

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

1. IIT incubated firm develops indigenous Mobile Operating System (Jan. 21, 2023)

An **IIT Madras incubated firm** has developed an indigenous mobile operating system '**Bharos**' that can benefit India's 100 crore mobile phone users.

About Mobile Operating System 'Bharos'

- The software, named 'Bharos', can be installed on commercial off-the-shelf handsets.
- It was developed by **JandK Operations Pvt Ltd (JandKops)**, a company set up by the IIT Madras Innovative Technologies Foundation.
- It provides a secure environment for the users and is a significant contribution towards '**Atmanirbhar Bharat**'.
- It provides access to trusted apps from organisation-specific **Private App Store Services (PASS)**.
- A PASS provides access to a curated list of apps that have been thoroughly tested and have met certain security and privacy standards of organisations.
- Its users can be rest assured that the apps they are installing are safe to use.
- It comes under **No Default Apps (NDA)**. That means users can't be forced to use apps they don't know about or can't trust.
- Bharos provides '**Native Over The Air**' (NOTA) updates that can help keep devices secure.
- NOTA updates are automatically downloaded and installed on the device without the user needing to manually initiate the process.

2. 'Rare orange coloured bat' spotted in Chhattisgarh's Kanger Ghati National Park (Jan. 19, 2023)

A 'rare orange coloured bat' known as 'painted bat' has been spotted in a banana plantation in Parali Bodal village of Kanger Valley National Park in Bastar, Chhattisgarh.

An overview of the news

- The scientific name of this painted bat is 'Kerivoula picta'. This species has been kept in the category of globally endangered.
- This species is commonly found in Bangladesh, Brunei, Burma, Cambodia, China, Indonesia, Malaysia, Nepal, Sri Lanka, Thailand and Vietnam.
- In India, this bat has so far been seen in the Western Ghats, Kerala, Maharashtra, Odisha and Kanger valley of Chhattisgarh.

- The painted bat is characterised by bright orange and black wings, dense orange fur on the back and warm buff underside.
- There are about 131 species of bats in India and 31 of them are found in the central parts of the country.

- **Kanger Valley National Park**

- Kanger Ghati National Park was established in 1982.
- The name of this national park is derived from the Kanger River. This park is located in the Bastar district of Chhattisgarh, which is spread over an area of about 200 square kilometres.
- Due to its high biodiversity it has been designated as a Biosphere Reserve.
- The national park is famous for its limestone caves which also provide a suitable habitat for bats.

- **Other 2 National Parks of Chhattisgarh**

- Indravati National Park
- Guru Ghasidas National Park

3. NASA awards 425 million to Boeing Company for agency's sustainable flight demonstrator project (Jan. 19, 2023)

The **National Aeronautics and Space Administration (NASA)** has awarded **\$425 million** to The **Boeing Company** for a sustainable flight demonstrator project.

An overview of the news

- Boeing will work with NASA to validate technologies aimed at 'building, testing and flying a full-scale demonstrator aircraft and reducing emissions'.
- Over seven years, **NASA will invest \$425 million**, while Boeing and its partners will contribute the remainder of the agreement, estimated to **cost \$725 million**.
- The **Transonic Truss-Braced Wing Demonstrator Single-Aisle** is an aeroplane that aims to reduce fuel consumption and emissions by up to **30 percent**.
- The goal of the project is to produce and test a full-scale demonstrator that will help build future fuel-efficient commercial airliners.
- The United States has set a goal of achieving **net-zero greenhouse gas emissions** from the US aviation sector **by 2050**.

About NASA

- NASA was formed under the **National Aeronautics and Space Act** on **July 19, 1948**, in place of its predecessor, the National Advisory Committee for Aeronautics (NACA).

- NASA - **National Aeronautics and Space Administration**
- Headquarters- **Washington D.C.**
- Administrator - **Bill Nelson**

4. Technology for Air Quality Monitoring System launched by MeitY (Jan. 18, 2023)

The Secretary, MeitY, **Alkesh Kumar Sharma** has launched the **Technology for Air Quality Monitoring System (AI-AQMS v1.0)** developed under MeitY supported projects on 17 January in **New Delhi**.

