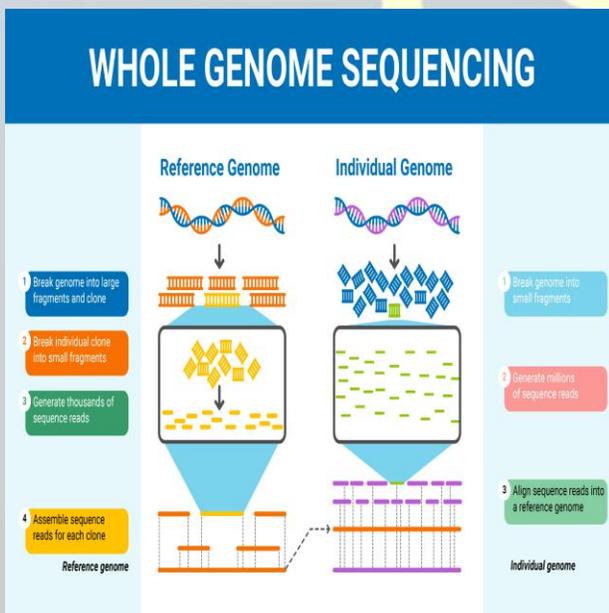
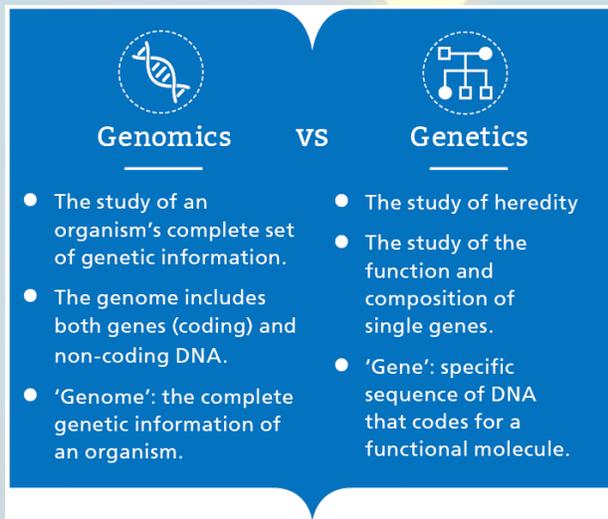
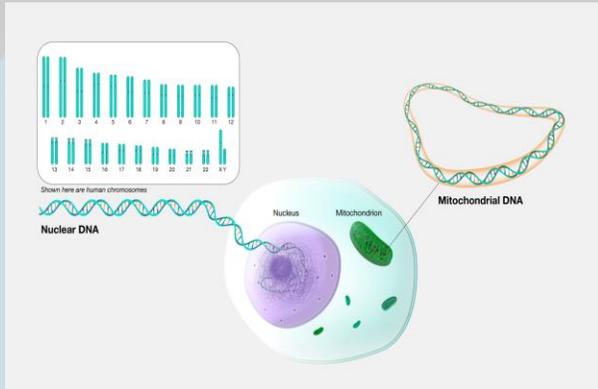


Genome sequencing AND HEALTH



- In the last two decades, the landscape of genomics and the utility of genetic information in healthcare have both undergone a revolutionary transformation, marked by the increasing affordability and accessibility of personal genomes. Today turned mainstream, offering to empower individuals with unprecedented insights into their genetic makeup.

- The lower costs associated with genome sequencing technologies particularly with advancements in next-generation sequencing- have played a pivotal role in this democratization. This accessibility has catalyzed large-scale initiatives and population-wide projects that try to harness the power of genetic data to improve healthcare.

- The convergence of technology and biology has also paved the way for more population-scale whole genome sequencing endeavours.

- Personal genome sequencing in particular can help us tailor treatments to individual genetic profiles and predict individuals' susceptibility to specific diseases

- Researchers have been analyzing the prevalence of incidental and actionable genetic information via population scale genome sequencing

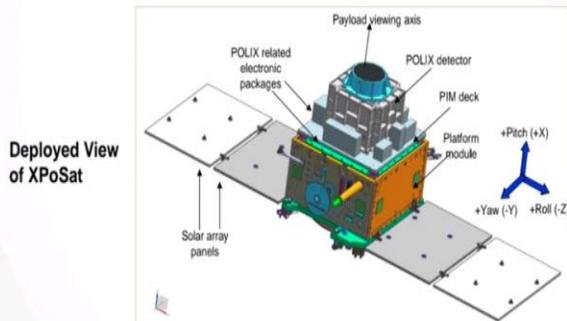
programs currently underway in many countries

