

United Nations/ Thailand Workshop on Space Law

**November 16-19, 2010
Bangkok, Thailand**

National Legal and Policy Frameworks : Indian Context

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Outline

- 1. Goals and objectives of Indian space programme - Constitutional provisions and administrative structure - Glimpse of the wide range of space activities**
- 2. India's accession to UN Treaties on space law - Prevailing constitutional provisions to enable the implementation of treaty obligations- Practices followed in outer space activities with regard to treaty obligations**
- 3. Supportive legal framework of the existing policies for the conduct of space activities.**
- 4. Conclusion**

Indian Space Programme



Reaching out - Touching lives.....



“ THERE ARE SOME WHO QUESTION THE RELEVANCE OF SPACE ACTIVITIES IN A DEVELOPING NATION

.....IF WE ARE TO PLAY A MEANINGFUL ROLE NATIONALLY, AND IN THE COMITY OF NATIONS, WE MUST BE SECOND TO NONE IN THE APPLICATION OF ADVANCED TECHNOLOGIES TO THE REAL PROBLEMS OF MAN AND SOCIETY.”

THUMBA

First Rocket Launch : 21st Nov. 1963

Objectives of Space programme

... as Stated in the Introduction to the Decade Plans 1970-80

“The principal objectives of the space programme in India are to develop indigenous competence in designing and building sophisticated hardware involved in space technology including rockets and satellites for scientific research and practical applications, the use of these systems for providing point to point communications and National TV hook up through a direct broadcast synchronous satellite and the application of satellites for meteorology and for remote sensing of earth resources ”

Citizen's Charter

- **OUR VISION**

- The Department of Space has the primary objective of promoting development and application of space science and technology to assist in all-round development of the nation.

- **OUR CLIENTS**

- User Ministries/Departments of the Central Government viz., Ministry of Information and Broadcasting, Department of Telecommunications, India Meteorological Department
- Remote Sensing Agencies in State Governments and Union Territories
- Quasi Government Organisations, NGOs and the Private Sector for developmental purposes through satellite imaging.
- Educational institutions in promotion of research and development in space science and technology.

Citizen's Charter ... *Contd.*

- **OUR ACTIVITIES**

- The Department of Space has evolved the following programmes with the objective of promoting & developing application of space science and space technology:
- Launch Vehicle programme having indigenous capability for launching spacecrafts.
- INSAT Programme for telecommunications, broadcasting, meteorology, development of education etc.
- Remote Sensing Programme for application of satellite imagery for various developmental purposes.
- Research and Development in Space Sciences and Technology for serving the end of applying them for national development.

Allocation of Business Rules

- **THE GOVERNMENT OF INDIA (ALLOCATION OF BUSINESS) RULES**

In exercise of the powers conferred by clause (3) of article 77 of the Constitution and in super session of all previous rules and orders on the subject the President hereby makes the following rules for the allocation of the business of the Government of India.

1. Short Title - These rules may be called the Government of India (Allocation of Business) Rules, 1961.

2. Allocation of Business - The business of the Government of India shall be transacted in the Ministries, Departments, Secretariats and Offices specified in the First Schedule to these rules (all which are hereinafter referred to as "departments").

Allocation of Business Rules :

Department of Space ... *Excerpts*

1. Space Commission and all matters relating thereto.
2. All matters relating to Space Science, Space Technology and Space Applications, including -
 - (a) research (including fundamental research) in matters connected with space and the development of its uses;
 - (b) all matters connected with Space Technology;
 - (c) all matters connected with Space Applications; and
 - (d) all activities connected with the development and use of outer Space, including -
 - (i) projects and industries connected with the utilisation of outer Space including commercial exploitation of Space;
 - (ii) Establishment, procurement and use of Space based systems;
 - (iii) the design, manufacture and launching of Rockets and Satellites; and
 - (iv) work connected with Space Applications.

