1. Gangster Goldy Brar declared designated terrrorist under UAPA: What this means

Figure 1 Goldy Brar is currently hiding in Canada

What happened?

Gangster Goldy Brar, the mastermind behind the murder of Punjabi singer Sidhu Moosewala, was declared a designated terrorist by the Centre under the Unlawful Activities (Prevention) Act (UAPA).

Amendments introduced in 2019 brought in provisions by which the Centre can declare individuals — not only organisations — as designated terrorists.

Who is a "terrorist"?

The words "terror" or "terrorist" are not defined, but the UAPA defines a "terrorist act" as any act committed with intent to threaten or likely to threaten the unity, integrity, security, economic security, or sovereignty of India or with intent to strike terror or likely to strike terror in the people or any section of the people in India or in any foreign country. While the original Act dealt with "unlawful" acts related to secession; anti-terror provisions were introduced in 2004.

The 2019 Bill sought to empower the central government to designate an individual a "terrorist" if they are found committing, preparing for, promoting, or involved in an act of terror. A similar provision already existed in Part 4 and 6 of the legislation for organisations that can be designated as a "terrorist organisation". Home Minister Amit Shah, during a debate on the Bill in Lok Sabha, stressed on the need to designate individuals as terrorists to root out terrorism.

How are individuals declared terrorists?

The central government may designate an individual as a terrorist through a notification in the official gazette, and add his name to the Fourth Schedule to the UAPA. The government is not required to give an individual an opportunity to be heard before such a designation.

At present, in line with the legal presumption of an individual being innocent until proven guilty, an individual who is convicted in a terror case is legally referred to as a terrorist, while those suspected of being involved in terrorist activities are referred to as terror accused. The 2019 amendment did not clarify the standard of proof required to establish that an individual is involved, or is likely to be involved, in terrorist activities.

What happens when an individual is declared a terrorist?

The designation of an individual as a global terrorist by the United Nations is associated with sanctions including travel bans, freezing of assets and an embargo against procuring arms. The 2019 amendment, however, did not provide any such detail.

The amendment also gave the Centre the power to remove a name from the schedule when an individual makes an application. If an application filed by an individual declared a terrorist is rejected by the government, they have the right to seek a review within one month after the application is rejected.

Under the amendment, the central government set up a review committee comprising a chairperson (a retired or sitting judge of a High Court) and three other members. The review committee will be empowered to order the government to delete the name of the individual from the schedule that lists "terrorists", if it considers the order to be flawed.

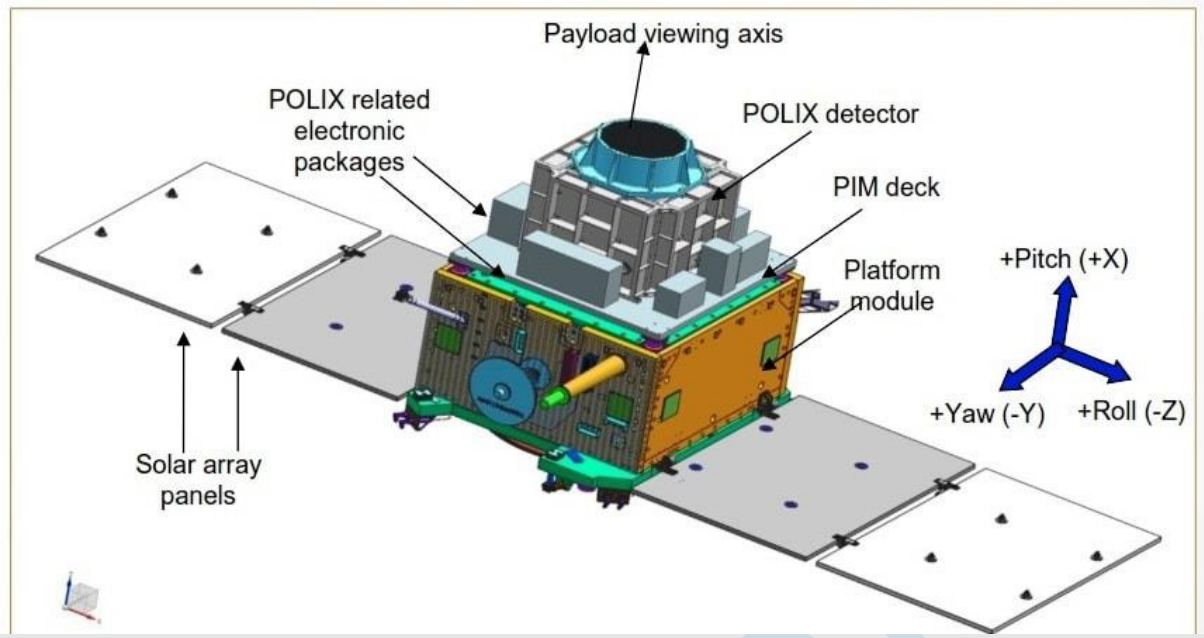
Apart from these two avenues, the individual can also move the courts challenging the government's order.

