLE
THIS IS BRAHMOS
Strike range
Up to 290-400
kilometers
Speed 2.8 Mach
(about three times
the speed of sound) i.e. about
3,700-4,000 km/hour
Weight
1260 kg
Armour capacity
Explosive up to
200-300 kg
Strength Ability to
hit targets in water,
land and damp
BRAHMOS
BRAHMOS


BRAHMOS
BRAHMOS
BRAHMOS
BrahMos missile's 800 km range
puts entire Pakistan within India's
strike capability

Sukhoi Su-30MKI	• **Licensed production** of the multi-role fighter aircraft by **Hindustan Aeronautics Limited (HAL) in India.**  
T-90 Tanks	• Licensed production of the **T-90S Bhishma main battle tanks in India.** 

S-400 Triumf	• Procurement of the advanced long-range **surface-to-air missile defense system (SAM) by India.** 
INS Vikramaditya	• **Refurbishment and transfer of the former** Russian aircraft carrier **Admiral Gorshkov to the Indian Navy.**  • A majority of India's conventional and **nuclear-powered submarines are of Russian origin.**

AK-203 Assault Rifles	• Production by the **Indo-Russia Rifles Private Limited (IRRPL)** joint venture in **Korwa, India, under the "Make in India" initiative.** 
Frigates	• **INS Tamal (F71)** is a **multi-role stealth frigate** of the **Indian Navy,** commissioned on **July 1, 2025.** • Built in **Russia**, it is the last warship to be **imported by the Indian Navy** and is **part of the Talwar-class frigates**. • The vessel is designed for **all-domain warfare** and is equipped with **advanced weaponry,** including the **BrahMos supersonic cruise missile system.**



9. What is the S-400 missile system that played crucial role in Operation Sindoor?

- The **Indian Air Force** used its **S-400 air defence systems** to stop an aerial attack launched by Pakistan.
- The Pakistani attack, aimed at military targets in **north and west India**, was in response to **India's Operation Sindoor.**

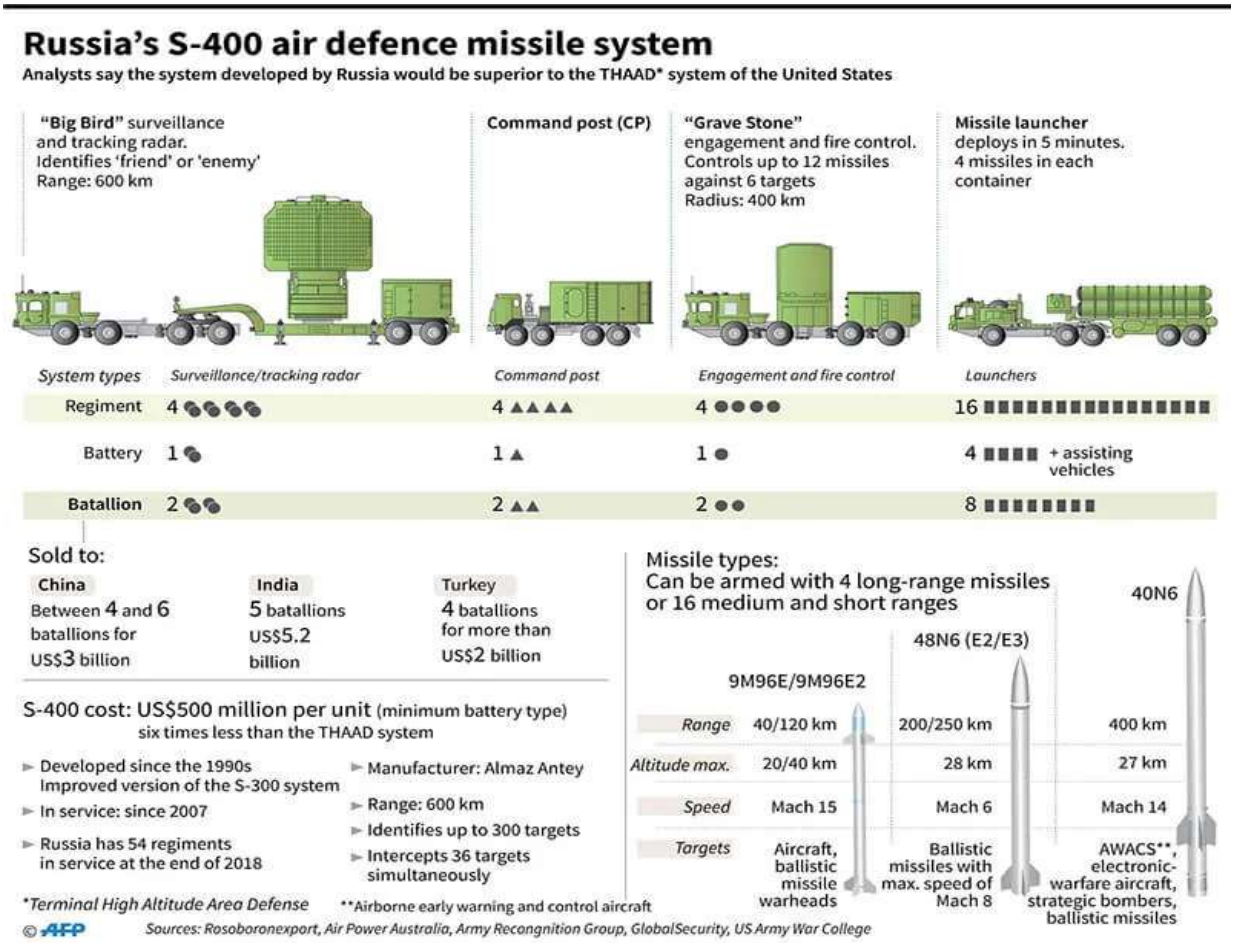
- According to defence officials, Pakistan used drones and missiles to target fifteen locations including **Awantipora, Srinagar, Jammu, Pathankot, Amritsar, Ludhiana, and Bhuj.**
- The Indian Air Force responded by deploying its **S-400 systems**, which intercepted and neutralised the incoming threats.

