

Current Affairs search results for tag: science-and-technology

1. Google Introduces Google Wallet for Android Users in India (May 10, 2024)

Google Wallet has been introduced by Google for Android users in India, providing a secure digital storage space.

An Overview of the News

- Users can conveniently store cards, passes, tickets, keys, or IDs in one central location.
- The platform is designed to integrate digital documents with QR codes for swift access.
- Notably, Google Wallet in India will not facilitate payment functionalities.
- Google Pay, the dedicated mobile payment application, will remain the primary solution for users' payment requirements in India.

Google Wallet:

- The Google Wallet app debuted in 2011, but in 2015, it was supplanted by Android Pay.
- Google unified Google Wallet and Android Pay in 2018, forming the new app called Google Pay.
- The Google Wallet app can be downloaded from the Google Play Store.
- Notably, Google Tez, renamed Google Pay, premiered in India on September 18, 2017.

Distinctions of Google Wallet in India

- Version Discrepancy: The Indian iteration of the app diverges slightly from its international counterparts.
- Android Exclusivity: Google Wallet functions solely on Android smartphones within India, lacking compatibility with smartwatches or wearables, unlike its global availability.

2. India's First Commercial System on Chip (SoC) Launched (May 9, 2024)

Mindgrove Technologies Private Limited, in collaboration with IITM Pravartak Technologies Foundation and IIT Madras Incubation Cell, introduced India's first commercial System on Chip (SoC) called Secure Internet of Things (IoT) on May 6, 2024.

An Overview of the News

- It is anticipated to be 30% more cost-effective than existing chips in similar categories, targeting IoT devices.

Technical Specifications:

- The Microcontroller Unit (MCU) chip has successfully undergone Multi-Project Wafer (MPW) tape-out at the 28 nanometer (nm) node.

- Secure IoT boasts a high-performance micro-controller operating at 700 Megahertz (MHz).

Domestic Integration:

- The chip is poised to enable Indian companies to incorporate a domestic SoC into their products, reducing costs while maintaining top-notch features.

Versatile Applications:

- Its applications range from smartwatches to smart city devices like connected meters for electricity, water, and gas, as well as connected home gadgets like smart locks, fans, and speakers, along with Electric Vehicle (EV) battery management systems and control systems.
- Secure IoT offers a wide array of features and is designed to be compatible with bare metal code or micro-controller Real-Time Operating System (RTOS), thus expanding its utility to domains such as traffic control systems, autonomous vehicles, medical equipment, etc.

Market Impact:

- Notably, India consumes over a billion chips annually, and Secure IoT has the potential to replace between 10 to 50 million of them.

Supporting Ecosystem:

- Mindgrove not only plans to sell the chip but also aims to provide design expertise to Indian firms, facilitating faster innovation and scaling up production in India.

3. NGEL and ITL sign MoU for Renewable Energy Ventures (April 23, 2024)

NTPC Green Energy Limited (NGEL) and Indus Towers Limited (ITL) have entered into a Memorandum of Understanding (MoU) to support green energy goals and India's carbon-neutral aspirations.

An Overview of the News

- The collaboration aims to jointly develop grid-connected renewable energy projects, including solar, wind, and energy storage solutions.
- Signatories to the MoU are Soumya Kanti Chowdhuri, Chief General Manager of NGEL, and Vikas Poddar, Chief Financial Officer (CFO) of ITL.
- NGEL operates as a wholly-owned subsidiary of NTPC Limited, formerly known as the National Thermal Power Corporation.

About ITL

- Indus Towers Limited, based in Gurugram, Haryana, is an Indian telecommunications infrastructure firm.

- Established in November 2007 by Bharti Infratel, Vodafone Essar, and Idea Cellular.
- It specializes in offering passive infrastructure services to mobile network operators and other wireless service providers.
- The company's primary objective is to provide shared telecom infrastructure to operators without discrimination.
 - Headquarters - DLF Cyber City, Gurugram, Haryana
 - Chairman - N. Kumar
 - MD & CEO - Prachur Shah

4. Intel Unveils 'Hala Point': The World's Largest Neuromorphic System for Sustainable AI (April 22, 2024)

Intel Corporation, a leading semiconductor manufacturer, unveils 'Hala Point,' the world's largest neuromorphic system.