Relevance: GS Prelims & Mains Paper II; Governance
Source: The Indian Express

2. ISRO launches XPoSat: What is the mission and its significance?

Introduction

Indian Space Research Organisation (ISRO) put its first polarimetry mission X-ray Polarimeter Satellite (XPoSat) in a precise circular orbit of 650 km on January 1 morning after a 21-minute flight. XPoSat is the world's second satellite-based mission dedicated to making X-ray polarimetry measurements.



What is XPoSat?

X-ray Polarimeter Satellite (XPoSat) is India's maiden mission dedicated to analysing the polarisation of X-rays emanating from bright celestial sources in the medium frequency band.

XPoSat comprises two payloads, including Indian X-ray Polarimeter (POLIX) and X-ray Spectroscopy and Timing (XSPECT). They have been built by Raman Research Institute and UR Rao Satellite Centre, both located in Bengaluru.

The spacecraft is designated for observation from low earth orbit (~ 650 km, low inclination of ~ 6 degree).

It has an estimated mission life of about five years during which XPoSat will observe sources that emit polarised X-rays. The observations will be done when the magnetars or neutron stars (they are highly magnetic and display a wide array of X-ray activity) are in transit through the Earth's shadow, for instance, during the eclipse period.

What are the two scientific payloads onboard XPoSat?

POLIX: It is the world's first instrument designed to operate in the medium X-ray of 8 to 30 kilo electron Volt (keV) energy band. It comprises a collimator, which is the key component to filter light originating from bright sources in the field of view. Moreover, there is a scatterer consisting of four X-ray proportional counter detectors (that prevent the trapped light from escaping). It will observe a few tens of astronomical sources. It was conceived, designed, and built at RRI.

XSPECT: It is designed to conduct fast timing and high spectroscopic resolution in a soft X-ray energy band (0.8-15 keV). It will observe a variety of sources like X-ray pulsars, black hole binaries, low-magnetic field neutron stars, active galactic nuclei or

AGNs (a compact region at the centre of a galaxy that emits a significant amount of energy across the electromagnetic spectrum) and magnetars.

Why is the XPoSat mission significant?

Till now, astronomers have largely used and depended on spectroscopic, imaging and timing–based data obtained from either ground-based telescopes or satellite-based missions from the optical to the radio frequency band of the electromagnetic spectrum. Polarisation of celestial sources was done either in the optical or radio bands.

XPoSat, however, will be a game-changer and facilitate X-ray polarisation measurements possible from bright sources, that too, in the medium energy band (8-30 keV) energy range – which has never been attempted ever before.

The XPoSat team has identified several tens of sources radiating X-rays. XPoSat will observe two kinds of sources — persistent sources (targeted and known sources) and transient sources (pulsars, active galactic nuclei, magnetars).

Out in space, X-rays get polarised due to multiple causes. For example, X-rays when subject to strong magnetic fields or due to the interactions with material present around black holes. So, by studying the polarised X-rays emanating from excellent sources like magnetars, black holes and their surrounding environments, and neutron stars, scientists can probe the nature of the radiations and the multitudes of processes involved in the generation of these radiations.

POLIX will undertake important measurements like the degree and angle of polarisation of X-ray photons from the environment surrounding black holes, neutron stars, and other such cosmic entities. These two additional parameters, along with the spectrographic, timing and imaging data, will aid researchers to overall improve the present understanding of the celestial bodies and ultimately unravel some of the unknown mysteries of the Universe.

What is the polarisation of X-rays and why study it?

X-rays comprise electric and magnetic waves that are constantly in motion. Being sinusoidal waves, they do not follow a patterned direction of motion. Whereas, a polarised X-ray is both organised and has two waves vibrating in the same direction.