Features	About
Sudarshan Chakra	• The **S-400 system**, called **"Sudarshan Chakra"** by the Indian military, is made in Russia and can track targets up to **600 kilometres** and intercept them at distances of up to **400 kilometres.**
Five S-400 squadrons	• India has procured a total of five squadrons of the **Russian-made S-400 Triumf air defence missile system**, known in Indian service as **"Sudarshan Chakra."** • Of these, **three squadrons** are already operational, while the remaining **two** are expected to be **delivered by 2026.**
Inspiration from Hindu Mythology	• The name draws inspiration from Hindu mythology, where the **Sudarshan Chakra is a powerful** spinning weapon used by Lord Vishnu. • Similarly, the **S-400 system is seen as a powerful tool** in India's defence arsenal, capable of swiftly detecting and neutralising aerial threats.
Developed by	• The system is manufactured by **Russia** and is among the **most advanced air defence systems globally.**
Components	• It consists of **three main components: missile launchers, a powerful radar, and a command centre.** • It is capable of **targeting aircraft, cruise missiles, and even high-speed intermediate-range ballistic missiles.**

Capabilities	• Track targets up to **600 km away.** • **Intercept aircraft, drones, and missiles** at ranges up to **400 km** • The **S-400** system is capable of engaging **multiple targets** simultaneously, including **aircraft, cruise missiles, and ballistic missiles,** at varying ranges and altitudes. • India has so far deployed four squadrons of the **S-400 system** to cover key regions including **Punjab, Jammu and Kashmir, Rajasthan, and Gujarat.** • The **S-400 can spot and shoot down aerial threats** from far away, making **India's air defence** much stronger and improving its national security. 

