

**Thales Alenia Space Industry study: Influence of
institutional actors (space agencies, ministries of defense,
etc.) on the strategy and performance of Indian space
companies**

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Influence of Institutional actors on the strategy and performance of Indian Space Companies

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Research Area: “Influence of Institutional actors on the strategy and performance of space companies”, Thales Alenia

Research Question: In what way the institutional actors influence the strategy and performance of the Indian Space companies.

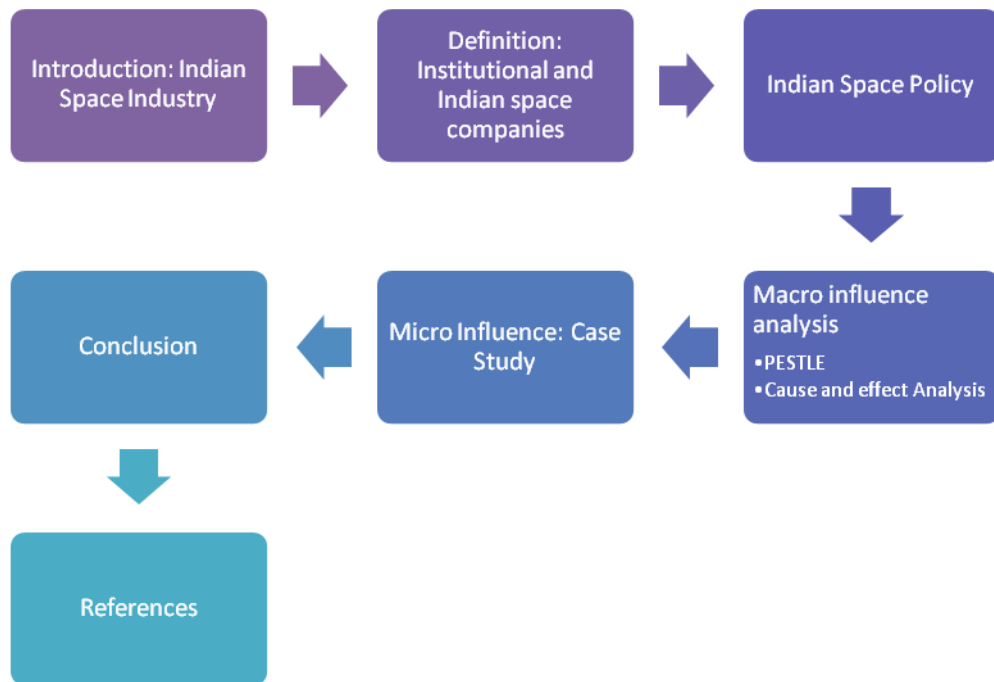
1. Objective

It is of tremendous importance for an industry to know its present and future strategies, in order to have a sustainable ecosystem. The objective of the study is to categorize institutional actors and Indian Space companies, analyse the macro and micro influence factors of institutional actors on the Indian Space companies, derive inferences and provide recommendations for the institutional actors and Indian space companies.

2. Introduction

The Indian Space sector is majorly driven by the government with the Department of Space investing cross-sector in upstream, downstream and commercialisation of space assets. The private industry is currently limited to being vendors of products and services within this environment with all the turnkey aspects of deliverables performed by government institutions. The fundamental motivation to develop a strong private space industry ecosystem relates to the inherent advantages the country has over others in the availability of skilled workforce at low cost, a stable and business-friendly government, positive investor climate, and low cost of operations. With the utilization mind-set of above factors, a number of private players are trying to develop their space assets and enter into the mainstream market.

3. Research Structure



4. Institutional actors and Indian Space Companies

In order to study the effect of institutional actors on Indian Space companies, it is very important to develop a framework to categorize an organization or an agency as Institutional actor or an Indian Space company. The framework is as follows:

Institutional Actors	Indian Space Companies
They are rule/policy Makers	They are rule takers
Possess more financial and resource slackness	Depends on the size of the company
Focussed more towards social responsibilities and Political Prestige	Focussed on Revenue Generation
Organizational hindrances hence, slow project output (time intensive).	Accelerated project development, keeping the others constraints as same.
Overhead costs are high	Efficient Cost Management

4.1 Indian Space Industry, Institutional Actors and its Structure

Based on the above framework, the organization that fits in the definition of Institutional actor is Indian Space Research Organization (ISRO)/ Department of Space (DOS) [1]. Its major products and customers are listed below:

Companies	Started In	Product	Customers
ISRO, DOS	1969	Remote Sensing Satellites	Government of India
		Communication satellites	Telecom & D2H companies
		PSLV rocket	USA, Europe, South East Asia
		GSLV rocket	Indian satellites
		Reusable Launch vehicle	Development stage

The structure of the Indian Institutional actors in Space Industry and its entities are shown in the chart below:

As detailed in the Institutional actors' structure, Prime Minister, Government of India, heads the Department of Space. The Space commission is headed by ISRO Chairman and is responsible for framing Indian Space policy. Antrix is the Department of Space's commercial wing and hence is responsible for generative revenues from ISRO products. All the other entities in the Structure are responsible for designing and manufacturing space systems.

4.2 Indian Space companies

It is very important to understand the complete value chain of the space Industry because the Indian Space companies exist on each level of the chain. The space industry value chain is shown in the chart below:

The major Indian Space companies are as follows:

Companies	Started In	Product	websites
Team Indus	2011	Moon Lander & rover	For Google lunar X Prize (http://www.teamindus.in)
Dhruv Space	2012	Small Satellites	Dhruvaspace.com
Earth2Orbit	2007	Launch advisory, Satellite services and consulting	Earth2orbit.com
Astrome	2015	High Speed Internet from Satellite	Astrome.co
ARDL	2016	CanSat, sounding rocket payload	Ardl.org
Component level suppliers		ICs, Solar cells	
System level Suppliers		Space craft structure and rocket heat shield and etc.	Like: BHEL, HAL, L&T
Service Providers		Telecom, D2H, weather forecasting companies	
Direct Users		Government agencies	DGCA, Planning commission etc.

5. Analysis of Indian Space Policy

Over the past 50 years, India has made significant progress in space technology – achieving projects, programs, missions and developing new applications. India has emerged as a serious player in the national, international, commercial space market. As Indian Space agency, i.e. ISRO, is planning to take a considerable step in developing a space ecosystem involving private players, it becomes of immense importance to address the following services and manufacturing in Indian Space policy:

- Launch services
- Satellite telecommunication
- Satellite broadcasting
- Earth observation services (Remote sensing)
- Satellite data processing and distribution
- Navigational systems
- Satellite and Launch vehicle manufacturing
- Space parts and subsystem manufacturing.
- Intellectual property rights

The Indian Space Research Organization [1] has taken up considerable think-tank activities to own a two-pronged strategy of protective national area interests and at same time getting ready for large-scale industrial demands.

The Indian Space Research Organization has taken up the Satellite Communication Policy and adopted by Indian government in 1999 and the Remote Sensing Data Policy was taken up and adopted by Indian government in 2001 (amended in 2011).

India has a comprehensive remote sensing and Satcom national policies, yet no national law. Indian space activities are regulated and guided by individual policies and relevant policy guidelines are:

- Satcom Policy
- Remote Sensing Data Policy

Satcom Policy:

The Satcom Policy [2], [3], [4], [5] was supported then technical developments in satellite technology in addition as within the associated communications technologies. The main aim of Satcom policy was to develop a satellite communications regime for India that catered to national and industrial needs.

The norms, guidelines and procedures for implementation of the policy framework for satellite communications in India as approved by Government in 2000 (Refer Appendix).

The main objectives of Satcom policy are:

- Build national capabilities in satellite communications and sustained utilization of Indian space capabilities.
- Use INSAT systems for social applications development.
- Promote privatization of satellite communications in India and attract the foreign investments.

The Satcom Policy would give more benefits such as DTH business, Vsat services, education across the country, telemedicine, capacity leasing and a growth in Indian ground equipment manufacturing. The Satcom policy should help position joint venture for communication satellite ventures and also bring new value-added services.

The Satcom Policy has given preference to Indian Satellite Systems while giving service licenses to ensure the “protective cover” for INSAT. However, the Satcom Policy does not prohibit the use of foreign satellite systems. The Satcom policy is an orbit-spectrum situation for Indian interests including needs of private satellite systems. But, there are not many such slots available globally for use and coordination has become complex and inordinately time consuming.

Remote Sensing Data Policy:

The Remote Sensing Data Policy [2], [3], [4], [6] defines the Indian regulations and governs how satellite images are to be acquired and distributed openly up to 1m images to users. This policy includes the concept of “regulation” to address the dissemination for 1m images.