When magnetars or black holes emit X-rays, they encounter a wide variety of materials in the Universe. As X-rays pass through the thick cloud of materials, the electric component of the X-ray emits a photon in a changed direction, as it has now undergone scattering. In the process, the new photon has got polarised in a direction perpendicular to the plane formed between the original and scattered photon.

The polarisation measurements – angular and degree of polarisation – are believed to provide clues about the bright X-ray emitting sources the nature of these radiations and the complex process they undergo.

How does XPoSat compare with X-ray experiments or missions globally?
Missions on X-ray polarisation measurements have been a handful, the world over. Some like HX-POL and XL-Calibur have been balloon-based and short-duration experiments by NASA and collaborators.

Indian astronomers, using AstroSat – India's first astronomy-based space missions launched in September 2015 — performed timing and broadband spectroscopy of X-ray sources but no polarisation studies were performed.

The lack of development of highly sensitive and precise instruments makes missions for polarisation measurements of X-rays extremely challenging, thus fewer missions have been attempted so far.

In 2021, NASA launched Imaging X-ray Polarimetry Explorer (IXPE). It has been designed to operate and perform X-ray polarisation measurements within the soft X-ray band (2 to 8 keV energy band).

Besides complementing IXPE, XPoSat's payload POLIX will offer an expanded observational energy band, as it is designated to perform X-ray polarisation in the medium X-ray band (8 to 30keV).

Relevance: GS Prelims & Mains Paper III; S&T
Source: The Indian Express

3. Why did FIU IND act against virtual asset providers?

Why in news?
On December 28, the Financial Intelligence Unit India (FIU IND) issued show-cause notices to nine offshore virtual digital asset service providers (VDA SPs), including Binance, Kucoin, Huobi, Bitfinex and MEXC Global, among others. This was for "operating illegally" without complying with the provisions of the Prevention of Money Laundering Act, 2002 (PMLA). It has also been written to the Secretary of the Ministry of Electronics and Information Technology to block URLs of the mentioned entities.

What is the premise of the non-compliance?
In March 2023, Virtual Digital Asset Service Providers (VDA SPs) in India were brought under anti-money laundering/counter financing of terrorism regulations. They were mandated to comply with PMLA 2002, verify the identities of onboarded clients, and maintain records of their financial positions and potentially suspicious transactions.

This obligation applies to all VDA SPs operating in India irrespective of physical presence. Non-registration made entities non-compliant despite serving Indian users. To put it in perspective, the entities "though catering to a substantial part of Indian users were not getting registered and coming under the Anti Money Laundering (AML) and Counter Financing of Terrorism Network (CFT) framework". Currently, 31 VDA SPs have registered with FIU IND.

What purpose does the PMLA compliance serve?

The objective of the PMLA and its reporting obligation are to enable monitoring and tracking of financial transactions to curb money laundering and terror financing. The government has made it amply clear that it intends to enforce PMLA obligations on offshore entities if they satisfy the ingredients of the March 2023 PMLA notification on VDA SPs.

This is also in line with India's efforts through the G-20 where it has been advocating for global regulation of cryptocurrency and consequently the framework proposed by the International Monetary Fund and the Financial Stability Board to the G-20 in September 2023 is likely to be actioned in 2024.

What considerations emerge when looking to regulate VDAs?

The Bureau for International Settlements (BIS), which is the global forum for cooperation among central banks, in a report about financial stability from crypto assets in emerging economies (August 2023) observed three high-level policy options under consideration. These include an outright ban, containment and regulation. BIS observed that an outright ban may not prove enforceable. This is because of the pseudo-anonymous nature of crypto markets. There could be a possibility that regulators lose all sight of the market, further shrinking their transparency and making them less predictable. Containment would imply controlling the flows between crypto markets and traditional financial systems. However, BIS argued that the strategy would not address the vulnerabilities inherent in the crypto markets and could result in financial stability risks.

About regulation, motivation to regulate the asset varies across jurisdictions. The report holds that it must be ensured that the benefits of regulating and supervising are greater than the costs involved. Furthermore, for emerging market economies three issues are of importance, that is: defining the (regulatory) authority or entity and their scope, then the scope of regulation in terms of either activity or entity, and lastly, filling in the data gaps to understand the technology and interconnections.

Relevance: GS Prelims; Economics
Source: The Hindu