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Government of India
Department of Space
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Antariksh Bhavan,
New BEL Road,
Bengaluru.

October 15, 2020

Subject: Spacecom Policy - 2020 and Spacecom NGP-2020 – Seeking Comments- reg.
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Department of Space being the administrative ministry in respect of space activities in India as per the allocation of Business Rules of Government of India, shall issue appropriate norms, guidelines and procedures including approval-mechanism from time to time for the services in the areas of secured communication, commercial and societal services under Spacecom-2020.

Accordingly, the Draft Space Based Communication Policy of India-2020 (Spacecom Policy- 2020) and draft Norms, Guidelines and Procedures for implementation of Spacecom Policy-2020 (Spacecom NGP-2020) are published for public consultation.

Comments on the draft policy, if any, shall be forwarded to this Department to the email id:- **section-6@isro.gov.in** at the earliest, but not later than **04.11.2020.**

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Draft Space Based Communication Policy of India – 2020
(Spacecom Policy - 2020)

SPACE BASED COMMUNICATION POLICY OF INDIA – 2020
(Spacecom Policy - 2020)

Preamble:

India has made significant progress in the area of satellite communication in terms of realization of indigenous technology, facilities, systems and rollout of services in a systematic manner. The implementation space based communication services has been led by the Government with relevant contributions from Indian Industry to achieve self-reliance and bring in necessary capabilities within the country at par with global trends.

The satcom applications are growing in leaps and bounds with rapid advancements in the technology. The demand for satellite bandwidth is growing to meet the communication needs for socio-economic development, connecting inaccessible regions, national security and consumer services. In order to meet such demands and to capture due shares in global market, it is essential to augment the orbit-spectrum resources and develop new technologies in a sustained manner.

Space is becoming a vital frontier for strategic applications and India needs to augment its space capabilities to ensure its national security and sovereignty through appropriate monitoring and control measures/ mechanism under Government of India.

Taking cognizance of the above aspects and the Government's initiatives towards Self Reliant India (Aatmanirbhar Bharat), enhanced engagement of Indian industry and related stakeholders with a focus on "ease of doing business" and encouraging healthy competitiveness is vital to contribute to the growth of national economy.

Accordingly, the Spacecom Policy-2020 has been formulated, addressing various aspects of space based communication from any space object of nano, micro or large class of satellites operating in GSO & NGSO orbits including deep space, interplanetary, and inter-satellite communications.

Spacecom Policy-2020:

The "Spacecom Policy-2020" aims at meeting the growing demands of space based communication requirements of the nation and advancements in the relevant technologies for self-sustenance in areas of commercial, secured and societal

communications. The Policy fosters promotion of Indian industry as co-traveller along with Department of Space (DoS) towards meeting these objectives.

Under the ambit of Spacecom Policy-2020, the Government of India shall -

- adopt measures to monitor and authorize use of space assets for communication to or from Indian territory.
- ensure protection of space assets already put in place and adopt measures to bring in more space assets under the administrative control for enhancing ability to utilize space based communication for national needs.
- promote increased participation of commercial Indian industry to provide space based communications both within the country and outside.
- concentrate on realization of space based communication systems for addressing the requirements that cannot be effectively, affordably and reliably satisfied by commercial Indian industry either because of national security concerns or economic factors.
- provide a timely and responsive regulatory environment for the commercial Indian industry to establish and operate space based communication systems.

Department of Space being the administrative ministry in respect of space activities in India as per the allocation of Business Rules of Government of India, shall issue appropriate norms, guidelines and procedures including approval-mechanism from time to time for the services in the areas of secured communication, commercial and societal services under Spacecom-2020.

Accordingly, "Norms, Guidelines and Procedures for implementation of Spacecom Policy– 2020 (Spacecom NGP-2020)" are issued as part of the Spacecom-2020.

This 'SpacecomPolicy-2020'along with the 'SpacecomNGP-2020'shall take effect upon approval of the Cabinet.

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Draft Norms, Guidelines and Procedures for implementation Spacecom Policy-2020 (Spacecom NGP-2020)

DRAFT (Aug 13, 2020)

Norms, Guidelines and Procedures for Implementation of Space Based Communication Policy of India- 2020

(Spacecom NGP- 2020)

August 2020

Department of Space

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Important Terms

Orbital Resource: Refers to the orbital slot/orbits, the associated frequency spectrum and coverage to provide satellite based communications. Use of this orbit spectrum resource is governed by ITU Radio Regulations.

ITU: International Telecommunication Union, a specialised UN agency which deals with, *inter-alia*, international management of the radio frequency spectrum and satellite orbits.

Radio Regulations: Radio Regulations are the international treaty that governs the use of the radio-frequency spectrum and the geostationary-satellite & non-geostationary-satellite orbits under the aegis of ITU.

Space assets : The space assets include the space based systems and the orbital resources that facilitate communications.

WPC: 'Wireless Planning and Coordination Wing' of the Ministry of Communications (WPC/MOC) is the nodal agency represents India at ITU. WPC is also responsible for management of spectrum in the country.

Indian Entity: Indian Entity refers to Indian government bodies, PSUs/CPSEs, Indian registered non-Government Private Entity (NGPE), companies, start-ups, MSMEs, industries, academic institutions, etc.

IN-SPACe: Indian National Space Promotion & Authorization Center is an independent body constituted by Government of India, under Department of Space (DOS), to promote, hand hold, permit, monitor and supervise space activities by NGPEs and accord necessary permissions as per the regulatory provisions, exemptions and statutory guidelines.