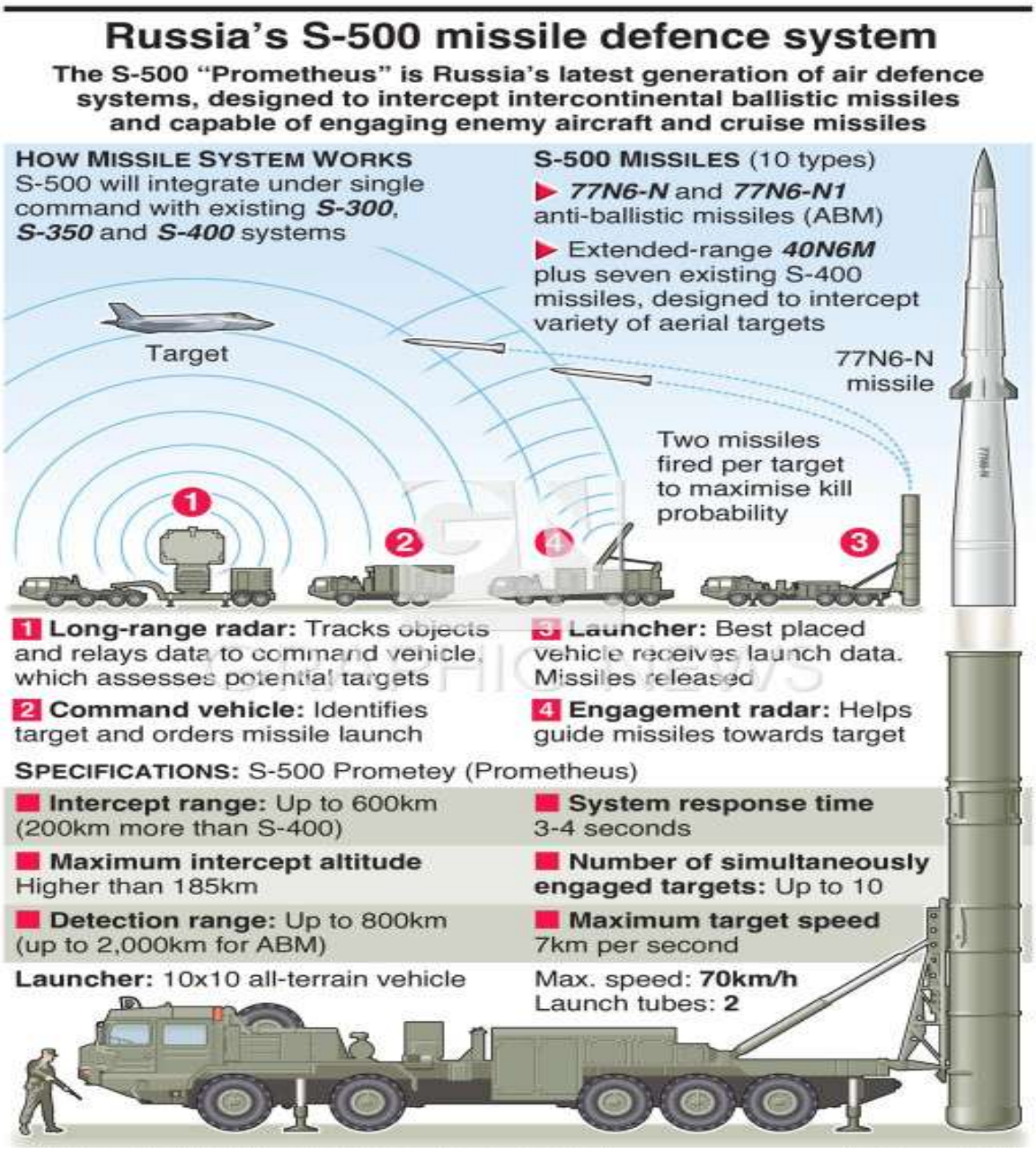

DEADLY MISSILE SHIELD
DEAL | 5 squadrons of S-400 Triumf anti-aircraft\anti-missile systems from Russia
COST | ₹39,000cr
CHARACTERISTICS
➤ S-400 can destroy hostile aircraft, stealth fighters, missiles & drones at 400-km range
➤ Radars (primary acquisition one has 600-km range) can track hundreds of targets simultaneously
➤ 4 kinds of missiles to intercept targets at different ranges
➤ Can intercept even ballistic missiles with velocity of 4,800 meters per second
➤ Russia boasts S-400 can even "radar lock & shoot down" 5th-Gen stealth fighters like American F-35 jets
PLAN:
➤ Induct 1st S-400 squadron in 2 years after contract inked. All 5 in 5 years
➤ IAF will integrate S-400 with its IACCS (integrated air command and control system) network of sensors & weapons
CHINA: inducting six S-400 batteries under a $3 billion deal with Russia in 2014


