

SIA-India Inputs on

Draft Space Based Communication Policy of India- 2021
(Spacecom Policy 2021)

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Table of Contents

Introduction.....	2
Section A - Industry Observations that are required to be addressed adequately under Policy Framework.....	3
Section B - Industry response to the Draft Spacecom Policy 2021.....	7
Annexure 1 - Extracts from "Rules of Procedures"(Part A1 Page 6) ITU WRC-19.....	14

Introduction

The first Satcom Policy was released in 1997 and a set of 'norms, procedures and guidelines' was notified in 2000 to support the 1997 Policy. However, both the 1997 Policy and the 2000 guidelines have been past the date while India's space activities have grown exponentially over the past decades. India, despite being one of the space faring nations and having a journey of over five decades into space, is devoid of national space laws.

An encouraging step was the government prioritizing reforms for the India space sector to promote private sector participation. Private players becoming co-travelers in the country's space journey would be a highly encouraging stimulus for the industry and would create tremendous opportunities for greater innovation, R&D, employment, investments and connectivity.

The establishment of the 'Indian National Space Promotion and Authorization Centre', or IN-SPACe to act as a facilitator and regulator of space activities in India as a single window nodal agency are highly encouraging measures in this direction.

The Department of Space has released the Draft Spacecom Policy 2021, however the pace of industry developments within the country and outside, have accelerated to a point where the need is felt for the draft policy 2021 to take into consideration not only some gaps in the draft policy but also any subsequent policy change in the space sector and other related sector such as telecom, to form an overarching and comprehensive policy.

This paper discusses SIA-India suggestions/inputs/comments to the Draft Policy, highlighting critical areas which have any ambiguity or need adequate addressing in the Draft Policy. The suggestions are categorized as

- A. Industry Observations that are required to be addressed adequately under Draft Spacecom Policy Framework
- B. Industry response to the contents Draft Spacecom Policy 2021

Section A - Industry Observations that are required to be addressed adequately under Policy Framework

1. Any Policy should have time-tagged quantitative targets to work on. This enables the entire regulatory, economic, technical, services and financial eco system to be built to achieve those targets. In the present draft policy there are no such targets mentioned. The current Indian space economy is a mere 2-3% of world space economy. The following could be considered in formulating a stated target in the SpaceCom Policy.

SIA-India Suggestion: The target for SpaceCom Policy could be achieving 10% share of global market by 2030 and work towards enhancing India Entities capabilities, introducing new services, new technologies, ease of doing business, etc.

2. Another target for the SpaceCom policy to be achieved could be reach of satellite based communication services. By very nature Satellite can reach any nook and corner of the country. While the National Digital Communications Policy (NDCP-2018) explicitly mentions the strengthening of Satellite communications technologies in India, however, due to various reasons the extent to which satellites could be used in the telecom infrastructure of the country has not been done. In 1980s the telecom policy had an objective of accessing a PCO within 5 Kms radius of any place. It has given a big boost to establishment of PCOs, job creation and access to all to the telecom network. A similar objective could also be placed for satellite reach.

SIA-India Suggestion: Anyone should be able to reach a broadband connectivity with 500 m radius. Satellite Communications should play a major role. Such an objective will create a great demand for satellite capacity, terminals, manufacture, deployment, installation and maintenance of such a network, use of alternate sources of energy, and local job creations. To this extent, the foremost section of the policy statement could be “promote use of space based communications and enhance communication services in the country through the optimum use of Indian and non-Indian space assets”

3. Improving the capabilities of Indian entities in terms of technology, skills, and resources in Satcom related areas is a must for realizing the policy objectives. Wherever required the private entities can also be encouraged to enter into tie-ups with foreign entities.

SIA-India Suggestion: To aim at being globally competitive, Special Satellite Zones should be established facilitating greater/better private sector participation (both

Indian and Foreign Entities), encompassing favourable opportunities for investment/FDI, tax holidays, other tax benefits, liberal labour regulations, rebates and lower custom duties, special quotas, etc.