Norms, Guidelines and Procedures for Implementation of Space Based Communication Policy of India- 2020

(Spacecom NGP- 2020)

1. Preamble:

1.1 The communication revolution ushered by the INSAT satellite network in India by ISRO, in early 1980s, has enabled people of the country experience its benefits in all walks of the life including the people in the remotest corners of the country to have access to modern communication facilities. The satellite communication activities were steered under the provisions of Policy Framework for Satellite Communication in India (SATCOM Policy-1997) and the Norms, Guidelines and Procedures for implementation of policy framework for satellite communication in India (NGP-2000).

1.2 The satcom applications are growing in leaps and bounds with rapid advancements in the technology. The demand for satellite bandwidth is accordingly growing to meet the communication needs for socio-economic development, improving access to remote regions, national security, enterprise and consumer services.

1.3 With advances in technologies on ground and in space, innovative use of higher frequency bands, spot beams and frequency reuse, flexible payloads, constellations providing low latency communication, etc. are able to provide solutions for a large number of applications.

1.4 India has emerged as one of the few counties with end-to-end capabilities for satellite based communication systems and applications. The country has demonstrated technological capability of building satellites, launching and using them for its needs. Translating the indigenous technological capability into capacity to meet national needs and also to be a significant player in global space communications market require greater participation of the Indian industry. Towards this, earlier efforts under the provisions of Policy Framework for Satellite Communication in India (SATCOM Policy-1997) and the Norms, Guidelines and Procedures for implementation of policy framework for satellite communication in India (NGP-2000) had limited success. In several parts of the globe, the participation of private industry in building, operating and offering satcom

services is seen to be substantial. It is thus imperative to provide an environment for increased private (non-governmental) participation. In this endeavour, while the private enterprises bring in funds, talent and speed in the activities, it is expected to enhance the indigenous space assets operating under the administrative purview of the Government of India. Space is considered the fourth frontier for humanity and the country's ability to use space based communication plays a significant role in its place among the comity of nations. Thus, it is vital that the communication from any space object, including deep space, interplanetary and inter-satellite communications through nano, micro or larger satellites operating in GSO & NGSO orbits, in any part of electromagnetic spectrum, to or from Indian Territory, is monitored and authorized by the Government of India.

1.5 Considering these aspects, SPACECOM Policy-2020 has envisioned enhancement of the satcom capabilities and capacity of the country with the larger involvement of non-government players while ensuring the protection of the existing space assets. The policy aims at meeting the growing demands on satellite communication requirements, promotion of space based communication activities by industry, advancements in the relevant indigenous technologies for self-sustenance and protection of space assets needed for the country.

2. Spacecom Policy 2020 Norms

The Spacecom Policy – 2020 enables the activities of space based communications under five major statements. Spacecom Policy-2020 states that the Government of India shall –

- adopt measures to monitor and authorize use of space assets for communication to or from Indian territory.
- ensure protection of space assets already put in place and adopt measures to bring in more space assets under the administrative control for enhancing ability to utilize space based communication for national needs.
- promote increased participation of commercial Indian industry to provide space based communications both within the country and outside.
- concentrate on realization of space based communication systems for addressing the requirements that cannot be effectively, affordably

and reliably satisfied by commercial Indian industry either because of national security concerns or economic factors.

- provide a timely and responsive regulatory environment for the commercial Indian industry to establish and operate space based communication systems.

Norms for the above policy statements are:

2.1 Adoption of measures to monitor and authorize the use of space assets for communication to or from Indian territory

Space is beyond the delineation of territorial boundaries of countries and is accessible from any part of the globe. Space being the fourth frontier has huge potential to be used for commercial, social and strategic exploitations. While use of outer space for peaceful purposes is governed by the UN treaties and international conventions, use of orbital resources is governed by radio regulations of the specialised UN agency, the International Telecommunication Union (ITU). Government of India as member of such UN bodies has responsibilities and obligations towards use of outer space as a common province of humanity. Towards meeting this responsibility and obligation, it is essential that Government of India has the knowledge and provisions of having control on the activities with respect to any communication involving space objects from its territory and defines the roles and responsibilities for each of the stakeholders. This necessitates that the use of space based communication in any frequency of electromagnetic spectrum, to or from Indian territory, be permitted through a process of authorization.

2.2 Ensuring protection of space assets already put in place and adopt measures to bring in more space assets under the administrative control of GOI for enhancing ability to utilize space based communication for national needs

India stands poised with capabilities to provide the technologically advanced systems for the growing communication needs in the country; and has realised end-to-end indigenous capabilities in building, launching and operating communication satellites over the past years. India by virtue of its size, population and growing economic strength provides a huge market for satellite based communications encompassing broadcast, direct-to-home (DTH), telecommunications, network connectivity, global mobile personal communication by satellite (GMPCS), etc. In line with the demands there is

a need to enhance the capacity. It is envisaged that by bringing in robust policy mechanisms, the capabilities available in the country and the potential of the Indian industry to realise the capacities shall bridge the gap between the supply and the demand. This shall play a vital role in the growth of the Indian industry while ushering in affordable and yet state-of-the-art capacity for the communication needs of the country.

2.2.1 Protection of existing space Assets

The existing space assets comprise of 1) orbit spectrum resources under Indian administration and 2) the capacity realized through the Indian satellites in orbit.

The orbit spectrum resource or orbital resource refers to the orbital slot, the associated frequency spectrum and coverage to provide satellite based communications.

The use of orbital resource is governed by International Telecommunications Union (ITU) Radio Regulations (RR). Indian orbital resources are those resources which are under the exclusive control of Indian Administration. Use of such Indian orbital resources are informed, coordinated, notified and registered at ITU, by the Indian Administration. Non-Indian orbital resources are those resources which are under the exclusive control of other country's administration.