An overview of the news

- **Center for Development of Advanced Computing (C-DAC)**, Kolkata has developed an outdoor air quality monitoring station in collaboration with **TeXMIN, ISM, Dhanbad**.
- It has been developed under the '**National Program on Electronics and ICT Applications in Agriculture and Environment (AgriEnIcs)**'.
- It will monitor environmental pollutants which include parameters like **PM 1.0, PM 2.5, PM 10.0, SO2, NO2, CO, O2**, ambient temperature, relative humidity etc. for continuous air quality analysis of the environment.
- **The transfer of technology (ToT)** was done at MeitY, New Delhi in which a ToT agreement has been signed between Senior Director & Centre Head, C-DAC, Kolkata and Dr. Deepa Taneja, CEO, J.M.EnviroLab Private Limited.

5. NASA's James Webb Space Telescope discovers new exoplanet named LHS 475b (Jan. 17, 2023)

Recently, a new exoplanet named LHS 475b has been discovered by the James Webb Space Telescope of the National Aeronautics and Space Administration (NASA).

- **LHS 475b**
- It is roughly the same size as Earth, with a diameter of 99% that of Earth.
- It is a celestial, rocky planet located approximately 41 light-years away from Earth in the constellation Octane.
- It differs from Earth in two respects, first that it completes one orbit in only two days and secondly it is hundreds of degrees hotter than Earth.
- It is closer to Earth than any other planet in our solar system.
- It orbits very close to a red dwarf star and completes a complete orbit in just two days.

Exoplanet:

- Exoplanets are planets that orbit other stars and are away from our solar system. The first confirmation of the detection of an exoplanet was in the year 1992.
- According to NASA, more than 5,000 exoplanets have been discovered so far.
- Scientists believe that there are more planets than stars because at least one planet orbits each star.
- Exoplanets come in different sizes. They can be large and gaseous like Jupiter and small and rocky like Earth. There is also variation in their temperature, which can range from extremely hot (Boiling Hot) to extremely cold (Freezing Cold).

6. Entire country to be covered by doppler weather radar network by 2025 (Jan. 16, 2023)

doppler weather radar network by 2025

Union Minister of State for Earth Sciences, **Dr Jitendra Singh** on 15 January informed that **by 2025**, the entire country will be covered by **Doppler weather radar network** so that extreme weather events can be predicted more accurately.

An overview of the news

- The accuracy of the meteorological department's forecast regarding severe weather has improved by about **40 per cent** in the last eight to nine years.
- In this sequence, by 2025, there will be a Doppler radar network across the country. The number of Doppler radars in the country has increased from **15 in 2013 to 37 in 2023**.
- India will set up **25 more radars** in the next two to three years, taking the number to **62**.
- Speaking on the occasion of the **148th Foundation Day of the India Meteorological Department (IMD)**, the minister said with the improvement in forecasting, the disaster-related death rate has come down to single digit.
- IMD commissioned **four Doppler Weather Radars (DWRs) in Himachal Pradesh, Uttarakhand and Jammu and Kashmir**. This will strengthen the weather monitoring capabilities in the Western Himalayan region.
- These were installed at **Surkanda Devi in Uttarakhand, Jot and Murari Devi in Himachal and Banihal Top in Jammu and Kashmir**.

What is Doppler Weather Radar?

- It is a special type of radar that uses the **Doppler effect** to generate velocity data about objects at a distance.
- It is designed to improve accuracy in long range weather forecasting and monitoring using a parabolic dish antenna and a foam sandwich spherical radome.

What is Radar (Radio Detection and Ranging)?

- It is a device that uses electromagnetic waves in the microwave region to detect the location, height, intensity, and speed of moving and non-moving objects.

What is the Doppler effect?

- It refers to the change in wave frequency during the relative motion between a wave source and its observer.
- It was discovered by Johann Doppler, who described it as a process of increasing or decreasing the luminosity of stars depending on the relative motion of the star.

7. Dr Jitendra Singh launches “Geospatial Hackathon” (Jan. 14, 2023)

Union Minister of State (Independent Charge) Science & Technology **Dr Jitendra Singh** on 14th January launched “**Geospatial Hackathon**” to promote Innovation and Start-Ups in India’s **Geospatial ecosystem**.