The earlier “framework” for a comprehensive imaging policy included as a “public good” and the concept of national commitment to continued imaging program through IRS. Later, this policy added the concept of “one window” access to any image of Indian or foreign satellite. Another concept of “regulatory use-determination” whereby images up to 5.8m would be “available on non-discriminatory basis” but images better than 5.8m would be “regulated” for private sector users on case-by-case basis. This policy another major aspect – images would be screened to obliterate some geographic regions so that such “map-erasing” methods also are applied to images. This policy required foreign satellite images to be routed through the national agency. However, few private players have emerged considering licensing applications for acquiring and distributing foreign satellite images in India.

Inferences

- The space policies are important to attract foreign aerospace companies including OEMs and companies to set up operations in India and exchange of knowledge. These leads to rapid growth of Indian space industry and drives the technological capabilities of Indian industry.
- The Department of Space is the nodal point for operating remote sensing satellites, acquiring and distribution of the image data.
- An opportunity exists for the private players as satellite operators and service providers, in remote sensing satellite data business, but the major barrier is obtaining permissions from the government.
- The policy was amended in 2011 and even after 6 years, in 2017, no major remote sensing satellite operator or processed data providing company has surfaced.

Recommendation

- The Indian space policies are in place to boost the space sector, but there are concerns on their implementation. The Government of India will have to focus on fast and more effective implementation plans such as offset policy and IP protection regulations.
- The permission process for the space companies must be steam-lined and accelerated.
- The policy themselves are clear and self-explanatory and the clearances can be obtained at a single point, however the implementation could be speedier.

6. Categorization of Influences by Institutional Actors

The influences of Institutional actors on Indian Space Companies are categorized as follows:

- Macro Influence factors: To study the macro factors, a PESTLE analysis of Indian Institutional actors are carried out. The PESTLE analysis is followed by Cause and effect analysis. The Cause and effect analysis helps in identifying the effects on Indian Space companies due to Institutional actors’ policies on the dimensions of macro factors.
- Micro Influence factors: To study the micro factors, a case study on Team Indus is performed, in order to understand the effects on a new space start-up company.

7. PESTLE Analysis of Institutional Actors

The PESTLE analysis on Institutional actors', including Government of India, is as follows [7]:

Political	Economic	Social	Technological	Legal	Environmental
Stable government & Strong leadership	Eased banking interest rates	Skilled Labour development in Space Industry (IIST)	High quality tech work	Restrictions on space tech exports	Competition low in market currently
Political Prestige	Investor friendly climate	High social mobility	Good R&D	DOS is the regulatory body	Investors averse to financing non IT sector
Business friendly policies	Lower inflation		Moderately quick tech transfer	Lot of paperwork for licensing	Weak environmental laws
Open to Foreign development investments	Low cost of operations		Specifications are controlled by ISRO.	No laws for business protection	
Manufacturing thrust	Low unemployment in organised sector				
Progressive growth via private industry					

8. Cause and Effect Analysis

Influence Dimensions	Cause by Institutional Actors	Effect on players of Indian Space companies
Political	Detailed in PESTLE analysis	Favourable for production ramp-up and new entrants. Hinders the manufacturing of products with Political Prestige, like Chandrayaan.
Economic	Eased bank interest rates. Investor friendly climate.	As we move down the space industry value chain, it becomes more cost intensive for the industries. Hence, more favourable for part suppliers.
Social	Focus on utilizing demographics and generate more skilled work force.	Low cost skilled manpower reduces the overall cost of the production and services.