Acquiring orbital resource is a long drawn process, needing extensive planning for technical coordination and negotiations with satellite operators of multiple countries, to ensure interference free operation. Deployment of satellite(s) within ITU allowed period to bring this into use and continued occupancy is essential part of acquiring and protecting orbital resources.

India has brought in 32 indigenous operational communication satellites, since 1980s, operating from multiple orbital slots providing various services in different frequency bands. These indigenous resources are due to the fructifications of the long-time investments and efforts made by the Govt of India which needs continued utilization. Timely replacements of these satellites at the end of their mission life are essential to protect the orbital resources under the Indian administration while providing the continuity of services.

2.2.2 Enhancement of Space Assets

The growing demand for the space based communication capacity for secured, strategic and economic activities in the country requires unhindered access to orbital resources. It is essential to enhance the orbital resources under Indian Administration to provide such unhindered access as industry is enabled to play a greater role in meeting the requirements of space based communication in the country.

2.3 Promotion of increased participation of Indian industry to provide space based communications both within the country and outside

Department of Space (DOS) & Indian Space Research Organisation (ISRO), in their efforts to achieve end-to-end capabilities, have nurtured Indian industry to be partners in supplies and services while realizing launch vehicles and satellites. In this endeavour, Indian industry has acquired skillset and capability to realize the sub-systems and satellite systems meeting the stringent specifications and reliability.

The demand for bandwidth is increasing substantially from on-going services as well as emerging applications. With the advancements in technology, the space based communications are becoming efficient and affordable.

The non-government private entities can play a big role in addressing the growing demand within India and also use the opportunity to be important players in the international space communications market.

It is an opportune time to enable commercial communication activities to be carried out by non-governmental Indian entities to not only meet Indian requirements but also enable them to become significant players in global space communication arena.

Government of India seeks a greater participation of Indian Industry to meet the demands in activities of realizing, owning, operating satellite systems for communications over India and outside, creating facilities for satellite control operations and so on.

2.4 Realization of space based communication systems for addressing the requirements that cannot be effectively, affordably and reliably satisfied by commercial Indian industry either because of national security concerns or economic factors

While the effort is to provide a conducive and enabling environment for the industry to meet the requirements of space based communication for various broadcasting, telecommunications and networking activities in the country, there would still be communications requirement pertaining to applications in the domains of national security, strategic communications, surveillance and critical economic transactions that may require channels protected with appropriate hardware and software solutions. For these secured communications, in view of sensitivities involved, the systems need to be developed with indigenous designs and modules under the direct control of government and such systems shall be pursued by DOS.

Satellite communication programmes focused on societal development have been implemented to reach out to unreached strata of the society in the areas of tribal development, social empowerment, health, education, disaster management, etc. Considering the diversities in terms of geographical terrains and socio-economic conditions of the country, the need for such programmes does exist to address specific objectives. Such communication requirements, which may not be commercially viable in nature, shall be pursued by DOS. Thus, the satellite communication systems which cannot be addressed in an open-to-all commercial domain shall be brought into operation with the involvement of government for sustainability.

2.5 Provision of timely and responsive regulatory environment for the commercial Indian industry to establish and operate space based communication systems

Participation of private entrepreneurs to establish, operate and provide space based communications requires an enabling regulatory mechanism. The players should be made aware of their roles, eligibilities, responsibilities and accountabilities in clear terms. Spacecom NGP-2020 addresses these aspects and the authorizations required. Satcom activities shall be authorized by the autonomous body under Department of Space (DOS). Department of Space being the administrative ministry in respect of space activities shall bring out policy guidelines and further regulations, time to time, as necessary and appropriate.

3. Participation of Indian entities in space based communication activities

Under the provisions of Spacecom Policy-2020, Indian entities can establish and operate satellite systems to provide capacity for communication services with authorizations.

Indian entities can undertake design, development and realization of satellites and associated communication systems. They can establish satellite system through their own built satellite or procured satellite. They can establish telemetry, tracking & command (TT&C) earth stations and satellite control centre (SCC) in or outside India. They can offer the capacity to commercial and societal communications within India as well as outside India. They can also supply their systems and solutions to international markets.

Indian entities can avail Indian as well as non-Indian orbital resources to establish their space based systems for communication services over India and outside India. Indian orbital resources can be availed from designated PSU/CPSE under DOS on commercial basis subject to availability.

The authorized Indian entities can directly offer their capacities to customers.

4. Authorizations for Space based Communications

Any communication service within the Indian territory from space can be carried out only with an authorised space asset. Only Indian entities are eligible for obtaining space asset authorisation. The authorisation for establishing space based communication systems by the Indian entities deals with use of Indian or non-Indian orbital resources and ownership and /or lease of the space asset.

a) Any Indian entity can seek authorisation for use of space asset for communication within Indian territory. This authorisation addresses use of Indian orbital resource, non-Indian orbital resource, use of owned or leased space asset.

b) Any Indian entity can seek authorisation to be the owner of space system for providing communication using space asset both within and outside Indian territory. The authorisation addresses the country's liability for any potential damages caused by the space object or space activities of Indian entities as owner of the space asset. An Indian entity which owns and operates a space object and provides communication services, shall

be liable for any potential damages caused to other space objects in outer space and its environment. This obligation shall be fulfilled by the entity by providing a financial guarantee or insurance cover to a sum, as determined by the authorizing body by taking into account the risks involved in nature and operations of that space object in outer space.

c) Any Indian entity can seek authorisation for establishing a ground system within Indian territory for monitoring and controlling space asset.

Any Indian service provider/user can avail the space based communications only on the authorized space based systems.