Allocation of Business Rules ...*Excerpts*

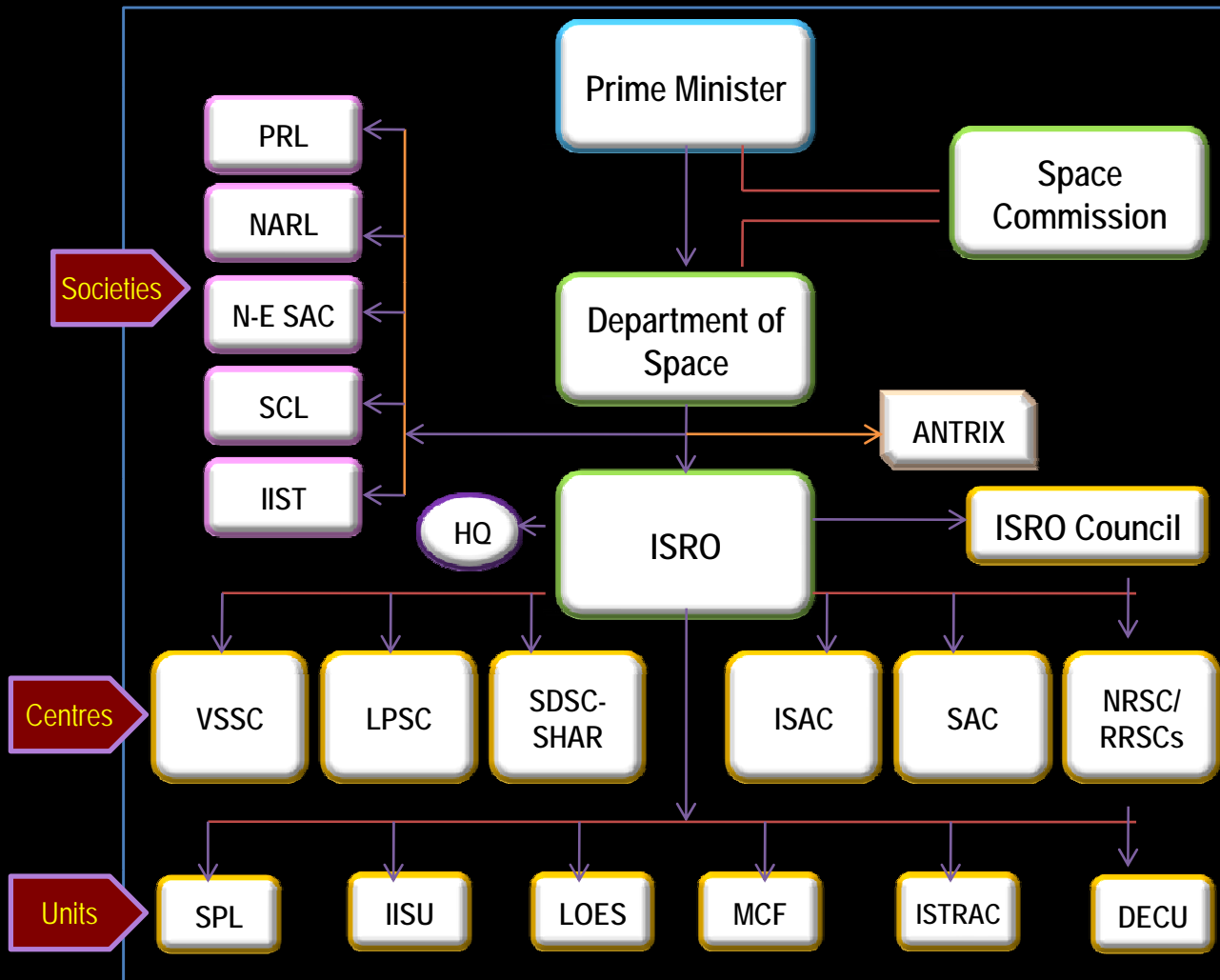
Contd.,

3. Financial Assistance for furtherance of research and study in Space Science, Space Technology and Space Applications and for building up adequate trained manpower for the development of the Space programme including -
 - (a) assistance to institutions and associations engaged in scientific work and to Universities for advanced study and research in Space Science, Space Technology and Space Applications;
 - (b) Grant of scholarships to students