S-400
Russian air defense complex
S-400 is a Russian air defense system of long and medium range.
Each self-propelled rocket launcher carries 4 transport-launch containers with anti-aircraft missiles. The stated range of the latest missiles is up to 380 km.
S-400 missiles are designed to combat long-range airborne warning and control systems, strategic bombers, ballistic targets, etc. The S-400 missile travels at up to 4,000 km/h.
Visually, the S-400 is similar to its predecessor S-300. The Triumph system inherited the radar station, launchers, and means of target detection.
The radar complex 92N6A: a panoramic radar with protection against interference, which is mounted on a Belarusian special wheeled chassis MZKT-7930.
In addition, the developer claims that the S-400 complex can simultaneously work with 80 air targets, launching 2 missiles at each. One complex can comprise of up to 40 launchers in total.
The 92N6A radar is the eyes of Triumph. It has the ability to simultaneously track up to 100 targets and accurately track up to 6 targets.



10. What is S 500 missile defence system?

- The **S-500,** manufactured by **Russia's Almaz-Antey**, is a **more advanced air defence** shield that **can reach much higher altitudes** and has a **longer range** than the **S-400.**
- It is engineered to specifically **neutralise the most demanding 21st-century threats** - advanced ballistic missiles, hypersonic glide vehicles, as well as hypersonic cruise missiles.
- However, what sets it completely apart is its ability **to engage certain low-orbit satellites or space-launched threats.**



- In terms of operational capabilities, while the **S-400 can shoot down targets up to 400 km away,** the **S-500 can reach up to 600 km**. It can simultaneously counter **up to 10 ballistic supersonic terminal ICBM** warheads flying at jet speed.
- The real upgrade is in the altitude reach.
- The **S-400 can engage targets at an altitude of 30 km**.
- The **S-500 can reach 200 km** - almost at the edge of space where satellites orbit.
- This makes it capable of protecting India from space-based threats as well. In perspective, **passenger aircraft fly at an altitude of just 10-12 km.**

11. How is S-500 different from S-400?

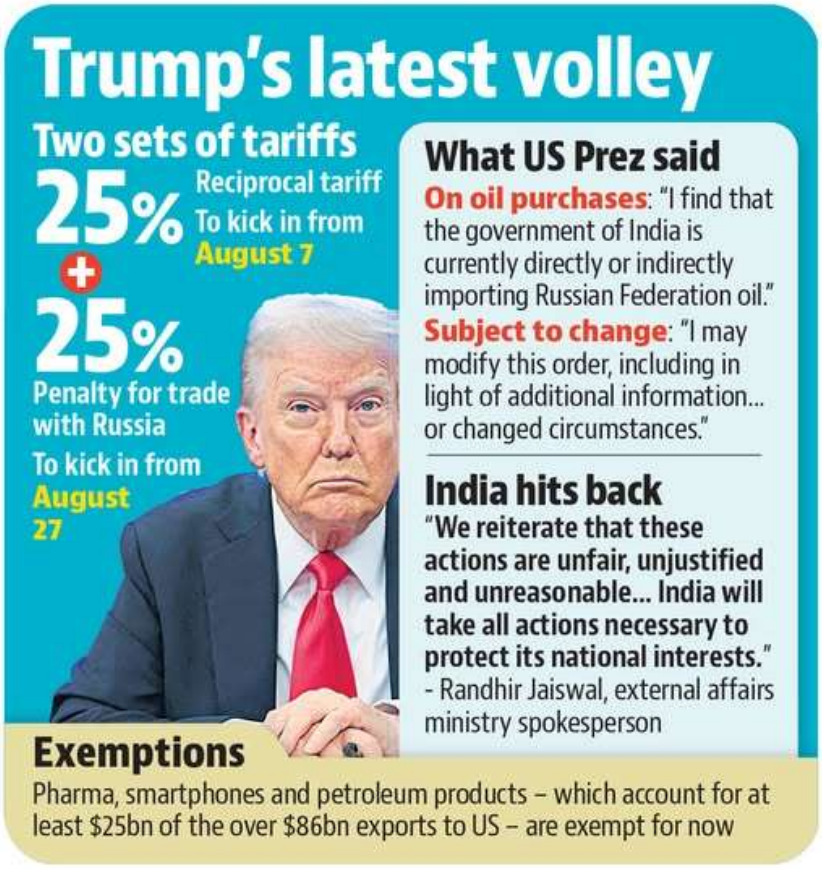
Feature	**S-400**	**S-500**
Range and coverage	• The **S-400** is designed to **engage targets at distances up to 400 kilometres,** which makes it one of the **most formidable air defence systems** currently in service. • It is **capable of targeting** a **wide range of aerial threats** from fighter jets to ballistic missiles.	• The **S-500 takes this capability a step further**, with an **operational range of up to 600 kilometers.** • It not only extends its reach against traditional threats but also provides **enhanced anti-ballistic missile capabilities** which enables it to **engage more advanced** and faster targets.
Target tracking and	• The **S-400 is capable of tracking up to 80 targets**	• One of the most significant upgrades in this system is its **ability**