4.1 Authorizations

Authorizations are required to be sought for:

A. Establishment of space based systems for communications over India - using Indian orbital resources

a) An Indian Entity shall submit the proposal in a prescribed format for authorization for establishment of space based communication system:

i. using available orbital resources

ii. using new orbital resources

b) In case of proposing to use available Indian orbital resources, the confirmation of availing it shall be provided.

c) In case of proposing to use new orbital resources, the details of new filing shall be provided.

d) Authorization requires the financial guarantee or insurance cover by the Indian Entity as part of its ownership towards fulfilment of nation's liability as per UN treaties to use the outer space.

e) The authorization shall be applicable to a specific Indian Entity and any change of ownership requires a fresh authorization.

f) The authorization shall be applicable to a specific space asset and change or replacement of the asset requires a fresh authorization.

B. Establishment of space based systems for communications over India - using Non-Indian orbital resources

a) An Indian Entity shall submit the proposal in a prescribed format for authorization for:

   a. establishing a space based communication system

   b. providing space based communication through leased space asset.

b) Details of arrangements made with foreign administration for use of proposed orbital resources shall be provided.

c) Use of Non-Indian orbital resources shall be permitted subject to an appropriate arrangement by which such orbital resources are eventually brought under Indian administration, through Indian ITU filing. The authorization requires a satisfactory commitment by the applicant through an appropriate arrangement with the concerned foreign administration which has the priority for the use of the proposed orbital resources. In case of a leased space asset, apart from the applicant, the operator of such asset shall also agree and commit for the arrangement of bringing the orbital resources eventually under Indian administration.

d) Authorization requires the financial guarantee or insurance cover by the Indian Entity as part of its ownership towards fulfilment of nation's liability as per UN treaties to use the outer space, as the case may be.

e) The authorization shall be applicable to a specific Indian Entity and any change of ownership requires a fresh authorization.

f) The authorization shall be applicable to a specific space asset. Any change or replacement of the asset requires a fresh authorization.

C. Establishment of space based systems for communications exclusively outside India

a) An Indian Entity shall submit the proposal in a prescribed format for authorization for establishment of space based communication system providing services exclusively outside India.

b) Indian or Non-Indian orbital resources can be used. Details of arrangements made for use of proposed Indian or Non-Indian orbit resources shall be provided.

c) Authorization requires the financial guarantee or insurance cover by the Indian Entity as part of its ownership towards fulfilment of nation's liability as per UN treaties for use of outer space.

d) The authorization shall be applicable to a specific Indian Entity and any change of ownership requires a fresh authorization.

e) The authorization shall be applicable to a specific space asset and replacement space asset requires a fresh authorization.

D. Establishment and utilization of NGSO communication systems

a) An Indian Entity shall submit the proposal in a prescribed format for authorization for:

   a. establishing NGSO communication system

   b. providing communications through NGSO systems.

b) The NGSO systems can use Indian or Non-Indian orbital resources. Details of arrangements made for use of proposed Indian or Non-Indian orbit resources shall be provided.

c) Authorization requires the financial guarantee or insurance cover by the Indian Entity as part of its ownership towards fulfilment of nation's liability as per UN treaties to use the outer space, as the case may be.

d) Use of capacity on NGSO systems shall be permitted after ensuring aspects like availability of user gateways, mechanism to address cyber security concerns and availability of interference monitoring capability, etc., in India.

e) The authorization shall be applicable to a specific Indian Entity. Any change of ownership requires a fresh authorization.

f) The authorization shall be applicable to a specific space asset and any change requires a fresh authorization.

E. Establishment of Ground Segments for Space Asset Operations

a) An Indian Entity shall submit the proposal in a prescribed format for authorization for establishment and operations in Indian Territory.

i. Telemetry, Tracking and Command (TT&C) station(s)

ii. Satellite Control Center (SCC)

b) The authorization shall be for monitoring and control of specific space asset using operational capabilities of these facilities to communicate with that space asset.

c) The authorization shall be applicable to a specific Indian Entity. Any change in ownership requires a fresh authorization.

d) The authorization shall be applicable to specific facility to monitor and control specific space asset. Any change in these requires a fresh authorization.

4.2 Applications for seeking authorizations

Templates of the Applications Forms (A to E) seeking mandatory details are provided in the Annexure. Any additional information may also be sought by the Authorizing body as necessary.

4.3 Other Considerations for Authorization

4.3.1 Protection of existing orbital resources and acquisition of additional orbital resources are of paramount importance and shall be an important consideration.

4.3.2 The authorization process shall ensure that the use of non-Indian orbital resources and the proposed new Indian orbital resources shall not pose any constraint to operations of existing and planned satellites under Indian administration, and should not be in violation of coordination agreements entered into with India and other countries.

4.3.3 The authorization shall stipulate a timeline for bringing the satellite systems into operations as applicable.

4.3.4 Authorizations shall be issued with a fee prescribed from time to time.

4.3.5 Non-compliance to the requirements and terms of authorizations will result in cancellation of the authorization.

4.3.6 The authorization does not imply granting of any Service License or Frequency/Siting clearances for earth stations. These must be obtained separately from the appropriate authorities under Ministry of Information and Broadcasting (MoIB), Ministry of Communication (MoC) in India or similar regulatory authorities in other countries as the case may be.

5. Realization of space based communication systems for secured and societal communications

5.1 The satellite systems for secured communications shall be realized using indigenous designs, systems and infrastructure providing the capabilities of secured environment by DOS/ISRO. While realizing secured communication systems, DOS may avail capabilities of Indian industry as appropriate. Indian governmental or non-governmental agencies requiring to bring their services under secured communications category shall use the satellite systems built for secured communications.

5.2 The space based communication systems with objectives of societal development such as social empowerment, providing access to health care and education, rural/tribal development, meeting emergency communication requirements, supporting disaster management, etc., for reasons of economic viability or sustainability shall be realized by DOS. The systems shall be realised from conceptualization, demonstration, trials to operational roll out.