An Overview of the News

- Codenamed 'Hala Point,' the system is designed to advance sustainable Artificial Intelligence (AI) initiatives.

Key Features of 'Hala Point':

- Initial deployment:** The system is deployed at Sandia National Laboratories, leveraging Intel's Loihi 2 processor.
- Aim:** 'Hala Point' aims to facilitate research into future brain-inspired AI while addressing current AI's efficiency and sustainability challenges.
- Evolution:** Building upon Intel's first-generation large-scale research system, Pohoiki Springs, 'Hala Point' introduces architectural enhancements.
- Performance:** The system boasts over 10 times more neuron capacity and up to 12 times higher performance compared to its predecessor.

Operational Capabilities:

- Processing Power:** 'Hala Point' supports up to 20 quadrillion operations per second.
- Efficiency:** Remarkably, the system achieves an efficiency exceeding 15 trillion 8-bit operations per second per watt (TOPS/W) when executing conventional deep neural networks.

5. DRDO Successfully Tests Indigenous Cruise Missile at Odisha (April 22, 2024)

On April 18, 2024, the Defence Research and Development Organisation (DRDO) conducted a successful flight-test of the Indigenous Technology Cruise Missile (ITCM) from the Integrated Test Range (ITR) in Chandipur, Odisha.

An Overview of the News

Features of Indigenous Technology Cruise Missile (ITCM):

- **Advanced Avionics:** Equipped with advanced avionics and software to ensure enhanced and reliable performance.
- **Development:** Developed by DRDO's Aeronautical Development Establishment (ADE) in Bengaluru, Karnataka, with contributions from other Indian laboratories and industries.
- **Propulsion System:** The missile features an indigenous propulsion system developed by the Gas Turbine Research Establishment (GTRE) in Bengaluru, Karnataka.

Key Observations during the Test:

- **Range Sensors:** Various Range Sensors including Radar, Electro Optical Tracking System (ETOS), and Telemetry deployed by ITR at different locations to ensure comprehensive coverage of the flight path.
- **Monitoring from Aircraft:** The flight of the missile was monitored from the Su-30-Mk-I aircraft of the Indian Air Force (IAF).

About ADE:

- **Responsibility:** A laboratory of DRDO entrusted with conducting research and development in military aviation.
- **Director:** Y Dilip
- **Headquarters:** Located in Bengaluru, Karnataka.

6. India Sends Inaugural BrahMos Missile Shipment to Philippines in Defense Pact Fulfillment (April 20, 2024)

India delivered its first BrahMos supersonic cruise missiles to the Philippines under a \$375 million deal signed in January 2022.

An Overview of the News

- The deal involves supplying three export versions of the BrahMos missile system along with integrated logistics support and training for operators and maintainers.
- The first batch of munitions has arrived in the Philippines after two years since the pact was signed.
- **Components and Support Package:**
- Each system delivered includes two missile launchers, a radar unit, and a command-and-control center.

- Additionally, an integrated logistics support package and training for operators and maintainers were part of the deal.

Arrival of First Batch:

- Two years after the agreement, the first batch of BrahMos missiles reached the Philippines.
- The system enables firing two missiles within 10 seconds, adaptable to various platforms like submarines, ships, aircraft, or land-based installations.

Export Process:

- The BrahMos missiles were transported from India to the Philippines via an Indian Air Force C-17 Globemaster jet.
- This marks India's inaugural export of BrahMos missiles.

Global Interest and Capabilities:

- Several nations, including Argentina, have shown interest in procuring BrahMos missiles from India.
- BrahMos missiles boast a speed of 2.8 Mach, nearly three times the speed of sound.

7. Government forms panel to promote scientific mining of critical minerals (April 19, 2024)

A **seven-member panel** has been set up by the government under the leadership of **NITI Aayog member Vijay Kumar Saraswat** to promote scientific mining of critical minerals.

An Overview of the News

- The panel's primary goal is **to propose legislative measures for the cost-effective and scientific extraction of critical minerals such as copper, gold, and diamond.**
- These minerals are often found in deeply embedded deposits, requiring underground mining for extraction.
- Strategies will be devised by the panel to raise awareness among states about the implications of mining reforms.
- In **2023, the Geological Survey of India (GSI)** discovered approximately 5.9 million tonnes of lithium deposits in the Salal-Haimana area of Jammu & Kashmir, crucial for electric vehicle manufacturing.