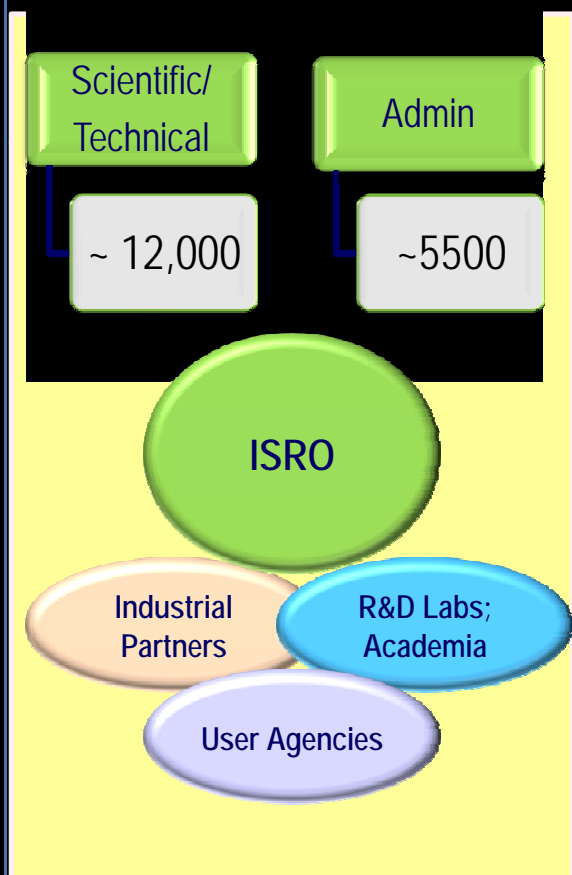
4. International relations in matters connected with Space, including-
 - (a) matters relating to Space in the United Nations specialised agencies and in relations with other countries; and
 - (b) correspondence with Universities and other educational institutions abroad in connection with foreign scholarships and the training of Indian scientists.



The Organisation



Human Capital



Dimensions of Indian Space Programme

Programmatic Envelope

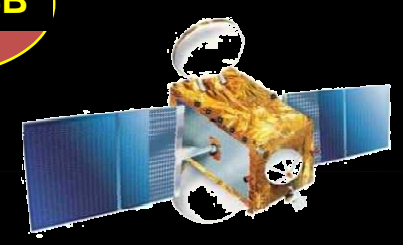
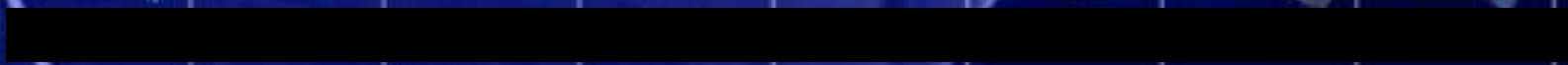
- Indian Remote Sensing (ISR) Satellite Programme
- Indian National Satellite Programme (INSAT)
- Launch Vehicle Programme – PSLV, GSLV

Features of Indian Space Programme

- Application Oriented User friendly Programme
- Self Reliance in technology developments
- End-to-End capability
- Industry- Academia Linkages
- Commercialisation of spare capacity



