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LiDAR

- LiDAR (Light Detection and Ranging) is a remote sensing method that uses light in the form of a pulsed laser to measure ranges & variable distances.
- These light pulses—combined with other data recorded by the airborne system— generate precise, three-dimensional information about the shape of the Earth and its surface characteristics.
- A LiDAR instrument principally consists of a laser, a scanner, and a specialized GPS receiver.
- Airplanes and helicopters are the most commonly used platforms for acquiring LiDAR data over broad areas.
- LiDAR is used for agriculture, hydrology and water management systems, geology-related applications.
- LiDAR is commonly used by geologists and surveyors to make high-resolution maps.
- U.K.-based team of archeologists has continued its research over the Tamar Valley through LiDAR (Light Detection and Ranging) despite lockdown due to Covid-19 in the country.

Tamar Valley

- Tamar valley is located in the south of England and is a rich archaeological landscape with many sites belonging to the Iron Age and Roman era.
- The area is a World Heritage Site due to its historic mining activities.
- A World Heritage Site is a place that is listed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) for its special cultural or physical significance.
- The list of World Heritage Sites is maintained by the international 'World Heritage Programme', administered by the UNESCO World Heritage Committee.

Permafrost

- Permafrost is ground that remains completely frozen at 0 degrees Celsius

or below for at least two years.
- It is defined solely based on temperature and duration.
- The permanently frozen ground, consisting of soil, sand, and rock held together by ice, is believed to have formed during glacial periods dating several millennia.
- These grounds are known to be below 22 per cent of the land surface on Earth, mostly in polar zones and regions with high mountains.
- They are spread across 55 per cent of the landmass in Russia and Canada, 85 per cent in the US state of Alaska, and possibly the entirety of Antarctica.
- At lower latitudes, permafrost is found at high altitude locations such as the Alps and the Tibetian plateau.
- While permafrost itself is always frozen, the surface layer that covers it (called the “active layer”) need not be.
- The Earth’s polar and high altitude regions its principal permafrost reservoirs are the most threatened by climate change.
- As temperatures rise, the binding ice in permafrost melts, making the ground unstable and leading to massive potholes, landslides, and floods.

Turant Customs

- Central Board of Indirect Taxes and Customs launches its flagship programme 'Turant Customs' at Bengaluru & Chennai
- It is a giant leap forward to leverage technology for faster Customs clearance of imported goods.
- Importers will now get their goods cleared from Customs after a faceless assessment is done remotely by the Customs officers located outside the port of import.
- Now, the goods imported at Chennai may be assessed by the Customs officers located at Bengaluru and vice versa, as assigned by the Customs’ automated system.
- Turant Customs is a mega reform for the ease of doing business.
- The start of Turant Customs at Bengaluru and Chennai will be the first phase of the All India roll out which would get completed by 31st December this year.
- The first phase will cover imports of Mechanical, Electrical and Electronics machineries at the ports, airports and ICDs of Bengaluru and Chennai.
- Turant Customs will benefit the importers by eliminating routine interface with the Customs officers and providing uniformity in assessment across

the country

Central Board of Indirect Taxes

- The Central Board of Indirect Taxes and Customs is the nodal national agency responsible for administering Customs, GST, Central Excise, Service Tax & Narcotics in India.
- The Customs & Central Excise department was established in the year 1855 by the then British Governor General of India, to administer customs laws in India and collection of import duties / land revenue.
- It is one of the oldest government departments of India.
- Currently the Customs and Central Excise / GST department comes under the Department of Revenue, Ministry of Finance.

Challenger Deep

- Challenger Deep is in the Mariana Trench, which is seven miles below the surface of the Pacific Ocean.
- According to National Oceanic and Atmospheric Administration (NOAA), the average depth of the ocean is about 12,100 feet and the deepest part is called the Challenger Deep, which is located below the surface of the western Pacific Ocean.
- It is approximately 36,200 feet deep.
- The most of the existing knowledge of the oceans comes from shallower waters, while deeper waters remain relatively unexplored, even as humans are relying more on these areas for food, energy and other resources.
- Thus finding out more about the deep ocean areas can potentially reveal new sources for medical drugs, food, energy resources and other products.
- Significantly, information from the deep oceans can also help to predict earthquakes and tsunamis, and help us understand how we are affecting and getting affected by the Earth's environment.
- Vehicles called Human Occupied Vehicles (HOVs) may be used that carry scientists to the deep sea.
- "Limiting Factor" was the first manned submersible to reach the bottom of the Atlantic Ocean, or 8,376 meters in the Brownson Deep, thus making it the deepest diving, currently operational submersible.

National Oceanic and Atmospheric Administration

- The National Oceanic and Atmospheric Administration is an American scientific agency within the United States Department of Commerce that focuses on the conditions of the oceans, major waterways, and the atmosphere.
- NOAA warns of dangerous weather, charts seas, guides the use and protection of ocean and coastal resources and conducts research to provide the understanding and improve stewardship of the environment.

State of India's Environment 2020

- State of India's Environment report, 2020 was released by Centre for Science and Environment (CSE), Down to Earth a research and advocacy organization.
- According to the report Indian courts will take between nine and 33 years to clear a backlog of cases for violations under several environmental laws at their current pace.
- Nearly one-and-a-half years will be taken to clear more than 35,000 pending environment cases at the current rate of disposing cases.
- The wait period shoots up to a worrying 33 years under the Air and the Water (Prevention and Control of Pollution) Act.
- Similarly, courts will take over 30 years to dispose of cases under the Environmental (Protection) Act at their current case disposal rate.
- In fact, more than 90 per cent cases were pending for trial in five of the seven environment laws.
- Court pendency is calculated by the total number of cases awaiting trial at the end of the year divided by the total cases for trial in that year.

Source: The Hindu, DTE, News on Air

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