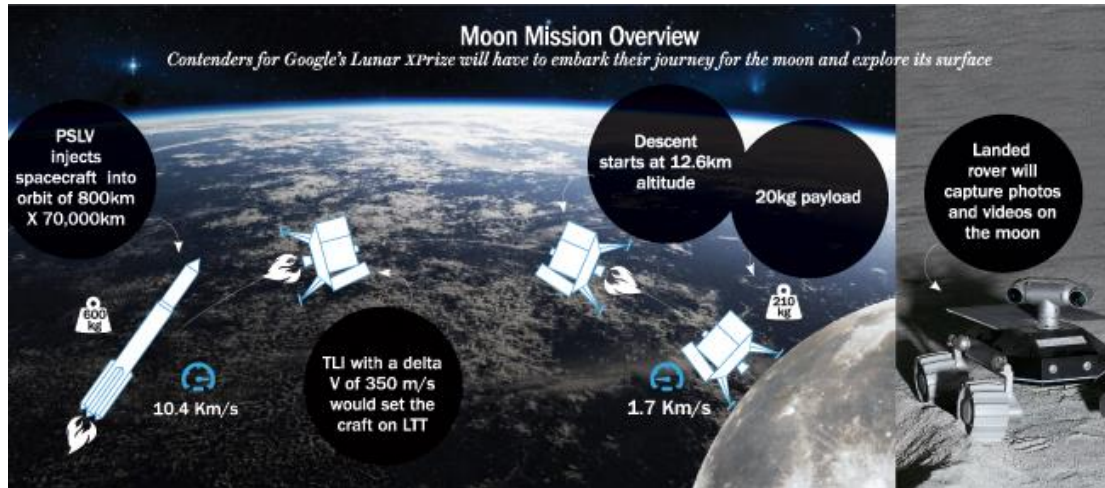
Technological	Focus on technology transfer and vendor development. Design and Specifications are controlled by ISRO.	Industry must look into the long term relation with ISRO and focus on accelerating the understanding of the system and process. The design control by ISRO hinders the companies' innovation.
Legal	Restriction on space related exports. No detailed framework for frequency allocations and data distribution.	Part Suppliers: Reduces the industry's interest as the production volume is low. Dependence on ISRO is high. Service Providers: Lack of framework and long permission processes hinders the evolution of service industry.
Environmental	No strict/detailed Environmental laws of International standards. No step to create competition.	Future amendments may force industry to implement process change costing huge investments. This increases the risk.

9. Inferences from PESTLE and Cause and effect analysis

- The present political scenario in India, favours Indian space companies, i.e. part suppliers, OEMs and new entrants. However, the government controls and restricts the manufacturing and sale of the space products which are of political prestige and national security.
- There is push by the Institutional actors to transfer the technologies to the Indian space companies but the design specifications are controlled by ISRO. This has two implications:
 - The dependence on ISRO for Sales and revenue increases and
 - The companies cannot innovate in order to reduce cost.
- The Institutional actors' focus of generating skilled manpower in the Space Sector by starting an Institution, i.e. Indian Institute of Space Science and Technology, is a favourable move for Indian space companies.
- The restriction on the international sale of space products and lack of laws for the space companies have resulted in the slow growth of the Space ecosystem in India. This makes it difficult for the investors to invest in the space sector.

10. Case Study of an Indian Space Company: Team Indus

Introduction: Team Indus, a private company founded in 2011 and located in Bangalore, India, is the one and only Indian entrant into the Google Lunar X-Prize, the international competition to land a private spacecraft on the moon. [9]



The team is led by Rahul Narayan, a Delhi-based IT professional. The team of professionals from various backgrounds in science, technology, finance and media is the only Indian team leading the charge of India to win the Google Lunar X Prize mission announced in year 2007. The mission often referred to as "Moon 2.0" is a challenge that calls for participating teams to design and land a robot on the Moon. The Robot is required to travel more than 500 meters on the lunar surface and send feedback to earth. The deadline of the competition is December 31, 2017. The Indian entrant - TeamIndus will be competing against 29 teams from 17 countries to win the US\$20 million grand prize and additional prize worth US\$5 million. [10]

Housed at their Aryabhata Block office in Bangalore, Team Indus is hard at work to win Google's daunting target — to land a rover on our nearest neighbor in space. If it does, as a contender in the \$20-million Google Lunar XPrize (GLXP), it will be the first privately-funded organization in the world to do so. So far, only three countries have managed this feat — The US during the Apollo Missions in the late 1960s, the Soviets in the 1970s, and China recently in 2013. Of course, the Indian Space Research Organization (Isro) has the Chandrayaan II mission scheduled for December 2017 or early 2018. The former is the deadline for Team Indus too. [11]

LEADERSHIP TEAM

CO-FOUNDERS

Rahul Narayan

- Founder and CEO, TeamIndus Fleet Commander—early 2011

Julius Amrit

- Co-founder, TeamIndus Jedi Master (Investment)—association since 2011, supported from outside till 2012

Dilip Chabria

- Co-founder, TeamIndus Jedi Master (Business Development)—association since 2011, supported from outside till 2012

TOP 5 INVESTORS

(In private capacity)

Nandan Nilekani

- Infosys Ltd co-founder and Aadhaar architect

Rajiv Mody

- Chairman and managing director and CEO of Sasken Communication Technologies

Subrata Mitra

- Partner at Accel Partners, India

Shekhar Kirani

- Partner at Accel Partners, India

Sharad Sharma

- Co-founder of iSpirit

LIST OF STAR WARS-MODELLED DESIGNATIONS AT TEAMINDUS

(In descending hierarchical order)

Fleet Commander

Jedi Master

Jedi Commander

Jedi Knights

Jedi Trooper

Skywalker

Ninja

Santosh Sharma/Mint

OTHERS

(Excluding the co-founders)

Sheelika Ravishankar

- TeamIndus Jedi Master (Marketing and People Strategy)—joined in 2013

Dhruv Batra

- TeamIndus Jedi Master (Program Management)—joined in 2013

Ramnath Babu

- TeamIndus Jedi Master (Operations)—joined in 2013

Sridhar R.