About Critical Minerals

- Critical minerals are vital for both economic development and national security.
- India's government has identified a list of **30 critical minerals.**

- These minerals include Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, platinum group elements (PGE), Phosphorous, Potash, Rare Earth Elements (REE), Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium, and Cadmium.

8. New Endangered Balsam Species Discovered in Kerala's Agasthyamala Biosphere Reserve (April 18, 2024)

A new species of the genus *Impatiens* (family Balsaminaceae), named "*Impatiens neo-uncinata*," was discovered in the Agasthyamala biosphere reserve, Thiruvananthapuram district, Kerala, during a floristic survey.

An Overview of the News

- The discovery was documented in the scientific journal *Phytotaxa*.
- "*Impatiens neo-uncinata*" shares morphological similarities with *Impatiens uncinata* but varies in flower size, basal and distal lobes, dorsal petal, and pollen.
- It features snowy white flowers with red stripes and relatively large blooms.
- The new species has only been observed in a single locality at elevations ranging from 1,000 to 1,250 meters and is classified as Endangered according to IUCN criteria.
- The genus *Impatiens* encompasses over 1000 species found in tropical and sub-tropical regions.

About Kerala

- Kerala, situated on India's Malabar Coast, boasts nearly 600km of Arabian Sea coastline.
- Famous for its palm-fringed beaches and intricate network of backwaters.

Capital - Thiruvananthapuram

Chief Minister - Pinarayi Vijayan

Districts - 14

Demonyms - Keralite, Malayali

9. Successful MPATGM Warhead Flight Trials Conducted by Indian Army and DRDO (April 16, 2024)

The Indian Army and DRDO recently conducted successful warhead flight trials of the Man Portable Anti-tank Guided Missile (MPATGM) Weapon System on April 13, 2024, at the Pokhran Field Firing Range in Rajasthan.

An Overview of the News

- Components of the MPATGM Weapon system include the MPATGM itself, Launcher, Target Acquisition System (TAS), and Fire Control Unit (FCU).

- MPATGM was developed domestically by DRDO in collaboration with VEM Technologies Private Limited, based in Hyderabad, Telangana.
- The trials aimed at meeting the operational requirements specified in the General Staff Qualitative Requirements (Infantry, Indian Army), covering the complete operational envelope.
- Successful penetration trials of the Tandem Warhead System of MPATGM were also conducted during these trials.

Key Features of MPATGM:

- The missile is approximately 1.3 meters long with a diameter of around 0.12 meters.
- It has a strike range of 2.5 kilometers and weighs about 14.5 kilograms.
- Equipped with a modern Infrared Imaging Seeker and advanced avionics.

Manufacturing Location:

- Bharat Dynamics Limited (BDL) in Bhanoor, Telangana, is designated for its manufacturing.

About DRDO

- It serves as the Research and Development (R&D) arm of the Ministry of Defence (MoD).
- Chairman - Dr. Samir Venkatpati Kamat
- HQ - New Delhi, Delhi
- Founded - 1958

10. Israel's C-Dome Defense System Successfully Deployed in Eilat for First Time (April 15, 2024)

Israel has introduced its maritime defense system, known as the C-Dome, for the first time in Eilat, Israel's southernmost city.

An Overview of the News

- The C-Dome is essentially a naval adaptation of the Iron Dome, a renowned air defense system designed to safeguard against rocket and missile threats.
- Notably, on April 8, 2024, the Israel Defence Forces (IDF) effectively intercepted a suspicious airborne target breaching Israeli airspace using the C-Dome defense mechanism.
- The C-Dome Defense System is a product of Rafael Advanced Defense Systems, a state-owned Israeli defense corporation.

About IDF:

- The Israel Defense Forces (IDF), also known as Tzahal in Hebrew, serves as the national military of the State of Israel.
- Comprising three main service branches, namely the Israeli Ground Forces, the Israeli Air Force, and the Israeli Navy, it covers various aspects of defense.
- As the singular military arm of Israel's security infrastructure, the IDF holds exclusive responsibility for national defense.