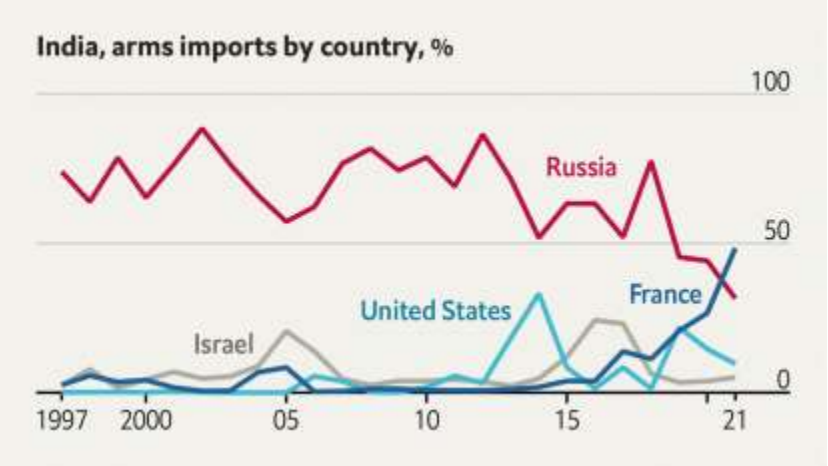
engagement	**simultaneously** and can engage **six different types of targets at once.** • It is known for its **high accuracy in intercepting aircraft, cruise missiles**, and other flying objec	**to track and engage up to 100 targets simultaneously.** • Moreover, it can **counter high-speed intercontinental ballistic missiles (ICBMs)** and **hypersonic weapons,** which makes it a more advanced system capable of dealing with emerging threats.
Missile types and interception	• The system uses **four types of missiles** (**40N6, 48N6, 9M96E, and 9M96E2**), offering flexibility in **countering various threats that include tactical ballistic missiles, aircraft, and drones.** • The **S-400 can intercept targets** flying at speeds of up to Mach 14.	• He **S-500 can use more advanced missile t**ypes, including the **40N6E, which is capable of intercepting targets traveling at speeds up to Mach 20.** • This missile can also **counter missiles at much higher altitudes than the S-400,** such as **satellites and objects in low Earth orbit (LEO),** a capability that the S-400 does not have.
Anti-hypersonic and space capabilities	• While the **S-400 is capable of dealing with ballistic and cruise missiles,** it is	• The S-500's key advantage over the S-400 is its **anti-hypersonic capabilities.**