- TeamIndus Jedi Master (Sales)—joined in 2013

Vivek Raghavan

- TeamIndus Jedi Master (Technology)—joined the board in 2015, and came in as a member of the leadership team in 2016

Sameer Joshi

- TeamIndus Jedi Master (Special Projects)—joined in 2013

AT A GLANCE

The **\$30 mn** Google Lunar XPRIZE is for privately-funded teams.

Grand prize: **\$20 mn**; Second place: **\$5 mn**; Bonus prizes: **\$5 mn**

The project is estimated to cost TeamIndus **\$65-70 mn**

TeamIndus has raised only about **\$6-7 mn** till date.

16 teams are in still in the competition till date but only three teams have secured launch contracts.

TeamIndus is in talks with **Isro** for a **PSLV** launch contract.

TeamIndus has filed **5** patents till date.

Of the **100-odd** employees of TeamIndus, **14** are women.

Source: Company

Micro Influence Analysis of the Stakeholders (ISRO & Investors) on TeamIndus:

➤ National Prestige & Future prospects:

Can the Moon become the first outpost of an interplanetary species of humans? Can Helium 3 on the Moon be the solution to Earth's energy needs? The answer is yes. Moon will be the future in ways unimagined in science fiction. Humans haven't explored the Moon nearly enough to expand the possibilities for furthering knowledge and making it happen. It is about time. For us in India, home to one in every sixth human, reaching the Moon before the world would be a moment of inspiration like no other and a showcase of what a billion minds can do together [10].

Thus the main motivating factor for Team Indus to enter the domain of Space Business was the fact that it will be the only Private Indian Space Company to land a rover on the moon.

➤ ISRO's Influence on TeamIndus:

TeamIndus Head Rahul Narayan vividly recalls asking K Kasturirangan (Former ISRO Chief from 1994-2003 and member Planning Commission) why Isro would be interested in the project of TeamIndus. He recalls Kasturirangan saying: “*You (TeamIndus) are the outcome of Isro. Bengaluru is a tech town because of what Isro does. Hence, Isro should be proud of what you're doing simply because this is the first time that you are coming up with an end-to-end machine*” [11]. Currently 12 retired ISRO Engineers & Scientists with vast experience & knowledge are part of TeamIndus.

Team Indus contracted a PSLV-XL, an expendable launch system of Indian Space Research Organisation (ISRO) for launch. In November 2016, they signed a deal with Antrix Corporation, the commercial arm of ISRO for a undisclosed amount, to provide them a launch on 28 December 2017. Later in December 2016, the GLXP confirmed launch contract of Team Indus making them the fourth team to do so. ISRO have made it clear that they would ferry Team Indus only if it is worth it. The final version of the rover will be tested by ISRO and lastly at the Sriharikota launch centre. [9]

Sl No	Key Influence of ISRO	Impact upon TeamIndus	Affect on the strategy & Performance of TeamIndus
1	Appreciation & Involvement of K Kasturirangan, former Head of ISRO	Introduction of TeamIndus to ISRO leading to induction of Advisors (12 retired ISRO Scientists who gave them confidence about reaching the moon from the earth, and helped TeamIndus about engineering and legal compliance)[11]	Due to the active involvement of ISRO , TeamIndus which started with almost ZERO background and experience in Aerospace, today has a manpower of 100+ engineers working on the Moon-Mission and are aiming to build satellites in a cost efficient manner.[11]
2	Signing of an official deal with Antrix Corporation , the commercial arm of ISRO and TeamIndus in November 2016 for a undisclosed amount, to provide TeamIndus a launch on 28 December 2017. [9]	Amongst all teams of GLXP only TeamIndus have been able to contract a rocket which has been to moon previously, two of four competitors of Team Indus have their rockets in development stage. [9]	Getting a launch slot from ISRO has led TeamIndus to sell the launch space (a sort of launch-share option).(Refer Picture TeamIndus Launch-Share). Diversification of its Business. [9][12] Future after the Contest [8]