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XPoSat

XPoSat Mission Objectives

- To measure polarization (degree and direction) of X-ray photons from ~50 potential celestial sources of interest in the energy band of 5-30 keV.
- Mission Life – 5 years, Platform – Modified IMS-2 Bus
- Payload – Polarimeter Instrument in X-rays (POLIX) from Raman Research Institute
- Orbit – Circular LEO (500-700 km), Inclination $\leq 30^\circ$

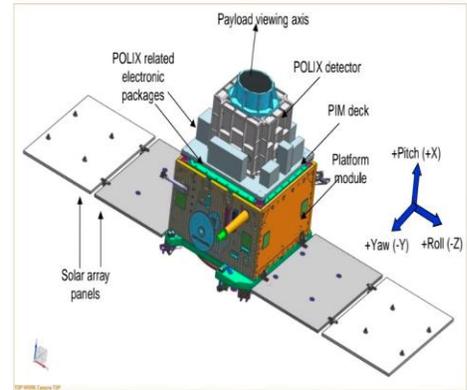


Deployed View of XPoSat

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Deployed View of XPoSat



X-ray POLarimeter SATellite (XPOSAT)

First mission devoted to X-ray polarisation studies since X-ray polarization studies of celestial objects has been minimal.

Polarimeter Instrument in X-rays (POLIX) payload being developed by Raman Research Institute (RRI).

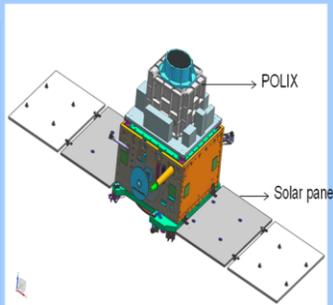
POLIX will study the degree and angle of polarization of bright X-ray sources (5-30 keV).

Modified IMS-2 bus

Pointing accuracy : 0.1 degree

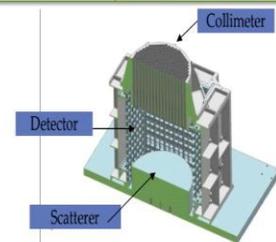
Slow rotation : 0.2 to 0.5 rpm

Low altitude orbit (~600 km) with a low inclination (< 30 degree)



XPoSat Payload specifications

Photon collection area	640 cm ²
Energy range	5-30 keV
Detectors	Proportional counters
Total weight	~125 kg
Overall dimension	~ 650 x 650 x 600 mm ³ (excluding electronics)
Data generation rate	6 Gbits per day (maximum)
Scattering element	Beryllium / Lithium
Rotation (rate)	0.2 rpm
Pointing accuracy	0.1 deg



POLIX payload detector inner view

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Mapping in news



The Hindu

Broadcasting Regulation bill

Ministry of Information and Broadcasting proposes Broadcasting Services (Regulation) Bill, 2023

- Consolidated Legal Framework for Broadcasting sector
- Content Evaluation Committees for adherence to Programme & Advertisement Code
- Broadcast Advisory Council to replace Inter-Departmental Committee
- Accessibility measures for persons with disabilities

Send feedback and comments on the Bill to : jsb-moib@gov.in

Sovereign Gold bond

SOVEREIGN GOLD BONDS SCHEME
INVEST WISELY. EARN SAFELY

Unique Features

- Bonds issued in denominations of a gram of gold and in multiple thereof
- Minimum Investment - 2 gm; Maximum investment - 500 gm
- Available in DEMAT & Paper form
- Tradable on Stock Exchange
- Earn Interest
- Tenure of Bond: 8 years with an exit option in 5th, 6th & 7th year
- Can be used as collateral for Loans
- Zero risk of Handling actual gold

Decoding the legislation

WHAT IS THE BROADCASTING BILL?

- The proposed Broadcasting Services (Regulation) Bill, 2023, seeks to directly regulate streaming platforms such as Netflix, Amazon Prime Video and Disney+Hotstar as over-the-top broadcaster, in addition to regulating terrestrial channels, radio, local cable operators, etc.
- Anybody who broadcasts news and current affairs programmes online as a "systematic business, professional or commercial activity" is liable to attract the same obligations as OTT streaming services

WHO IS EXCLUDED?