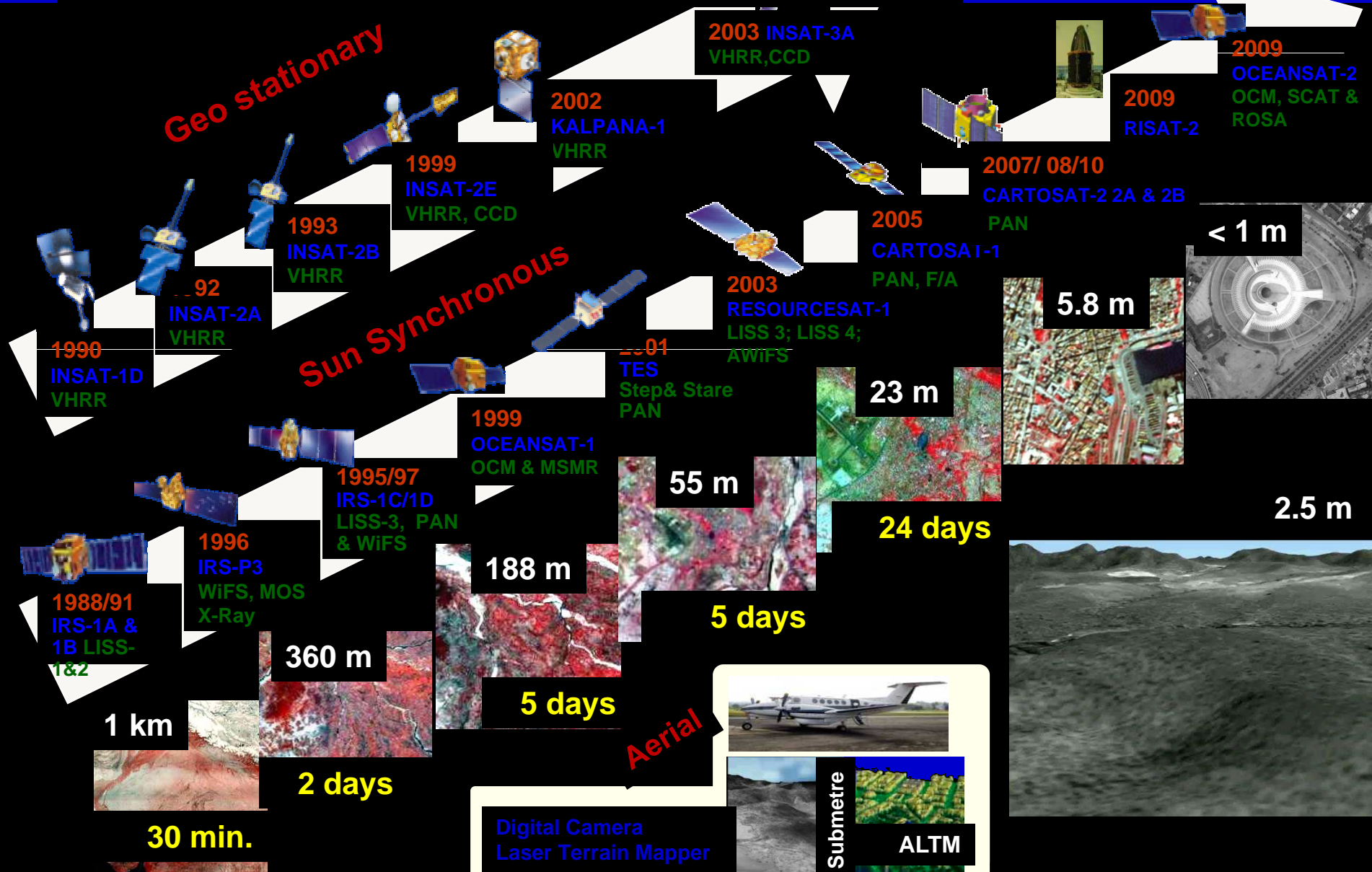
India's Satellite Communication Infrastructure



INSAT Capacity: 194 Transponders (As on Sep, 2010)



Indian Imaging Capability



A Valuable infrastructure in Space for monitoring NR & Environment



EO Applications for Societal Outreach

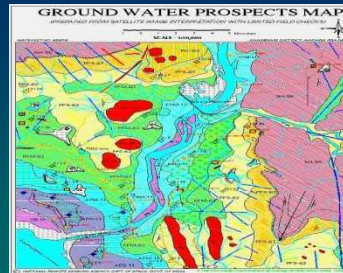
Agriculture

- National Wheat forecast - 27.25 Mha & 75.90 Mt
- Kharif Rice forecast - 35.66 Mha & 76.82 Mt