5.3 Considering the non-commercial nature and national development objectives, the licensing procedure for operations of the ground and user segments of societal communication networks shall be different from that adopted in the case of commercial communications. The statutory and regulatory charges like license fee, spectrum charges, monitoring charges, etc., shall be exempted for those societal satcom networks that are non-commercial.

6. Utilization of operational systems and emphasis on research and development

The satellite communication systems brought into operations are addressing the requirements of commercial, secured and societal communications. While it is expected that multiple players would establish communication satellite systems, the capacity on currently operational satellites should be available for usage based on market dynamics. In order to bring in such flexibilities of commercial domain, the operations and

management of the operational assets shall be carried out by business establishment of identified PSU/CPSE under DOS.

The emphasis on research and development shall continue to be under ISRO/DOS in the areas of (i) advanced communication technologies including use of higher frequency bands, (ii) implementation of societal programmes aimed at national development (iii) development of satellites for secured communications.

6.1 The space assets for satellite communications established hitherto by ISRO/DOS comprising of satellite systems and associated Gateways of HTS shall be transferred at no/notional cost to its designated PSU/CPSE for commercial utilization. Further, communication systems that are created upon fructification of research and development efforts shall also be transferred at no/notional cost, as and when deemed fit, to the designated PSU/CPSE for commercial utilisation.

6.2 The PSU/CPSE shall be free to adopt suitable pricing and marketing mechanisms to commercially utilize the capacity of transferred assets for satcom services to suit the market demands.

6.3 The designated PSU/CPSE under DOS shall bring timely replacements for operational satellites with similar or enhanced capacity and ensure continued use of the orbital resources.

6.4 Indian orbital resources that can be made available to Indian Entities for establishment of their space based communication systems shall be made available through designated PSU/CPSE under DOS for commercial use.

7. Protection and enhancement of orbital resources

7.1 The orbital resources are essential requirement for space based communications. DOS shall monitor and ensure continued occupancy and utilization of these orbital resources including the timely deployment of satellites by its PSU/CPSE and Indian entities. Continued efforts to enhance the Indian orbital resources and indigenous capacity shall be ensured.

7.2 In cases where any authorized satellite operator is found unable to bring replacement satellite in an operational orbital slot or unable to take suitable actions to protect the acquired orbital resource within its validity period, DOS shall take appropriate action for protection of such resource including assigning the same to other potential Indian satellite operator(s) following stipulated procedures.

7.3 Any Indian Entity who has acquired or in the process of acquiring Indian orbital resources can transfer the use of such ITU filing to another Indian Entity on commercial terms with the permission of Authorizing Authority.

8. Provision of timely and responsive regulatory environment

8.1 Indian National Space Promotion & Authorization Center (IN-SPACe), an independent body constituted by Government of India, under Department of Space (DOS), shall accord necessary authorizations and permissions for all satcom related activities, to or from Indian territory, as per the applicable acts, regulatory provisions & exemptions and statutory guidelines.

8.2 The provisions brought out under this Norms, Guidelines and Procedures for Implementation of Space Based Communication Policy of India- 2020 (Spacecom NGP- 2020) forms the basis for authorizations and operations of space based communications in India.

8.3 IN-SPACe shall formulate additional authorisations, if any, as and when needed and also bring out detailed guidelines for submission of applications, processing and grant of authorizations, from time to time.

8.4 Department of Space being the administrative ministry in respect of space activities as per the Government of India allocation of business rules, shall bring out policy guidelines and additional regulations in respect of space based communications.

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ANNEXURE

Template application forms for authorizations (Form A to Form E)

Application for establishment of space based system for communications over India (using Indian orbit resources)

[Completed application may be submitted to IN-SPACe, Department of Space, Antariksh Bhavan, New BEL Road, Bangalore 560 231]

1. Entity Information

a) Name of the Indian Entity:

b) Category of the Indian Entity* :
(* Indian government body, PSU/CPSE, Indian registered non-Government Private Entity (NGPE), company, start-up, MSME, industry, academic institution, others (pl specify))

c) Details of the Indian Entity (include registration details) :

d) Financial profile :

e) Address of the Registered Office:

f) Ownership pattern (FDI if any):

g) Address of the Corporate Office:

h) Address for Correspondence:

i) Name, Designation and contact details of Authorized Person:
Mobile No.:
Telephone No.:
Fax No.:
Email address:
Website:

2. Technical Information

a) Space segment details (satellite bus, propulsion, operational life, mass, power etc):

b) Payload details:

c) Service area:

d) Target services:

e) Location and details of TT&C station(s)

f) Location and details of Satellite Control Center (SCC):

g) Whether TT&C station/SCC located outside India, if yes details of arrangements made to utilize them:

h) Ground segment details:

3. Orbit-Spectrum Information

a) Orbital resource details:

b) Frequency band and coverage details:

c) Proof of obtaining orbit resources from designated PSU/CPSE, in case of utilizing available Indian orbital resources:

d) Details of new ITU filing(s) in case of new Indian orbital resources:

e) Interference analysis with respect to Indian ITU filings (GSO & NGSO).