An overview of the news

- The hackathon will promote innovation and startups in the geospatial ecosystem of India.
- The objective of this hackathon is not only to foster partnerships between the **public and private geospatial sectors**, but also to strengthen the **geospatial start-up ecosystem** of our country.
- The “**Geospatial Hackathon**” will end on **March 10, 2023** and will have two sets of challenges - **Research Challenge and Startup Challenge**.
- There will be **4 winners** to be found for the best solution to the geospatial select problem statements.
- The minister invited the youth of the country to participate and contribute in building the country's geospatial economy.
- Half of India's population is below 40 years of age and very ambitious.
- The Indian start-up economy has crossed a major milestone as **India's 100th start-up** joins the **unicorn club in 2022**.

8. EU Inaugurates First Mainland Satellite Launch Port (Jan. 14, 2023)

European officials and Swedish King **Carl XVI Gustaf** inaugurated the **EU's first mainland orbital launch complex** on 13 January during a visit to **Sweden** by members of the European Commission, which is the **27-nation bloc's executive arm**.

An overview of the news

- The European Union is looking to boost its ability to launch **small satellites** into space with a new launchpad in arctic Sweden.
- The new facility inaugurated at the **Esrange Space Center** near the **city of Kiruna** will complement the EU's current launching capabilities in French Guiana.
- The tiny satellites are vital for tracking natural disasters in real time and helping to guarantee **global security** in light of Russia's war in Ukraine.
- The total number of satellites could reach **100,000 by 2040** as compared to the current **5,000 operational satellites**.

European Union (EU)

- It is an international organisation made up of European countries, which was **formed in 1993**.
- It is a group of **27 countries** that act as a cohesive economic and political bloc.
- 19 of these countries use the **euro** as their official currency.
- Its goal is to promote peace and the well-being of all citizens of the EU.
- Headquarters: **Brussels, Belgium**

9. Startup firm IG Drones develops India's first 5G-enabled drone (Jan. 13, 2023)

Tech startup firm **IG Drones** has developed **India's first 5G-enabled drone** capable of vertical take-off and landing.

An overview of the news

- This drone has been named **Skyhawk**.
- It can be used in other areas apart from defence and medical applications.
- The Skyhawk can fly for about five hours with a **payload of 10 kg**, as this drone is also equipped with capabilities like artificial intelligence and thermal imaging.
- Due to the facility of **vertical take-off and landing (VTOL)**, it does not require any special runway or track for take-off or landing, so it can be operated in any area.
- The drone is **IP67** rated and can be controlled through a combination of **NavIC + GPS navigational satellites**.
- This drone can travel **100 km in 12 to 15 minutes** at its maximum speed.

About IG Drones

- IG Drones is an India-based tech company providing drone survey, mapping and inspection services.
- It was established at **Veer Surendra Sai University of Technology in Sambalpur, Odisha.**
- Its headquarter is located in **New Delhi.**

10. India to send three person to 6,000 metre below sea level under Samudrayaan Mission (Jan. 13, 2023)

India will send three men **six thousand metres** below sea level to search for mineral resources under the **Samudrayaan mission.**

An overview of the news

- Earth Sciences Minister **Dr Jitendra Singh** said, a vehicle named **MATSYA 6000** will carry three people and this mission is expected to be realized in the next three years.
- The vehicle is being designed and developed by the **National Institute of Ocean Technology, Chennai.**
- It can bear 12 hours under normal operation and 96 hours under emergency for human safety.
- PM Narendra Modi mentioned the **Deep Ocean Mission** in his Independence Day address for two consecutive years in 2021 and 2022.

About Samudrayaan Mission

- It is a part of the **Deep Ocean Mission.**
- It was announced by the **National Institute of Ocean Technology (NIOT)** with ISRO's **Gaganyaan mission.**
- It aims to develop a self-propelled manned submersible to carry **3 humans** to a **depth of 6000 meters** in the ocean with scientific sensors and equipment for deep sea exploration.
- Under this mission, a manned submersible vehicle named **MATSYA 6000** will be sent for deep underwater studies.

What is the Deep Ocean Mission?

- It was approved by the **Ministry of Earth Sciences** in June 2021.
- It aims to explore deep sea marine resources, develop deep sea technology for sustainable utilization of ocean resources and support the blue economy initiatives of the Government of India.

- The cost of the mission is about **Rs 4,077 crore** over a period of five years and will be implemented in phases.