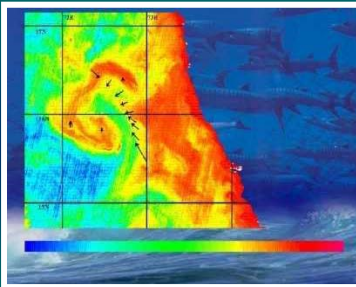
Drinking Water

- Prospective groundwater zones
- >200,000 wells drilled, with >90% success
- 10 States covered; 17 more taken up



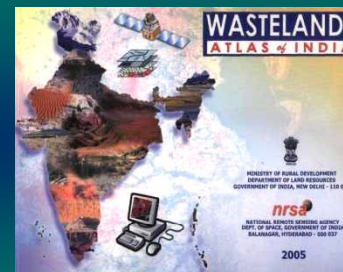
Fisheries

- Potential Fisheries Zone (PFZ) Forecast to > 300 Stations
- ~ 30,000 Users
- Enhanced fish catch with less effort



Wasteland mapping

- 55.27 Mha (17.45%) - 2003 estimates
- Desertification & land degradation assessment



Watershed Dev - Sujala

- 854 Micro-watersheds in Karnataka
- Support to Rain-fed area development
- World Bank to replicate in Sri Lanka, Africa



Monitoring Irrigated Commands

- Assessment of irrigation potential created using high-res data
- 5.4 Mha in 18 States



... supporting activities under many National Developmental missions



Launch Facility & Launchers

Early vehicles



Two Launch Pads
Sriharikota



Operational



PSLV

294 tonnes

1.3 in SSO/ 1.05 in GTO

Flights: 17
(94 -10)

Operational



GSLV

414 tonnes

2 in GTO

Flights: 6
(2001-10)

New Generation



GSLV-MkIII

629 tonnes

4 in GTO / 10 in LEO

2012

PSLV	GSLV	GSLV-MkIII
294 tonnes	414 tonnes	629 tonnes
1.3 in SSO/ 1.05 in GTO	2 in GTO	4 in GTO / 10 in LEO
Flights: 17 (94 -10)	Flights: 6 (2001-10)	2012

India's Accession to United Nations Treaties on Space Law

UN Treaty	Signed / Ratified	Indian Participation
Outer Space Treaty 1967	Ratified	March 03, 1967 (S) January 18, 1982 (R)
Rescue Agreement	Ratified	July 09, 1979
Liability Convention	Ratified	July 09, 1979
Registration Convention	Ratified	Jan 18, 1982
Moon Agreement	Signed	Jan 18, 1982

Compliance to Treaty Obligations : Constitutional Provisions

Article – 51: Promotion of international peace and security

The State shall endeavour to -

- (a) promote international peace and security;
- (b) maintain just and honourable relations between nations;
- (c) foster respect for international law and treaty obligations in the dealings of organised peoples with one another; and encourage settlement of international disputes by arbitration.

Compliance to Treaty Obligations :

Constitutional Provisions ... contd.

Article – 253: Legislation for giving effect to International Agreements.

Notwithstanding anything in the foregoing provisions of this Chapter, Parliament has power to make any law for the whole or any part of the territory of India for implementing any treaty, agreement or convention with any other country or countries or any decision made at any international conference, association or other body.

Exceptions to Article 51:

... If treaty obligation provides for payment to a foreign entity, which must be withdrawn from the Consolidated Fund of India;

Compliance to Treaty Obligations : Constitutional Provisions ... contd.

Article – 53: Executive power of the Union.-

- (1) The executive power of the Union shall be vested in the President and shall be exercised by him either directly or through officers subordinate to him in accordance with this Constitution.**

Article 73. (1) Subject to the provisions of this Constitution, the executive power of the Union shall extend—

- (a) to the matters with respect to which Parliament has power to make laws; and**
- (b) to the exercise of such rights, authority and jurisdiction as are exercisable by the Government of India by virtue of any treaty or agreement**

Seventh Schedule- List- I Union List- Entry 14

- 14. Entering into treaties and agreements with foreign countries and implementing of treaties, agreements and conventions.**