TeamIndus Launch Share :

Passengers with launch reservations [edit]

Name	Agency	Mass	Notes
ECA	Team Indus	7 kgs	Team Indus's rover for contending GLXP
Moonraker	Team Hakuto	4kgs	Team Hakuto's rover for contending GLXP
LUCI	Indian Institute of Astrophysics	1 kg	Lunar Ultraviolet Cosmic Imager (LUCI) primary science goals are to study bright UV sources and search for transients in the near-UV (200 - 300 nm) domain .
Kolkata Probe	Indian Centre for Space Physics	4 kgs	The Kolkata probe will include an X-ray detector and four computers that will study outer space.
Lab2Moon Experiments	Students younger than 25	250g each	2 confirmed ,6 more could be added
Tiranga			Would be hoisted on 26 January 2018 on occasion of Indian Republic Day
A box with Name Plaques	Team Indus		Anyone can get their name on the moon at a nominal cost

Source : https://en.wikipedia.org/wiki/Team_Indus

Other Non-Institutional Actors helping TeamIndus:

Larsen & Toubro, which has previously worked with Isro, is helping them with the design and fabrication of the lander. Saskaen Communication Technologies has lent them office space, while Tata Communications is helping them with its communication technology. “Tata Communication’s long-range communication expertise and low latency connectivity between ground tracking stations is not only mission-critical but a huge contributor to the future of space exploration,” says Rahul Narayan, team leader. [12]

Positive Influence and support from Investors of TeamIndus:

That’s partly what got Bala Parthasarathy, investor, Team Indus, excited in the first place. *“My motivation for investing was part patriotism, part investment because of the potentially outsized returns. If India becomes a player in aerospace, Team Indus is the only company that can possibly succeed,”* he says. [12]

Clearly, this is a long-term play. Investors seem to think that over time, space will no longer remain the preserve of government organizations and increasingly move into the private domain, an idea that is gradually gaining currency and turning into reality with the likes of Space X and Virgin Galactic. In India, Team Indus is leading the transformation. [12]

11. Conclusion

The analysis shows high suitability for services-based business models to operate out of India. The government's encouragement for private space industry within the country to develop capacity and capability in pursuing space activities should thereby be directed to both the spectrums across the industry value chain. A focused space policy mandate can have multiple direct and fringe benefits to the government, especially in the defence sector which has been the current government's area of interest through its 'Make in India' initiative.

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Appendix

1. SATCOM POLICY:

The norms, guidelines and procedures for implementation of the policy framework for satellite communications in India as approved by Government in 2000 are as follows:

ARTICLE-1: NORMS, GUIDELINES AND PROCEDURES CONCERNING ALLOWING INDIAN PARTIES TO PROVIDE SERVICES INCLUDING UPLINKING OF TV SIGNALS WITH INDIAN SATELLITES:

Government of India has decided that the Satellite operations from Indian soil may be allowed with both Indian and foreign Satellites, with preference for use of Indian Satellites.

The norms for operating with satellites from Indian soil shall be formulated by the respective Administrative Ministry/Department, for instance, in case of GMPCS, (global mobile personal communication by satellite) the operating license conditions will be as determined by the GMPCS policy being piloted by the Department of Telecommunications.

ARTICLE-2: NORMS, GUIDELINES AND PROCEDURES REGARDING USE OF INSAT CAPACITY BY NON-GOVERNMENTAL PARTIES

THE BASIC GUIDELINES

2.1 All the policies regarding INSAT system shall be determined by the INSAT Coordination Committee (ICC) keeping in view Policy Framework for Satellite Communications in India.

2.2 As a baseline making the INSAT capacity available to the Commercial Sector should be on a 'for profit' basis and at the same time consistent with the Government policies in the concerned user sectors.

2.3 The responsibility for obtaining the necessary licenses to offer a service in a particular territory (in India or in other countries) shall be that of the Party which has taken the capacity on lease.

Operations with INSAT and providing the services in India will be subject to the Party obtaining the requisite operating and frequency/siting license from the concerned authorities.

2.4 Once capacity is earmarked by ICC for non-governmental users, Department of Space/INSAT is authorised to provide this capacity to the non-governmental users for services other than telecommunications, following its own procedures. In case the demand is more than the available capacity, the Department of Space/INSAT may evolve suitable transparent procedures for allotting the capacity. This procedure may be in the form of auction, good faith negotiations, first come first served or any other equitable method.

