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INDIA'S AMBITIOUS SPACE VISION

In a recent address, ISRO Chairman S. Somanath outlined **India's goals to increase its share in the global space economy**, enhance indigenous technological capabilities, and advance a series of high-impact space missions.

India's Space Economy:

- India currently **contributes about 2% to the global space economy**, with a goal to increase this share to at least 10% over the next decade.
- However, achieving this milestone **requires concerted efforts from both ISRO and other stakeholders**, including private enterprises and start-ups, within India's evolving space ecosystem.

- **Participation of the private sector:**
  - India's space sector has seen a surge of activity with **recent policy reforms and the opening up of the industry to private enterprises.**
  - The growing enthusiasm among young entrepreneurs and companies, both large and small, has led to a collaborative environment where private players are taking on roles previously managed solely by ISRO.

Key Upcoming Missions of the ISRO:

- **Gaganyaan mission:** India's first manned space mission, Gaganyaan, is scheduled for **2026**, marking a significant milestone in India's human spaceflight program.
- **Chandrayaan-4 Sample Return mission:** Planned for **2028**, Chandrayaan-4 will focus on returning lunar samples, a step forward in understanding the Moon's geology and resources.
- **LUPEX/Chandrayaan-5 mission:**
  - A collaborative project with **Japan's JAXA**, Chandrayaan-5 (formerly Lunar Polar Exploration/ LUPEX) will involve a heavier mission with a 350-kg rover provided by Japan, and the lander by India.

- o Expected after 2028, this mission aims to advance lunar science with the eventual goal of a human moon mission by 2040.

- **NASA-ISRO Synthetic Aperture Radar (NISAR) mission:**
  - o The **India-US** joint NISAR mission, which has faced delays, is scheduled for launch in 2025.
  - o This satellite mission aims to monitor natural resources and hazards using radar imaging.

Way Ahead for India's Space Vision:

- **Reducing dependence on imports:**
  - o Over the past decade, India has significantly reduced its dependence on imported space technologies.
  - o However, **many critical components still come from abroad**, underscoring the need to further develop domestic manufacturing capabilities for advanced research and technologies.

- **Expanding R&D and manufacturing capabilities:**
  - o ISRO is focused on promoting the indigenisation of research, development, and manufacturing, ensuring that critical items for the space sector can be built within the country.
  - o This shift is crucial to meeting the demands of upcoming missions and **achieving self-sufficiency** in space technology.

Conclusion:

- With a focus on indigenous technology, private sector engagement, and ambitious missions, India is well on its way to realising its vision of
  - o Contributing 10% to the global space economy and
  - o **Establishing a robust foundation for long-term space exploration and scientific advancement.**

GOVT. ISSUES ADVISORY TO CURB HOAX BOMB THREATS ON SOCIAL MEDIA

Recent bomb threats

- **Widespread threats disrupted Airlines**
    - Over the past two weeks, Indian carriers, including Tata group airlines (Air India, Vistara, and Air India Express), Indigo, Alliance Air, and Star Air, have faced a series of hoax threats.
    - These incidents have led to emergency measures, flight rerouting, and military fighter jet intercepts, particularly in international airspace when emergency transponder codes were activated.
    - Although the threats were hoaxes, they resulted in significant delays and financial losses estimated at ₹13-₹17 lakh per hour for airlines.

- **Nature and Source of Threats**
    - According to the govt, most threats originated on social media. Intelligence agencies are investigating and focusing on tracking IP addresses and VPN usage.
    - Despite initial suspicions of hoaxes, no potential threat has been overlooked given the scale of India's daily 4,000 flight operations.
    - Since the start of these incidents, approximately 275 threats have affected around 48,000 flights.

Handling security threats - Challenges and way forward

- **Systemic Issues**
    - Although details about recent Indian cases aren't fully disclosed, these incidents have revealed systemic issues, including gaps in **standardized procedures, guidelines, training, technology limitations, communication,** and **regulatory enforcement** within the aviation security system.
    - Emerging technologies, such as **quantum computing** and **aviation cybersecurity frameworks**, could enhance security further.