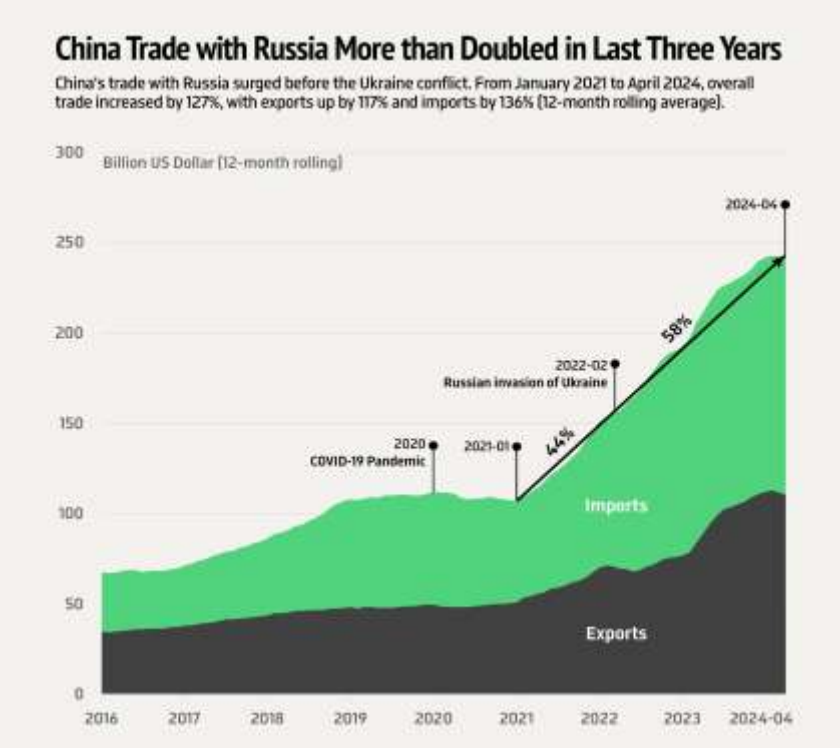
	not specifically designed to **combat hypersonic weapons** or threats from space.	• It is designed to **intercept and destroy hypersonic missiles, which travel at speeds exceeding Mach 5.** • Furthermore, the **S-500 can engage objects in space, such as satellites, which gives it a str**ategic advantage in countering threats from advanced missile systems and space-based assets.
Deployment and integration	• The **S-400** has **already** been deployed in several countries, **including India, China, and Turkey.** • **It is a proven system** and well **integrated into existing defense infrastructures.**	• The **S-500 is still in the final stages of *developmen*t** and is expected to be fully operational in the next few years. • Once operational, **it will enhance the air defense systems of Russia and its allies,** potentially replacing or augmenting the S-400 in certain regions.
Cost and availability	• The **S-400 is more affordable than the S-500** which makes it an **attractive option for countries** looking to enhance their air	• The **S-500 is expected to be more expensive** due to its advanced capabilities, which **might limit its widespread deployment initially.**

	defence capabilities at a lower cost. • It is **already in service** and has a **track record of reliability.**	• However, its **ability to defend against future threats,** particularly hy**personic weapons** and space-based systems, makes it an investment for the future.

12. What are the challenges in India- Russia relation?

Challenges	Description
US Tariff	• The **primary immediate reason** for an additional **25% "penalty" tariff was India's** decision to continue **importing discounted crude oil from Russia**, which the U.S. viewed as **financially supporting Russia's war in Ukraine.** 
Delay in Defense Equipment	• The **Russia-Ukraine war** has caused **delays in the delivery of crucial defense equipment** and spare parts, such as the **S-400 air defense system,** affecting **India's operational readiness** and raising concerns in its defense circles.