Registration of Space Objects

- India has acceded to 'United Nations' Convention on Registration of Space objects, 1976' on January 18, 1982.
- Maintaining National Registry on Space Objects (Art. II)
- Has been registering details on space objects launched into outer space, to Secretary General, of the United Nations through Diplomatic channels (Art. IV)
- Registrations done on –
 - Functional space objects
 - Non-functional space objects – upper stage of launch vehicles, Dual launch adopters
 - Updatations on re-entry of space objects into atmosphere
 - Updatations on de-orbiting of geostationary satellites
 - Registration of piggy-back satellites to be done by the customers as per the launch service agreements

Debris Mitigation

- **India is an active member of Inter Agency Space Debris Coordination Committee (IADC) – *Hosted the 28th IADC Meeting in India during 9-12, March 2010.***
- **Contributions in evolving Space Debris Mitigation guidelines in IADC and Science & Technical Sub-Committee of UNCOPUOS**
- **Voluntary adoption of UN Space Debris Mitigation Guidelines**
- **Sharing of information & technology related to mitigation measures**

Debris Mitigation ... Contd.,

- **Implemented appropriate mechanisms in design and operational phases of all launch vehicles.**
 - **PSLV equipped with propellant venting system**
 - **GSLV equipped with a passivation system in its Cryo Upper Stage**
 - **Adequate margins of fuels for de-orbiting at end of useful mission life**
 - **Collision Avoidance Analyses (COLA), Space Object Proximity Awareness (SOPA)**

International Dimensions

- **International Cooperation:**
 - **Bilateral Agreements with 32 Nations**
- **UN Fora:**
 - **COPUOS: Contribution to evolution of principles and treaties of international space law**
 - **Active Participations in Sub-Committees (S&T and Legal)**
- **International Fora:**
 - **18 Organisations; 6 Regional Organisations**
 - **IAA, IAF, IISL , International Charter on Space & Major Disaster...**
 - **CEOS, GEOSS, APRSAF**
 - **IADC, UNIDROIT Space Assets Protocol**

Legal Framework of Existing Policies

- **Allocation of Business Rules – Govt. of India**
- **Programmes : Projects : Organisation**
- **Reliability, Safety, Human Resources**
- **Effective complementary use of existing national legislations, contractual procedures and national co-ordination mechanisms**
- **Policy for TT & Spin-off Promotion**
- **Space Industry Promotion – Industry Participation Policy**
- **International Cooperation**

Legal Framework of Existing Policies

- **Satellite Communications – SATCOM Policy**
 - Use of INSAT capacity by non-governmental agencies
 - Establishment and operation of Indian Satellite Systems – upto 74 % FDI
 - Use of foreign satellites for SatCom Services.
- **Remote Sensing Data Policy (RSDP)**
 - RS Data – ‘Public Good Concept’
 - Spatial Resolution criterion
 - High Resolution Data –
 - Sensitivity checks and masking
 - High Resolution Clearance Committee

Legal Framework of Existing Policies ... contd

- **Other Related Policies:**
 - **Mapping Policy of India**
 - **Legislation for Non-Proliferation of Weapons of Mass Destruction and their Delivery Systems (WMD Act 2005)**
 - **EXIM Policy - Regulations on Export of Dual-Use Items (SCOMET) – Customs Act, 1957**
 - **Acts on Intellectual Property Rights – Patents, Copyrights, Trademarks ...**
 - **Explosives Act, 1884**
 - **Foreign Direct Investment Policy**
 - **Environment Protection Act, 1986**
 - **Information Technology Act, 2000**

Conclusion

- India, with its goal of bringing the benefits of space technology for national development has become one of the leading space faring nations of the world. This has been possible because of a well thought out strategy and plan of implementation aided by appropriate policies and strong government support.
- With the envisaged growth of space technology and applications in the country along with private sector participation and commercialisation activities, the strengthening of legal regime should be an **enabler**, consistent with the deep commitment of the space activities to the nation, as an instrument for development.
- Thus a comprehensive National space law, which has to be in harmony with international space law, should be **logically evolved to primarily support national interests without prejudice to the international obligations.**



Thank You