4. In-SPACe has the role of authorizing establishment, operation and utilization of space systems by Indian entities. However, the role of IN-SPACe vis-a-vis the existing satellite networks providing services covering India is not clear. It is assumed that INSAT/GSAT systems being government owned and operated, would have been deemed to have been authorized. How IN-SPACe would be dealing with transponder leases from foreign satellite systems providing services over India is not clear. Will these systems require a fresh authorization from IN-SPACe either immediately or at the time of next renewal of lease?

SIA-India Suggestion: While authorizing foreign space systems to provide services over India through lease satellite capacity, JVs between foreign space systems operators and Indian entities to be encouraged. This could facilitate, in a way, the requirement bringing the orbital resources under Indian Administrative Control. The Spacecom Policy needs to provide clarity on the above.

5. The Spacecom policy should encompass the objective of 'Make in India' to encourage industrial maturity for Atmanirbhar Bharat' in space for Civil and Defence applications.

SIA-India Suggestion: The following measures may be considered towards these objectives

- a. Encourage local manufacturing of hardware for space applications by Foreign Service providers desirous of providing spacecom services within the country.
 - b. The Indian Space industries eco-system output should also be eligible for discharge of offset obligations under the Defence acquisition procedure.
 - c. Support a Production linked incentive (PLI) scheme for space sector as such schemes for other sectors have demonstrated success.
6. A capacity and capability base has been invested in by the private sector in India. The space industry in India has proven time and again its mettle, be it their contribution to connectivity needs across the length and breadth of the nation, Missions like Mars orbiter mission, launch programs like PSLV or applications on earth observation applications, payloads, analytics and insights. There needs to be a roadmap for utilizing this capacity and capability that has had investments based on projections made earlier.

SIA-India Suggestion: The policy should secure the investment done by the Indian Space industries eco-system developed by ISRO in the last 25 years and invested by Indian private sector to realize the same.

7. There has been a long pending demand from Industry to have a single window clearance for operations against the current multi-department, inter ministry clearances. Section 6.8.1 and 6.8.2 require approval/license/clearance of Ministry of Information and Broadcasting (MoIB) and Department of Telecommunications (DoT), Ministry of Communications for relevant services.

SIA-India Suggestion: A single window clearance mechanism either under DoS or DoT needs to be specified in the spacecom policy to avoid the current hassles of obtaining multiple clearances from various authorities. In-SPACE or similar such body be authorized to front-end the process and interface with other departments/ministries and provide a single window clearance window mechanism. For establishment and operation of space systems and providing satcom capacity to service providers, to gain more confidence, particularly for private sector (both Indian and Foreign Entities), the Policy should also specifically provide for a Single Umbrella Integrated Framework with strict timelines and schedule for speedy disposal and automated authorization that includes departmental Infrastructure i.e establishment of user friendly, transparent, competent, single portal/system/interface/s.

8. The business models in satellite capacity industry factor in life of space assets and their delivery capacity over this lifespan. Investment decisions rely on a stable and certain spectrum environment during this period. There is a similar impact during manufacturing and design of space assets. There needs to be certainty of spectrum access as the manufacturing of space assets and ground network products has serious consequences if specifications are changed during or after construction and deployment. Harmonization ensures interoperability and allows cost effective development at semiconductor level, lowers cost of manufacturing, and interference free operation of services.

SIA-India Suggestions: The Spacecom policy should align satellite spectrum identification and allocations with the ITU identified radio frequency spectrum use for the ITU region that supports global harmonization of the spectrum for space activities and protect existing satellite investments from harmful radio frequency interference.

9. Access to financial resources at low rates of interest to Indian private entities is crucial for the success of Spacecom Policy. It is well known that interest rates in India are very high compared to foreign countries thereby hindering the competitive pricing of Indian manufactured space systems.

SIA-India Suggestion: Government needs to create special facilities to make non-banking and other institutional funds available to Indian entities at rates comparable to the foreign countries. The above is to be suitably reflected in the Spacecom Policy.

