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1. AI advisory issued by Government: What does the March 1 notification signal to tech firms?

Why in News?

On March 1, the Ministry of Electronics and Information Technology (MeitY) issued an advisory to the Artificial Intelligence industry. It said that all generative AI products, like large language models on the lines of ChatGPT and Google's Gemini, would have to be made available "with [the] explicit permission of the Government of India" if they are "under-testing/ unreliable".

What is the government's stand?

The advisory represents a starkly different approach to AI research and policy that the government had previously signalled. It came soon after Rajeev Chandrasekhar, the Minister of State for Electronics and Information Technology, reacted sharply to Google's Gemini chatbot, whose response to a query, "Is [Prime Minister Narendra] Modi a fascist?" went viral. Mr. Chandrasekhar said the ambivalent response by the chatbot violated India's IT law.



Applicability of existing laws

Mr. Chandrasekhar insisted that there were “legal consequences under existing laws (both criminal and tech laws) for platforms that enable or directly output unlawful content,” and that the advisory was put out for firms “to be aware that, platforms have clear existing obligations under IT and criminal law.” Mr. Chandrasekhar referred to rule 3(1)(b) of the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, which prohibits unlawful content like defamation, pornography, disinformation and anything that “threatens the unity ... and sovereignty of India.” He added that the rules were intended for large tech firms and wouldn’t apply to startups.

Relevance: GS Prelims & Mains Paper II; Governance

Source: The Hindu

2. SIMA, Google Deepmind’s new AI that can play video games with you

Why in news?

Google DeepMind revealed its latest AI gaming agent called SIMA or Scalable Instructable Multiworld Agent, which can follow natural language instructions to perform tasks across video game environments. Simply, Google’s new AI is all set to play video games with you.

SIMA points to a future of gaming where AI agents could play a key role. It also takes us a step closer to AI which can intelligently collaborate with humans not only in games but also in doing tasks in real-world environments.



What is SIMA?

AI research lab Google Deepmind describes SIMA as an AI Agent, which is different from AI models such as OpenAI’s ChatGPT or Google Gemini. AI models are trained on a vast data set and are limited when it comes to working on their own. On the other hand, an AI Agent can process data and take action themselves.

SIMA can be called a generalist AI Agent that is capable of doing different kinds of tasks. It is like a virtual buddy who can understand and follow instructions in all sorts of virtual environments – from exploring mysterious dungeons to building lavish castles. It can accomplish tasks or solve challenges assigned to it.

It is essentially a super-smart computer programme that can be thought of as a digital explorer, having the ability to understand what you want and help create it in the virtual world.

Relevance: GS Prelims; Science & Technology

Source: The Indian Express

3. Why has India developed an atmospheric testbed near Bhopal?

Why in News?

On March 12, the first phase of India's Atmospheric Research Testbed in Central India (ART-CI) was inaugurated at Silkheda in Sehore district, located about 50 km northwest of Bhopal in Madhya Pradesh.

Why has India developed an atmospheric testbed near Bhopal?



Funded by the Ministry of Earth Sciences (MoES), the facility will house 25 high-end meteorological instruments for studying vital cloud processes associated with the monsoons over central India's Monsoon Core Zone (MCZ).

What is the Atmospheric Research Testbed (ART)?

The ART is an open-field, focused observational and analytical research programme at Silkheda.

The facility aims to conduct ground-based observations of weather parameters like temperature, wind speeds, etc. and in-situ (on-site) observations of the transient synoptic systems – like low-pressure areas and depressions

that form in the Bay of Bengal – during the southwest monsoon season from June to September.

Studying these systems and their associated cloud parameters will be used to generate high volumes of data over a long period. It can then be compared with the existing weather models so that improvements can be made to obtain accurate rainfall predictions.

The setup at ART will also be used for calibrating and validating various satellite-based observations, part of weather predictions and forecasting.

Spread over 100 acres, the ART has been developed by the Ministry of Earth Sciences for Rs 125 crore. The Indian Institute of Tropical Meteorology (IITM), Pune, is in charge of the operations.

Under the first phase, remote sensing-based and in-situ measurements using 25 meteorological instruments have commenced. In the second phase, ART will deploy instruments such as a radar wind profiler and balloon-bound radiosonde, and soil moisture and temperature measuring equipment.

Why is having an Atmospheric Research Testbed important?

At present, 45% of India's labour force is employed in the agriculture sector. Much of Indian agriculture is rain-fed, as is cultivation along the Monsoon Core Zone (MCZ), which spans the central India region from Gujarat to West Bengal.

The southwest monsoon season accounts for 70 per cent of the country's annual average rainfall (880mm). Throughout India, the majority of Kharif cultivation is undertaken between July and August, which see an average monthly rainfall of 280.4mm and 254.9mm (1971–2020 average), respectively.

During this four-month-long season, several rain-bearing synoptic systems, namely the low pressures or depressions, develop in the Bay of Bengal. Inherently, these systems move westwards/northwestwards over to the Indian mainland and pass through the MCZ, causing bountiful rainfall.

Why is it important to have data about monsoons over central India?

Studies have correlated the all-India rainfall performance to the rainfall received over the central India region, highlighting its importance.

The India Meteorological Department (IMD) issues rainfall forecasts for the country's four homogeneous regions – north, west, east and south peninsular India. In addition, it issues a special rainfall forecast for the MCZ, which is considered India's food bowl.

However, there is still limited understanding about the role of these synoptic systems, their associated cloud physics, cloud properties and their overall role in enhancing the monsoon rainfall.

Central India, therefore, acts as a natural laboratory for scientists and meteorologists to perform a hands-on study of the Indian monsoons. They can record data and make observations about the allied systems, clouds, and other associated physical and atmospheric parameters.

Additionally, climate change is driving erratic rainfall patterns in the tropical regions, like India. It has also strengthened the low-pressure systems, which are aided by high temperatures. This results in very heavy rainfall recorded along their trajectory during the monsoons.

Now, with ART, scientists will be able to generate and obtain long-term observations on cloud microphysics, precipitation, convection, and land-surface properties, among a host of other parameters.

This information will be assimilated and fed into the numerical weather models to enhance forecast output, especially the rainfall forecasts. More accurate forecasts will ultimately help the farming community plan their activities better.

Why Madhya Pradesh?

The ART has been established at Silkheda, a location that falls directly in line with the path of major rain-bearing synoptic systems. This will facilitate direct monitoring and tracking.

Besides, the locality is pristine and free of anthropogenic and other pollutants, making it the best site in central India for setting up sensitive, high-end meteorological instruments and observatories for recording data.

What instruments are ART equipped with?

To obtain continuous observations of convection, clouds, and precipitation, and monitor the major modes of variabilities, the ART is equipped with over two dozen high-end instruments, radars and more. At 72 metres, ART will house India's tallest meteorological tower.

Some of the instruments deployed are an aethalometer for performing aerosol studies, a cloud condensation nuclei counter, a laser ceilometer to measure cloud sizes, a micro rain radar to calculate raindrop size and its distribution, and a Ka-band cloud radar and a C-band doppler weather radar to help track the movement of rain-bearing systems over this zone.

Relevance: GS Prelims; Geography

Source: The Indian Express