	• India is **diversifying its defense imports** to include countries like **Israel, France, and the U.S.** 
Economic and financial challenges	• **India has a massive trade deficit,** importing approximately **($63.84) billion from Russia in FY 2024-25** while **exporting only ($4.88) billion.** 

Growing Russia's dependence on China	• **Russia's growing alignment with China**, India's regional rival, has raised concerns in India. • **China has become Russia's largest trading partner**, with bilateral trade reaching a record **$245 billion in 2024.** • The trade dynamic is imbalanced: **Russia primarily exports raw materials and energy at discounted prices,** while **China exports high-value manufactured goods, technology, and consumer products.** 
Ukraine conflict	• **India's neutral stance** on the **Ukraine war** has been **criticized by Western allies,** while **Russia expects stronger support from India.** • The conflict has also disrupted global supply chains, affecting bilateral trade.

13. What is the relevance of the topic for UPSC CSE?

- **For Prelims :** The Indo-Soviet Friendship Treaty of 1971, Declaration on the India-Russia Strategic Partnership, Special and Privileged Strategic Partnership, Kudankulam Nuclear Power Plant (KKNPP), Agreement on the Programme for Military-Technical Cooperation, MiG-21, Su-30, Ukraine Crisis.
- **For Mains :** Strategic Significance of India- Russia Relations, Key Issues and Way Forward.

Some previous years prelims questions.

Q1. Consider the following: (2022)

1. Asian Infrastructure Investment Bank
2. Missile Technology Control Regime
3. Shanghai Cooperation Organisation

India is a member of which of the above?

(a) 1 and 2 only
(b) 3 only
(c) 2 and 3 only
(d) 1, 2 and 3

Ans: (d)

Q2. Recently, India signed a deal known as 'Action Plan for Prioritization and Implementation of Cooperation Areas in the Nuclear Field' with which of the following countries? (2019)

(a) Japan
(b) Russia
(c) The United Kingdom
(d) The United States of America

Ans: (b)

Some previous years mains questions.

Q1. Critically examine the aims and objectives of SCO. What importance does it hold for India? (2021-10 Marks)

Q2. What is the significance of Indo-US deals over Indo-Russian defence deals? Discuss with reference to stability in the Indo-Pacific region. (2020- 15 Marks)

Some questions from this year and previous years interview transcripts.

Board Lt Gen Raj Shukla Sir:

- Tell me about present India Russia relationship.
- What is the role of Strategic Autonomy?
- What happened after 1962 debacle didn't we abandon non-alignment?

Board Sanjay Verma Sir:

- What lessens would you draw from Russia - Ukraine conflict?

Board BB Swain Sir:

- What is Just in time inventory?

- Why after the Russia Ukraine war have business units shifted away from Just in Time inventory model?

Board BB Swain Sir:

- What are the qualities that a nation should have to broker peace between country like ukraine and russia?

Board Suman Sharma Mam:

- Currently, wars like the Russia Ukraine war is going on, so do you think that another nuclear arms race is into play?

Board Dinesh Dasa sir:

- Will trump be able to create wedge between russia and China?
- Why trump reapproaching Russia?

Some questions for QUIZ.

Q1. Consider the following Countries:

1. Uzbekistan
2. India
3. SriLanka
4. China
5. Turkmenistan

How many of the above countries are part of the SCO grouping?

(a) Only two
(b) Only three
(c) Only four
(d) All five

Ans: (b)

Some questions for POLL.

Q1. Do you think India–Russia defence ties are still crucial for India's national security?

(a) YES

(b) NO
(c) Can't say.

Q2. Should India continue purchasing major defence equipment from Russia despite diversification?
(a) YES
(b) NO
(c) Can't say.

Q3. Is Russia still India's most reliable partner for military technology transfers?
(a) YES
(b) NO
(c) Can't say.

Q4. Is the India–Russia partnership important for India's long-term energy security?
(a) YES
(b) NO
(c) Can't say.

Q5. Is Russia a significant market opportunity for Indian pharmaceuticals and agriculture exports?
(a) YES
(b) NO
(c) Can't say.

Q6. Should India prioritise its partnership with the US over Russia?
(a) YES
(b) NO
(c) Can't say.

Q7. Is Russia an important balancing factor for India against China's influence?

(a) YES
(b) NO
(c) Can't say.

Q8. Is people-to-people contact between India and Russia still limited and needs improvement?

(a) YES
(b) NO
(c) Can't say.

■■■■