- **Proposed Strategies for Deterrence and Awareness**
  - To deter offenders, experts suggested publicly sharing **photos of offenders** on social media and displaying them at airports as a warning.
  - Additionally, the expert recommended establishing a **global hoax call database** and providing **rewards for informers** to encourage reporting of hoax threats.

Advisory to curb hoax bomb threats on social media
  - MeitY has advised all social media platforms to follow the rules under the Information Technology (IT) Rules and Bharatiya Nyay Sanhita (BNS).
  - They are asked to make a serious effort to quickly remove any bomb threat posts. If they don't comply, they could be held legally responsible.

- **Legal Framework Under IT Act, 2000 and IT Rules, 2021**
  - The advisory underscores the Ministry's reliance on existing legal provisions to compel platforms to act against misinformation that threatens public order.
  - The **Information Technology Act, 2000**, along with the **IT (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021**, require intermediaries to promptly remove harmful misinformation.
    - Previously, the Ministry applied similar provisions to tackle the spread of deepfake videos, citing Rule 3(1)(b) of the IT Rules.
    - Rule 3(1)(b)(v) prohibits misinformation and patently false information.

- **Potential Consequences for Non-Compliance**
  - The advisory warned that non-compliant platforms risk losing intermediary liability protections, exposing them to potential legal action as publishers of harmful posts.
  - The Ministry noted that legal actions could be pursued under both the IT Act and the Bharatiya Nyaya Sanhita, 2023, if platforms fail to exercise due diligence.

ABHAY ANTI-SUBMARINE WARFARE SHALLOW WATER CRAFT (ASW SWC)

The seventh Anti-Submarine Warfare Shallow Water Craft (ASW SWC), 'Abhay', was launched recently.

- It is built by India's leading shipbuilding and repairing company, Garden Reach Shipbuilders & Engineers (GRSE).

- This vessel is the seventh in an eight-ship ASW SWC series, an initiative from a 2019 contract between the Ministry of Defence (MoD) and GRSE.

- These ships are being designed with over 80 percent indigenous content.

- Designed for anti-submarine operations in coastal waters, these advanced craft are also capable of Low-Intensity Maritime Operations (LIMO) and mine-laying activities, enhancing the Navy's operational reach and defensive capabilities along India's coastlines.

- These 77-meter-long, 10-meter-wide warships are engineered for powerful subsurface surveillance in coastal waters.

- They can track various surface and underwater targets and conduct coordinated anti-submarine operations with aircraft.

- The ASW SWCs are compact, waterjet-propelled vessels capable of reaching speeds up to 25 knots, providing agility and swift response in tactical situations.

- Equipped with an advanced anti-submarine warfare suite, these ships carry lightweight torpedoes, ASW rockets, and mines, making them formidable assets for coastal defence.

- They are armed with a 30 mm Close-in Weapon System (CIWS) and 12.7 mm Stabilized Remote-Control Guns, ensuring a robust defence against aerial and surface threats.

- The ships are fitted with a Hull-Mounted Sonar and Low-Frequency Variable Depth Sonar for comprehensive underwater surveillance, enhancing their detection and engagement capabilities in anti-submarine operations.

21st LIVESTOCK CENSUS

- The Livestock Census is conducted every five years.
- The census carries out a headcount of the number of domesticated animals, poultry, and stray animals in the country.
- The census takes into account information about the species, breed, age, sex, and ownership status of the animals in question.
- Background: Since 1919, a total of 20 livestock censuses have been carried out so far, with the last being conducted in 2019.
- The enumeration process for the 21st census will take place between October 2024 to February 2025.

Focus of 21st Livestock Census

- According to the Department of Animal Husbandry and Dairying, information on sixteen animal species will be collected in the 21st census. These include: cattle, buffalo, mithun, yak, sheep, goat, pig, camel, horse, ponies, mule, donkey, dog, rabbit, and elephant.
- In total, the census will capture information on 219 indigenous breeds of these sixteen species recognised by ICAR-National Bureau of Animal Genetic Resources (NBAGR).
- Besides these, the census will also carry out a headcount of poultry birds such as fowl, chicken, duck, turkey, geese, quail, ostrich, and emu.
- The census this time will be fully digitised, like the last one in 2019.
- This will include "online data collection through a mobile application, monitoring at various levels through a digital dashboard, capturing the latitude and longitude of data collection location, and generation of livestock census report through software.
- The 21st census will capture several new data points. These include:
- Data on pastoral animals, pastoralists: The census will, for the first time, collect data on the contribution of pastoralists to the livestock sector, their socio-economic status, and livestock holding.