- A physical newspaper and its e-replica
 - Online users who occasionally post news are excluded. For instance, a civilian who decides to stream a riot live will not be covered
- There is no change in the status of how online news publishers are governed. If they are governed under the IT Rules, they [textual news websites] will continue to be governed here.
— a senior govt official familiar with the matter

MAIN FEATURES OF THE SOVEREIGN GOLD BOND

ISSUANCE To be issued by Reserve Bank of India on behalf of the Government	TAXATION Interest on the bonds shall be taxable as per the provision of Income Tax Act, 1961 (43 of 1961). Physical gold rules apply to capital gains tax too	KYC RULES APPLY	SALES CHANNEL Bonds will be sold through banks and designated Post Offices, as may be notified, either directly or through agents
ELIGIBILITY The bonds will be restricted for sale to resident Indian entities including individuals, HUFs, trusts, universities, charitable institutions	DENOMINATION The bonds will be denominated in multiples of grams of gold with a basic unit of 1 gram	TENOR The tenor of the bond will be for a period of 8 years with exit option from 5th year to be exercised on the interest payment dates	MAXIMUM LIMIT Not more than 500 grams per person per fiscal year (April-March). A self-declaration to this effect will be obtained
MINIMUM SIZE Minimum permissible investment will be 2 units (i.e. 2 grams of gold)			

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Key Features
The bill covers **broadcasters, cable and satellite broadcasting networks, radio, and internet broadcasting**

It defines OTT

Proposes compliance with Advertising and Programming Code

Broadcast Advisory Council for grievance redressal

Proposes penalties for code violations

Current Affairs 1st January 2024 by Saurabh Pandey

The Broadcasting Services (Regulation) Bill broadens regulation to cover OTT platforms and digital content, introducing mandatory registration and a three tier regulatory system.

- No person or broadcasting company can provide services or run a network without formal registration or intimation to the government.
- Cable and satellite operators must also gain approval to transmit programs. The Bill extends rules to internet based broadcasting services like IPTV and OTT platforms based on subscriber/viewer thresholds.
- A Content Evaluation Committee (CEC) is proposed for the certification of programs, and a self-regulatory framework involving committees and councils is outlined.
- The Bill allows government inspections without notice, and potential equipment seizures for violations, and mandates compliance within 30 days upon seizure.
- Critics fear potential censorship, its impact on free speech, and creativity, expressing concerns about excessive delegation of rulemaking and its subjective nature impacting online content creators' freedom.
- The broad scope of the Bill for traditional broadcasters, such as cable TV, and the evolving OTT space, which essentially has a different business model and content delivery mechanism, has drawn a mixed response from legal experts and advocates for digital freedom.
- Digital rights organisation Internet Freedom Foundation (IFF) has called for a cautious examination of the Bill due to the proposed codes' similarity to the Code applicable to cable TV and the increased censorship of TV programmes as a consequence.
- "This may affect the publisher's online free speech, freedom of journalistic expression and artistic creativity, & the citizen's right to access differing points of view because publishers will be compelled to only produce content which is palatable to the Union Government,".
- The group claims that exerting executive control over OTT content will lead to "over compliance and self-censorship" because platforms would aim to avoid the government's broad discretion when it comes to punishments.
- The IFF further notes that the Bill has left several provisions to be determined later by the Centre, arguing that such excessive

What are the main concerns?

delegation of rulemaking would create uncertainty for stakeholders.

The Hindu

16th finance commission

- The government on appointed former NITI Aayog Vice Chairman Arvind Panagariya Chairman of the 16th Finance Commission, which will recommend the tax revenue sharing formula between the Centre and States for the five year period beginning April 2026.

What's Fin Commission All About...

- > Finance Commission is a Constitutionally-mandated body that is to be set up every 5 years 
- > Its core responsibility is to evaluate the Centre and state's finances 
- > It has to decide the formula for sharing of taxes between the Centre & states, and also the formula for the sharing of resources among 

states, factoring in various parameters

- > The Centre provides additional terms of reference for the panel 
- > First Finance Commission was set up in 1951. There have been 15 so far 
- > Current Finance Commission's award is valid up to 2025-26 

Fresh formulation

The 16th Finance Commission will have time until Oct. 31 2025, to recommend the tax sharing math between Centre and States

- Panel will also prescribe measures to augment Consolidated Fund of a State to supplement resources of panchayats, local bodies



- An Advance Cell was set up in the Finance Ministry last November to oversee preliminary work

- Panel may review existing arrangements on financing Disaster Management initiatives

The Hindu