10. There is a need to have 'made-in-India' component in the space systems for growth of Satcom systems and for job creations, etc. Therefore while providing authorizations to space systems, due weightage to be given to the 'made-in -India' component of the space system.

SIA-India Suggestion: Towards this need, JV's between foreign entities and Indian entities should be encouraged. The above is to be suitably reflected in the Spacecom Policy.

Section B - Industry response to the Draft Spacecom Policy 2021

1. **Section 4.2.8** mentions that Indian entities are encouraged to obtain authorisation for establishment and operations of space system and provide satcom capacity to service providers, without requiring further permissions/clearances from IN-SPACe. The section on important terms defines Authorization as the permission granted by In-Space.

SIA-India Suggestion: The intent of this section is needs clear articulation and currently leaves room for alternative interpretations with respect to 'authorisation' required outside of In-SPACe

2. **Section 5.4** mentions "An Indian entity which owns and operates a space system shall be liable for any potential damages caused to other space systems or objects in outer space and its environment. This obligation shall be fulfilled by the Indian Entity by providing a financial guarantee or insurance cover to a sum, as determined by IN-SPACe by taking into account the risks involved in nature and operations of that space system in outer space." Thereby creating an undue burden on private entities especially start-ups with limited financial capacity and resources.

SIA-India Suggestion: The norms for commercial operations and Tech demonstrations be separately defined for purposes of Insurance and other requirements such as application procedure/financial guarantees etc. The Spacecom policy can create a framework based on the best practices of International economies that have created mechanism for:

- a. Limiting liability for private entities;
 - b. State guarantee for excess liability claims;
 - c. Limiting liability of private entities to the extent of their responsibility;
 - d. Waiver of liability and insurance for space activities in public or government interest; and
 - e. The Limitation period for liability claims.
3. **Section 5.5** mentions "Indian National Space Promotion & Authorisation Center (IN-SPACe), constituted by Government of India, under Department of Space (DOS), shall accord necessary authorisations for all space assets for communications to or from Indian Territory as per the applicable acts, regulatory provisions & exemptions and statutory guidelines." There should be a specific mention that In-Space will be an independent body otherwise it is an additional layer of another government department with responsibility for authorization. The draft Spacecom policy of 2020 had a specific mention of In-SPACe being an independent body.

SIA-India Suggestion: In-SPACe should be an independent body similar to Telecom Regulatory Authority of India (established by an act of parliament) that will empower In-SPACe to offer regulatory recommendations, and authorizations that are not influenced by the government run companies under the same ministry.

4. **Section 6.5** mentions that “Any space system realised in India, but operated as a foreign owned space system, without any liability to Government of India, does not require authorisation of IN-SPACe.”

SIA-India Suggestion: This needs clarity on whether currently used foreign satellite assets qualify, or whether future LEO constellations would qualify under this clause. With about 50% of India’s current consumption in the commercial market (DTH/Media/VSAT) coming from capacity on foreign satellites, it is important for the national spacecom policy to clearly address how this consumption of services carried on foreign space assets would be addressed going forward.

5. **Section 6.7.4** mentions “An Indian Entity seeking to establish and operate space asset through their own or leased space assets shall carry out in-depth interference analysis substantiating interference free operations and compatibility with ITU filings of India and other countries, for GSO & NGSO systems.”

SIA-India Suggestion: The need for the private entity to carry out “in-depth interference analysis” is very open ended. The policy needs to define the interpretation and requirements for the analysis required as per policy based on global best practices.

6. **Section 6.7.5** mentions “Use of Non-Indian orbital resources by GSO space systems shall be permitted subject to an appropriate arrangement by which such orbital resources are eventually brought under Indian administration, through Indian ITU filing. The authorisation 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 space system operator of such asset and the concerned foreign administration shall also agree and commit for the arrangement of bringing the orbital resources eventually under Indian administration.”