4. Management Information

a) Plan for satellite realization:

b) Launch service to be used:

c) Expected launch schedule:

d) Arrangements for third party liability insurance:

e) Project schedule with key milestones:

f) Estimated budget & funding details:

(Please provide detailed information a annexures/enclosures, as necessary)

5. Undertakings

a) We hereby affirm that we have read and understood the "Space Based Communication Policy of India – 2020" and "Norms, Guidelines and Procedures for Implementation of Space Based Communication Policy of India – 2020". We shall fully comply with the conditions given therein.

b) We hereby agree to provide all the necessary technical and management details as per the requirements and any additional information as and when sought.

c) We hereby affirm that we understood the ITU process of filing, coordination, notification and registration for new orbit spectrum resources under Indian Administration (A Brief on Frequency Coordination Process is provided in Annexure-A1). We agree to comply with such requirements and bear the applicable ITU fee and other

charges towards the processes of acquiring new orbital resources (This is applicable if the applicant proposed to submit new ITU filing, coordinate and use it).

d) We hereby affirm that the submitted interference analysis establishes the interference free operations and compatibility with Indian ITU filings (GSO & NGSO).

e) We hereby agree to provide financial guarantee or insurance cover as determined by the authorizing authority, for the space assets owned by us towards fulfilment of nation's liability as per UN treaties to use the outer space.

f) We hereby agree to participate in the meetings/discussions, at our cost, with the Indian Authorities related to authorization and subsequent operations of the proposed space based communications.

g) We hereby agree to pay all the stipulated charges/fee towards authorization.

h) We hereby agree to provide the necessary status reports as sought by the concerned authorities about the implementation of our project.

We hereby submit our proposal / application for due consideration for authorization.

Signature of the Authorized Signatory with Seal and Date

Annexure / Attachments:

a) …

b) …

c) …

Annexure-A1

A Brief on Frequency Coordination Process

The aim of Frequency coordination is for developing new orbit-spectrum assets and protecting the rights to use such resources in accordance with Radio Regulation of the International Telecommunication Union (ITU). It is a technical and regulatory process by which radio-frequency interference between different radio systems that use the same frequency is removed or mitigated and trouble free service to users is ensured.
The coordination process for non-planned band in GSO involves the following steps:

1) Indian commercial satellite operator through WPC (Wireless Planning & Coordination wing, DoT), the Indian Administration for ITU, has to submit a Coordination Request (CR/C) filing to ITU, providing intended use of orbital slot, frequency band, service and the technical characteristics of the payload.

2) WPC examines these filings from National Frequency Allocation Plan point of view. If in conformity, then WPC forwards the CR/C filing to ITU.

3) ITU examines this coordination request filing for compliance of regulations for its receivability including signal limits, sets a date of receipt and then publishes it with the list of affected countries along with their senior satellite networks that need to be coordinated with. The satellite has to be brought into use within 7 years from this date of receipt at ITU.

4) Other countries can lodge objections to this filing if they estimate that the proposed satellite can cause harmful interference to their networks with higher regulatory priority. Comments should be sent to the country of filing and ITU within four months.

5) Indian commercial satellite operator, with the consultation of DOS, through WPC, should initiate coordination with other countries identified by ITU to reach for a technical agreement that includes establishment of satellite and ground system technical parameters, conditions, sharing of available spectrum resources, and other negotiations to co-exist with the affected satellite network of other countries. These coordination agreements reached with other operators need to be approved by WPC and by the similar entities of the other country.

6) Since coordination process is a complex and long drawn process, depending on the orbital separation & coverage, the coordination with one country itself can take typically 2-3 years involving multiple meetings. Indian commercial satellite operator, after reaching coordination agreement, preferably with all the ITU identified countries or with critical countries, should launch and deploy a satellite to bring into use of the frequencies and operate for a minimum of 90 days at the designated orbital slot.

7) To record the frequencies and the technical parameters coordinated in the Master International Frequency Register (MIFR) of ITU, India satellite operator should submit 'Notification' and 'Due Diligence' information to ITU as given hereunder:

   First notification filing needs to be submitted within 7 years from the date of receipt of CR/C filing. This filing projects the coordination status with the countries identified by ITU. ITU will publish the initial notification received from country as PART I-S and then in PART II-S, the final MIFR.

In addition, 'Due Diligence' (ITU-R RESOLUTION 49) filing with the details of the satellites brought into use with projected frequency bands, satellite manufacturing contract details and launch contract details need to be sent to ITU within the validity period.

To complete above processes, ITU gives seven years for non-planned bands and eight years for planned bands. Recording of the coordinated orbit-frequency resources in MIFR is essential as it gives international recognition and protection from harmful interferences from the junior satellite networks.

8) If coordination could not be completed with any priority network then the new satellite network cannot claim protection from harmful interference and cannot cause any harmful interference to such prior networks. In short, it must operate only on non-interference-non-protection basis in respect of those assignments.

9) Certain networks with higher priority may get suppressed, if they are not able to bring the satellite network within the regulatory period.

Application for Establishment of space based system for communications over India (using Non-Indian orbit resources)

[Completed application may be submitted to IN-SPACe, Department of Space, Antariksh Bhavan, New BEL Road, Bangalore 560 231]

1. Entity Information

a) Name of the Indian Entity:

b) Category of the Indian Entity* :
(* Indian government body, PSU/CPSE, Indian registered non-Government Private Entity (NGPE), company, start-up, MSME, industry, academic institution, others (pl specify))

c) Details of the Indian Entity (include registration details) :

d) Financial profile :

e) Address of the Registered Office:

f) Ownership pattern (FDI if any):

g) Address of the Corporate Office:

h) Address for Correspondence:

i) Name, Designation and contact details of Authorized Person:
Mobile No.:
Telephone No.:
Fax No.:
Email address:
Website:

2. Technical Information

a) Space segment details (satellite bus, propulsion, operational life, mass, power etc):

b) Payload details:

c) Service area:

d) Target services:

e) Location and details of TT&C station(s)

f) Location and details of Satellite Control Center (SCC):

g) Whether TT&C station/SCC located outside India, if yes details of arrangements made to utilize them:

h) Ground segment details:

3. Orbit-Spectrum Information

a) Orbital resource details (including ITU publication details):

b) Frequency band and coverage details:

c) Details of arrangements made with the concerned foreign administration for using orbital resources (Please enclose agreement or relevant documents):

d) In case the space asset is leased, the details of lease (Please furnish the relevant documents):

e) Details of arrangements made with the concerned foreign administration and foreign operator (if applicable), and the proposed mechanism to eventually bring the orbital resources under Indian administration (Please enclose relevant documents):

f) Details of coordination agreements made for the proposed orbital resources:

g) Interference analysis with respect to Indian ITU filings (GSO & NGSO).