2.5 The INSAT capacity may also be made available to foreign parties for operation in India or abroad. When INSAT capacity is made available for operations from outside India, the Contract must ensure that such operations are carried out in conformity with the UN/ITU Constitution, Convention, Treaties, Agreements and Regulations and also consistent with applicable Government of India Policies.

ARTICLE-3: NORMS, GUIDELINES AND PROCEDURES REGARDING ESTABLISHMENT AND OPERATION OF INDIAN SATELLITE SYSTEMS

DEFINITION OF INDIAN SATELLITES

“Indian Satellites” shall be defined as the satellites which are part of a satellite network or system which are informed, Coordinated, Registered and Notified by the Indian Administration following the International Telecommunications Union (ITU) Radio Regulations (RR) and for the actions of which Government of India shall be internationally responsible. Indian Satellites are a subset of the broader concept of Indian Space Objects.

3.1 The satellite systems of all Government Agencies to be established by Department of Space.

The Department of Space shall be the Administrative Ministry in respect of the satellite systems as per the Government’s Allocation of Business.

3.2 LICENSES REQUIRED: For establishing Indian Satellite Systems three distinct authorisations / licenses will be required. These are:

1) Authorisation from Department of Space to own and operate an Indian registered satellite system, including the spacecraft control centre.

2) Authorisation by the Wireless Planning and Coordination Wing (WPC) of the Ministry of Communications, being the Indian Administration, to operate a Space Station in accordance with the extant ITU Radio Regulations.

3) Operating licenses for the services to be provided by the system/network. The Administrative Ministry for Telecommunications is the Department of Telecommunications and for the Broadcasting, it is the Ministry of Information and Broadcasting.

3.3 RESPONSIBLE AUTHORITY FOR ISSUE OF LICENSES: In so far as the first two authorisations/licenses of above are concerned, a committee consisting of Secretaries to the Government of India in the Department of Space, Department of Telecommunications, Ministry of Information and Broadcasting, Ministry of Home Affairs, Secretary (R), Ministry of Defence and Ministry of Industry (Department of Industrial Policy and Promotion) with Wireless Advisor to the Government of India as a Permanent Invitee shall be the single window for clearing the systems. The Committee shall be chaired by the Secretary, Department of Space. The Secretariat of the Committee for authorising the Establishment and Operation of Indian Satellite Systems (CAISS) shall be resident in the Department of Space. After the CAISS approval the authorisations/licenses for the establishment and operation of the Satellite System shall be issued by Department of Space following its normal procedures. WPC shall also indicate the intersystem and terrestrial coordination as required.

3.4 NORMS, GUIDELINES AND PROCEDURES TO BE FOLLOWED IN ISSUING THE LICENSES: In case of satellite systems of Private Parties and Public Sector Units, the following procedures, norms and guidelines shall be adopted:

1. Only Indian registered Companies may be allowed to establish and operate an Indian Satellite System.

The Foreign Direct Investment (FDI) in such a Company shall not exceed 74 per cent. NRI/OCB equity will be treated at par with FDI

However, CAISS may license Indian registered companies with 100 per cent foreign direct investment to establish Indian Satellite Systems with the condition that over a period of five years after the issue of license for the establishment of the Satellite System the foreign direct investment should be brought down to the extent of 74 per cent or less.

The CAISS may also consider authorizing the registration of systems /networks of foreign companies as Indian Satellite Systems/Networks in the interest of attracting advanced services or foreign investment.

2. The applicant must establish to the satisfaction of CAISS that they have the required technical, financial and legal credentials to construct, launch and operate the proposed satellite system in conformity with the time-scales contained within its business plan.

3. The Satellite System/Network notified or registered shall be operated in conformity with the relevant international treaties to which India is a Signatory.

4. The Satellite Control Centre/s (SCC), i.e., the facility that monitors correct functioning of the key technical parameters and controls the movements of the satellite with the ability to partially or completely close down the network, should be located within the territory of the Union of India, or at a place authorized by CAISS based on the technical requirements.

5. The Satellite Systems, whose SCC is located in a territory other than India shall be required to shift the SCC to a location inside the territory of the Union of India within a reasonable period as determined by CAISS but not exceeding two years from the time the license is granted. After the SCC is shifted within India there shall be no other SCC outside.

6. WPC/MOC shall have regulatory control over the SCC facility in the event of interference to other radio services.

7. In the event of conflicting demands from two or more applicants which could not be resolved satisfactorily by adjusting the technical parameters, preference shall be given to the systems that propose to use satellites built in India and/or launched from India.