SIA-India Suggestion: As per the 2021 Edition of the ITU Radio communication Sector “Rules of Procedures” (Part A1 Page 6) ITU WRC-19 decided to deny requests

for change of notifying administration. This implies transfer of orbital rights will not be permitted by ITU except in the intergovernmental organization. In dealing with Indian orbital Resources and with non-Indian Orbital resources it would be necessary to follow ITU-RR procedures, particularly ITU coordination and Notification process for space systems, and provisions with respect to coordination and for bringing the filings under Indian Administration Control. It is best if the DoS and/or WPC describes the mechanism in detail for implementing this requirement. If ITU provisions do not permit the same, then some other means needs to be considered. Relevant extracts are attached as annexure 1.

7. **Section 6.7.6** mentions “The authorisation accorded to an Indian Entity will be subject to review in case of any frequency coordination issue with the concerned foreign space system operator and/or administration pertaining to any of the Indian ITU filings of national importance.” The possible review of an Authorization once already granted, in the event of any open Indian ITU coordination that is ongoing with a concerned foreign space system operator raises a risk is that after bringing in FDI and obtaining the necessary Authorizations for a particular space asset at a specific location, the Authorization could be reviewed for the lack of ITU coordination at any other unrelated orbital location.

SIA-India Suggestion: This is a step with grave ramifications and needs to be articulated for specificity and clarity. The qualification for such instances may be limited to any specific frequency coordination issue with the concerned foreign space system operator and/or administration, in the event that such Indian ITU Filings follows the ITU procedures and guidelines, and in the event that the specific Indian ITU filings pertains to space assets with coverage over India, in the domains of national security, strategic communications and surveillance.

8. **Section 6.7.9** mentions “The authorised Indian Entity shall ensure all the measures for orbital safety and sustainability of space environment. Mitigation of space debris at the end-of-life shall be addressed as per IADC guidelines and its revisions. Indian Entities shall address collision risks by following stipulated aggregate collision probability limit.”

SIA-India suggestion: The IADC guidelines are an important step taken by countries to mitigate space debris and ensure space sustainability. We acknowledge India’s thought leadership in this sphere. However, some of these guidelines create significant costs for entities wishing to launch smaller satellites. It is also noteworthy that the guidelines are not binding on India or private organisations. Thus, we

recommend that need for adherence to these guidelines should be balanced with commercial viability, alternative approach, experimental value and national need.

9. **Section 6.7.12** mentions “The proposals of building space systems in India or launching from India or manufacturing ground/user segment in India, thus creating opportunities for growth of satcom industry, employment generation and bringing FDI into the country may be encouraged while according authorisations.”

SIA-India Suggestion: There needs to be a threshold for automatic entry route for foreign capital. The sectoral approvals may apply for investments above those thresholds. This will not only allow required funding for the private sector but also help in achieving the stated goals of industry growth and employment generation as well as bringing cutting edge technologies in the country. This will also need flexible models including special purpose vehicles for Joint ventures with due emphasis on ‘Make in India’ component and technology enhancements.

Further the latest FDI policy of India allows 100% FDI in ‘satellites’ with government approval, and 100% FDI in telecom services through automatic route. The description for these services is as follows:

- a. Satellites- establishment and operation, subject to the sectoral guidelines of Department of Space (**DoS**)/Indian Space Research Organisation (**ISRO**)
- b. Telecom services- All telecom services including Telecom Infrastructure Providers Category-I, viz. Basic, Cellular, United Access Services, Unified License (Access Services), Unified License, National/International Long Distance, Commercial V-Sat, Public Mobile Radio Trunked Services (PMRTS), Global Mobile Personal Communications Services (GMPCS), All types of ISP licenses, Voice Mail/Audiotex/UMS, Resale of IPLC, Mobile Number Portability Services, Infrastructure Provider Category-I (providing dark fibre, right of way, duct space, tower) except Other Service Providers

TT&C stations and SCCs will not fall under either of these categories, since they do not meet the description of the activities under these two headings. Hence, this creates uncertainty for investors wishing to invest in the creation of TT&C earth stations and SCCs. The Spacecom Policy should clarify that TT&C stations and SCCs do not fall under either of the FDI categories of ‘satellites’ or ‘telecom services’. This is an anomaly and needs to be addressed for coordinated regulations.