4. Management Information

i. In case the asset is owned by the applicant

a) Plan for satellite realization:

b) Launch service to be used:

c) Expected launch schedule:

d) Arrangements for third party liability insurance:

e) Project schedule with key milestones:

f) Estimated budget & funding details:

ii. In case the asset is leased by the applicant

a) Name of the satellite:

b) Details of the satellite operator:

c) Payloads carried on the satellite:

d) The payload proposed for utilization over India:

e) Launch date:

f) Remaining life:

(Please provide detailed information a annexures/enclosures, as necessary)

5. Undertakings

a) We hereby affirm that we have read and understood the "Space Based Communication Policy of India – 2020" and "Norms, Guidelines and Procedures for Implementation of Space Based Communication Policy of India – 2020". We shall fully comply with the conditions given therein.

b) We hereby agree to provide all the necessary technical and management details as per the requirements and any additional information as and when sought.

c) We hereby commit that we have made an appropriate arrangement with the concerned foreign administration and the satellite operator (if applicable) such that the authorized orbital resources are eventually brought under Indian administration, through Indian ITU filing.

d) We hereby affirm that we understood the ITU process of filing, coordination, notification and registration for new orbit spectrum resources under Indian Administration. We agree to submit a new filing under Indian administration and comply with such requirements and to bear the applicable ITU fee and other charges towards the processes of acquiring new orbital resources. We also agree to provide periodic updates on the progress made.

e) We hereby affirm that the submitted interference analysis establishes the interference free operations and compatibility with Indian ITU filings (GSO & NGSO).

f) We understand that the authorization will be subject to review in case of any unresolved frequency coordination issue of Indian ITU filing of national importance with the concerned foreign satellite operator and/or administration.

g) We hereby agree to provide financial guarantee or insurance cover as determined by the authorizing authority, for the space assets owned by us towards fulfilment of nation's liability as per UN treaties to use the outer space.

h) We hereby agree to participate in the meetings/discussions, at our cost, with the Indian Authorities related to authorization and subsequent operations of the proposed space based communications.

i) We hereby agree to pay all the stipulated charges/fee towards authorization.

j) We hereby agree to provide the necessary status reports as sought by the concerned authorities about the implementation of our project (applicable for proposals to bring new satellites).

We hereby submit our proposal / application for due consideration for authorization.

Signature of the Authorized Signatory with Seal and Date

Annexure / Attachments:

a) …

b) …

c) …

Application for Establishment of Space Based Communication System for communications exclusively outside India (using Indian or Non-Indian orbit resources)

[Completed application may be submitted to IN-SPACe, Department of Space, Antariksh Bhavan, New BEL Road, Bangalore 560 231]

1. Entity Information

a) Name of the Indian Entity:

b) Category of the Indian Entity* :

(* Indian government body, PSU/CPSE, Indian registered non-Government Private Entity (NGPE), company, start-up, MSME, industry, academic institution, others (pl specify))

c) Details of the Indian Entity (include registration details) :

d) Financial profile :

e) Address of the Registered Office:

f) Ownership pattern (FDI if any):

g) Address of the Corporate Office:

h) Address for Correspondence:

i) Name, Designation and contact details of Authorized Person:
Mobile No.:
Telephone No.:
Fax No.:
Email address:
Website:

2. Technical Information

a) Space segment details (satellite bus, propulsion, operational life, mass, power etc):

b) Payload details:

c) Service area:

d) Target services:

e) Location and details of TT&C station(s)

f) Location and details of Satellite Control Center (SCC):

3. Orbit-Spectrum Information

a) Orbital resource details (including ITU publication details):

b) Frequency band and coverage details:

4. Management Information

a) Plan for satellite realization:

b) Launch service to be used:

c) Expected date of launch:

d) Arrangements for third party liability insurance:

e) Project schedule with key milestones:

f) Estimated budget & funding details:

(Please provide detailed information a annexures/enclosures, as necessary)

5. Undertakings

a) We hereby affirm that we have read and understood the "Space Based Communication Policy of India – 2020" and "Norms, Guidelines and Procedures for Implementation of Space Based Communication Policy of India – 2020". We shall fully comply with the conditions given therein.

b) We hereby agree to provide all the necessary technical and management details as per the requirements and any additional information as and when sought.

c) We hereby affirm that the submitted interference analysis establishes the interference free operations and compatibility with Indian ITU filings (GSO & NGSO).

d) We hereby agree to provide financial guarantee or insurance cover as determined by the authorizing authority, for the space assets owned by us towards fulfilment of nation's liability as per UN treaties to use the outer space.

e) We hereby agree to participate in the meetings/discussions, at our cost, with the Indian Authorities related to authorization and subsequent operations of the proposed space based communications.

f) We hereby agree to pay all the stipulated charges/fee towards authorization.

We hereby submit our proposal / application for due consideration for authorization.