WHAT IS CYBERSQUATTING?

- It is an act of registering or using a domain name to profit from a trademark, corporate or personal name of an individual.
- Usually, cybersquatting is seen as a form of extortion or even as an attempt to take over business from its rival.

Types of Cybersquatting

- **Typo squatting:** These domains are bought with typological errors in the names of well-known brands. Examples of such misspelled domains are yajoo.com, facebok.com etc. The intention behind this act is to divert the target audience whenever they misspell a domain name.

- **Identity theft:** In cases pertaining to identity theft, the website of an already existing brand is copied with the intention of confusing the target consumer.

- **Name jacking:** It involves impersonating a well-known name/ celebrity in cyberspace. Instances of name jacking would include creating fake websites/ social media accounts with a celebrity's name.

- **Reverse cybersquatting:** It means an event whereby a person/s falsely claims a trademark as their own and falsely accuses the domain owner of cybersquatting. In essence, this act is the opposite of cybersquatting.

In India, there are no specific laws that condemn, prohibit or penalize the act of cybersquatting.

- However, domain names are considered as trademarks under the Trademark Act, 1999. Hence, any person who starts using an identical/similar domain name will be held liable for trademark infringement as described under Section 29 of the Trademark Act, 1999.

GREAT INDIAN BUSTARD

In a groundbreaking feat, a baby great Indian bustard was born via Artificial Insemination (AI) at the Sudasari Great Indian Bustard Breeding Centre in Jaisalmer district of Rajasthan.

- It is a bustard found on the Indian subcontinent.
- It is among the heaviest of the flying birds.

  Habitat: It inhabits dry grasslands and scrublands.

- Distribution: It is found mainly in the Thar Desert of Rajasthan that holds about 100 individuals. Also found in the arid regions of Maharashtra (Solapur), Karnataka (Bellary and Haveri) and Andhra Pradesh (Kurnool)

  Features:

- It is a large bird with a horizontal body and long, bare legs, giving it an ostrich-like appearance.
- The sexes are roughly the same size, with the largest individuals weighing 15 kg (33 pounds).
- It can easily be distinguished by its black crown on the forehead, contrasting with the pale neck and head.
- The body is brownish, and the wings are marked with black, brown, and grey.
- They breed mostly during the monsoon season, when females lay a single egg on open ground.

  Lifespan: 12-15 years

- These birds are opportunistic eaters. Their diet ranges widely depending on the seasonal availability of food. They feed on grass seeds, insects like grasshoppers and beetles, and sometimes even small rodents and reptiles.

  Conservation Status:

- IUCN: Critically Endangered   Wildlife (Protection)Act, 1972: Schedule 1
- CITES: Appendix 1

WHAT IS COKING COAL?

- Metallurgical coal, also known as met and coking coal, is a naturally occurring sedimentary rock found within the earth's crust.

- It typically contains more carbon, less ash, and less moisture than thermal coal, which is used for electricity generation.

- It is an essential ingredient in the production of steel, making it one of the most widely used building materials on earth.

- It is a bituminous coal with a suitable quality that allows the production of metallurgical coke, or simply named coke.

- Coke is the main product of the high-temperature carbonisation of coking coal.

- It is an essential input material in steelmaking as it is used to produce pig iron in blast furnaces, acting as the reducing agent of iron ore and as the support of the furnace charge.

- It takes around 770 kilograms of coal to make one ton of steel, with approximately 70 percent of global steel produced in basic oxygen blast furnaces.

- The largest producers of coking coal were China (676 million tons in 2022-62%), Australia (169 million tons in 2022-15%), Russia (96 million tons in 2022-9%), USA (55 million tons-5%), and Canada (34 million tons-3%).