8. DOS shall have the right to ensure that the spacecraft is designed and built to carry out only the functions for which it is authorized. The measures may include inspection of the spacecraft before its launch. The Applicant must facilitate this.

9. DOS shall have the right to inspect the SCC facility and ask for modifications/augmentation, as deemed necessary.

10. All foreign personnel deployed for installation/operations/maintenance of the SCC shall be security cleared by the Government.

11. After the launch of the Space Station, DOS shall arrange to notify the UN about the establishment of the Space Station as per the relevant UN convention.

12. DOS shall have the right to take over the system, equipment and networks of the licensee in part or in whole in case of emergency or war or low intensity conflict or any other eventuality in public interest, as declared by the Government of India. Specific orders or direction from the Government of India issued under such conditions shall be applicable to the licensee.

ARTICLE-4: NORMS, GUIDELINES AND PROCEDURES REGARDING USE OF FOREIGN SATELLITES:

In regard to the use of foreign satellites for services in India, Government states that:

(a) Operation of foreign satellites may be allowed in the case of overseas services using international inter-governmental systems, systems owned and operated by Indian Parties but registered in other countries before rules for registrations have been formulated in India, international private systems where there is a substantial Indian participation by way of equity or in kind contribution and where considered necessary reciprocal arrangements could be worked out with the country/countries of registration or ownership.

(b) Government of India has decided that the Satellite operations from Indian soil may be allowed with both Indian and foreign Satellites, with preference for use of Indian Satellites.

(c) Satellite broadcasting including Direct to Home (DTH) TV broadcasting, may be licensed by the Licensing Authority constituted under the relevant statute, on Indian Satellite Systems or any other satellite system, excepting those prohibited for the purpose by the competent authority, In cases where operations of services with foreign satellites are licensed, the Licensing Authority at the time of renewal or reissue of licenses for these services, will require the licensee to opt for the Indian Satellite System subject to availability of capacity which meets the requirement of the service.

(d) Department of Space should ensure that the various provisions of the Policy would conform to the proposed Broadcasting Law.

SERVICE CLASSIFICATION

The Satellite Communication Services could be broadly classified as:

1. International (trans-border) communications services : The International Communications Services will include PSTN, GMPCS, Value Added Services, Programme Exchange etc., where one end of the link terminates in a foreign country i.e., the ‘call’ either originates or terminates in a foreign country.

2. Domestic communication services:

I) Broadcasting (moving images (TV) and associated sound; and audio (radio)) a) Free to air satellite broadcasting – digital or analogue, b) Broadcasting meant for reception by subscribers.

ii) Public Switched Telephone Network (domestic)

iii) Value Added Services (domestic): This includes vsats for closed user groups, Private VSAT service with shared hub, Cellular and Paging services interconnection, Video Teleconferencing, Audio/Video Programme exchange, data broadcasting, Computer networking, Internet services, Multi-media communications, etc.

iv) Land Mobile Satellite Services (Domestic and Coastal Waters)

2. Remote Sensing Data Policy

1. Department of Space (DOS) of the Government of India shall be the nodal agency for all actions under this policy, unless otherwise stated.

2. For operating a remote sensing satellite from India, license and/ or permission of the Government, through the nodal agency, shall be necessary.

3. As a national commitment and as a “public good”, Government assures a continuous and improved observing/ imaging capability from its own Indian Remote Sensing Satellites (IRS) programme.

4. The Government, through the nodal agency, shall be the sole and exclusive owner of all data collected/ received from IRS. All users will be provided with only a license to use the said data, and add value to the satellite data.

5. For acquisition/ distribution of remote sensing data within India, license/ permission from the Government of India, through the nodal agency, shall be necessary.
6. Government users namely, Ministries/ Departments/ Public Sector/ Autonomous Bodies/ Government R&D institutions/ Government Educational/ Academic Institutions, can obtain the data without any further clearance.
 - I) Private sector agencies, recommended at least by one Government agency, for supporting development activities, can obtain the data without any further clearance.
 - ii) Private sector agencies, recommended at least by one Government agency, for supporting development activities, can obtain the data without any further clearance.
 - iii) Specific requests for data of sensitive areas, by any user, can be serviced only after obtaining clearance from the HRC.
 - Iv) Specific sale/ non-disclosure agreements to be concluded between NRSC and other users for data of better than 1 m resolution.