Signature of the Authorized Signatory with Seal and Date

Annexure / Attachments:

a) …

b) …

c) …

Application for D. Establishment and utilization of NGSO communication systems for service over India

[Completed application may be submitted to IN-SPACe, Department of Space, Antariksh Bhavan, New BEL Road, Bangalore 560 231]

1. Entity Information

a) Name of the Indian Entity:

b) Category of the Indian Entity* :

(* Indian government body, PSU/CPSE, Indian registered non-Government Private Entity (NGPE), company, start-up, MSME, industry, academic institution, others (pl specify))

c) Details of the Indian Entity (include registration details) :

d) Financial profile :

e) Address of the Registered Office:

f) Ownership pattern (FDI if any):

g) Address of the Corporate Office:

h) Address for Correspondence:

i) Name, Designation and contact details of Authorized Person:
Mobile No.:
Telephone No.:
Fax No.:
Email address:
Website:

2. Technical Information

a) Space segment details (constellation, number of satellites, active & backup satellites):

b) Payload details:

c) Service area:

d) On-board beams & switching capability:

e) Target services:

f) Location and details of TT&C station(s)

g) Location and details of Satellite Control Center (SCC):

h) Whether TT&C station/SCC located outside India, if yes details of arrangements made to utilize them:

i) Encryptions details:

j) Details of access for security assessments:

k) Details of access for interference monitoring:

l) Gateway details:

m) User segment & OEM details:

3. Orbit-Spectrum Information

a) Orbital resource details (including ITU publication details):

b) Frequency band and coverage details:

c) Details of arrangements made for using orbit resources (please furnish the relevant documents):

d) Interference analysis with respect to Indian ITU filings (GSO & NGSO).

e) Details of coordination agreements made for the use of proposed orbital resources:

4. Management Information

a) Service start date:

b) Details of backup/redundancies:

(Please provide detailed information a annexures/enclosures, as necessary)

5. Undertakings

a) We hereby affirm that we have read and understood the “Space Based Communication Policy of India – 2020” and “Norms, Guidelines and Procedures for Implementation of Space Based Communication Policy of India – 2020”. We shall fully comply with the conditions given therein.

b) We hereby agree to provide all the necessary technical and management details as per the requirements and any additional information as and when sought.

c) We hereby affirm that the submitted interference analysis establishes the interference free operations and compatibility with Indian ITU filings (GSO & NGSO).

d) We hereby commit to establish user gateways, interference monitoring facilities and cyber security control & monitoring in India and provide access GOI as needed.

e) We hereby agree to provide financial guarantee or insurance cover as determined by the authorizing authority, for the space assets owned by us towards fulfilment of nation's liability as per UN treaties to use the outer space (applicable if the applicant proposes to bring in its own constellation).

f) We understand that the authorization will be subject to review in case of any unresolved frequency coordination issue of Indian ITU filing of national importance with the concerned foreign satellite operator and/or administration.

g) We hereby agree to participate in the meetings/discussions, at our cost, with the Indian Authorities related to authorization and subsequent operations of the proposed space based communications.

h) We hereby agree to pay all the stipulated charges/fee towards authorization.

We hereby submit our proposal / application for due consideration for authorization.

Signature of the Authorized Signatory with Seal and Date

Annexure / Attachments:

a) …

b) …

c) …

Application for Authorization for Establishment of Ground Segments for Space Asset Operations in Indian Territory (TT&C station(s) and SCC)

[Completed application may be submitted to IN-SPACe, Department of Space, Antariksh Bhavan, New BEL Road, Bangalore 560 231]

1. Entity Information

c) Name of the Indian Entity:

d) Category of the Indian Entity* :
(* Indian government body, PSU/CPSE, Indian registered non-Government Private Entity (NGPE), company, start-up, MSME, industry, academic institution, others (pl specify))

e) Details of the Indian Entity (include registration details) :

f) Financial profile :

g) Address of the Registered Office:

h) Ownership pattern (FDI if any):

i) Address of the Corporate Office:

j) Address for Correspondence:

k) Name, Designation and contact details of Authorized Person:
Mobile No.:
Telephone No.:
Fax No.:
Email address:
Website:

2. Technical Information – TT&C Station

a) Location of TT&C station

b) Frequency band & Frequency range:

c) Antenna size:

d) Max uplink power:

e) Tracking capability:

f) Details of SCC operating the TT&C station:

g) Details of satellites planned for tracking:

3. Technical Information - Satellite Control Center (SCC)

a) Location of SCC:

b) Details of satellites planned for monitoring, tracking & controlling

c) Orbit details of the satellites:

d) Details of Back-up or mirror SCC:

e) Details of arrangements for controlling third party satellites:

4. Management Information

a) Expected date of commencement of operations:

b) Project schedule with key milestones:

c) Estimated budget & funding details:

(Please provide detailed information a annexures/enclosures, as necessary)

5. Undertakings

a) We hereby affirm that we have read and understood the "Space Based Communication Policy of India – 2020" and "Norms, Guidelines and Procedures for Implementation of Space Based Communication Policy of India – 2020". We shall fully comply with the conditions given therein.

b) We hereby agree to provide all the necessary technical and management details as per the requirements and any additional information as and when sought.

c) We hereby agree to participate in the meetings/discussions, at our cost, with the Indian Authorities related to authorization and subsequent operations of the proposed TT&C station and/or SCC.

d) We hereby affirm that proposed ground segment shall not cause harmful interference is caused to other operational satellite networks. In case of any complaints received we hereby agree to eliminate such inferences immediately and we agree to shut off the operations if the interferences cannot be eliminated.

e) We hereby agree to obtain the necessary clearances from Wireless Planning and Coordination Wing (WPC) and Network Operations Control Center (NOCC) under Department of Telecommunications, GOI.

f) We hereby agree to pay all the stipulated charges/fee towards authorization.

We hereby submit our proposal / application for due consideration for authorization.

Signature of the Authorized Signatory with Seal and Date

Annexure / Attachments:

a) …

b) …

c) …