10. **Section 7.3** mentions “Replacements of operational satellites shall be ensured for continued use of the orbital resources.” And Section 7.4 mentions “Coordinated joint efforts shall be made by DoS and DoT to make adequate orbital resources available for augmenting the satcom capacity to meet growing demands.”

SIA-India Suggestion: With a separation of commercial functions from research and regulatory functions, it is recommended that the Indian private entities should have an equal opportunity to utilize the existing coordinated orbital slots as and when the renewal of satellites matures. The realization of replacement of satellites for the existing space systems should have a level playing field for the private industry as per global best practices.

11. **Section 8.3** mentions “Appropriate measures at national and International level shall be undertaken to mitigate interference that may emanate from terrestrial or neighbouring space assets to Indian orbital resources that are acquired through the ITU process.” India relies on communications to and from many approved and coordinated satellites, not all of which are under Indian registration.

SIA-India Suggestion: This section could be usefully broadened to include all ITU-recognized orbital resources that operate over India, as protecting all these communications from harmful interference is very much in the interest of Indian industries which rely on satellite communications. We would suggest that paragraph 8.3 be altered to note the importance of interference mitigation for all space systems, whether operated from Indian, or other countries’ orbital resources.

12. **Section 8.4** mentions “While identifying spectrum for new services at National and/or ITU level, coordinated efforts shall be made by the Concerned Ministries for ensuring the operational continuity of space assets.”

SIA-India suggestion: The issue of continuity is of particular importance with the debate over the allocation of the 28GHz frequency band. We recommend that the DoS should play an active role in coordinating with the DoT to ensure that the band is allocated to the satellite communication sector to ensure continuity for satellites launched by ISRO as well as for private satellites currently in use.

Towards augmenting the overall spectrum availability for different communication services in the country, and also encouraging the use of available capacity through Indian and non-Indian orbital resources; bringing-in the use of BSS capacity for DTH will be of help. In the absence of this, it will be very difficult to bring in additional spectrum for BSS services while the use of FSS spectrum for BSS will burden the spectrum availability for various FSS services.

13. **Section 9.3** mentions “Satellite communication programmes focused on societal development have been implemented in the areas of tribal development, social empowerment, health, education, disaster management, etc. Any such communication requirements, which address the societal need shall be pursued by

DOS. Such systems may be realised by DOS/ISRO with the involvement of stakeholder ministry (ies)/state governments /governmental agencies.” The current practice of opportunities for satellite communication needs for societal development being realized by DoS/ISRO alone with the involvement of stakeholder ministry/ministries, state governments, governmental agencies, disallows the private sector to engage in such opportunities.

SIA-India Suggestion: Government is one of the biggest users of the space systems. Therefore, even the Government requirements of space systems for social, strategic, disaster management, tele-education, tele-health, while being funded by Government, should also be realized through private industry. Also regarding the earth observation insights and applications, DoS/ISRO to evangelize such applications with relevant stakeholders and help them bring such opportunity to GEM (Government E-Marketplace) for private sector to participate in such opportunities. This will not only develop a competitive environment, but will also encourage innovation and private sector industry maturity.

14. While **section 10** states the need for a “Provision of timely and responsive regulatory environment” the details under the section do not find any mention of either the need for defined SLAs, turnaround times etc. This has been the bane for the private sector in the past experiences of obtaining permissions/clearances/authorisations.

SIA-India Suggestion: The SLA for the response to industry application be defined and a deemed approval process be allowed for applications not responded within the specified SLA timelines.

15. **Section 10.5** mentions “DOS shall be the nodal department in respect of space activities as per the Government of India allocation of business rules and shall bring out policy guidelines and additional regulations in respect of space based communications and shall fulfil the obligations as signatory to UN registration convention.” Also **section 10.7** mentions “DOS being the nodal department shall be responsible for implementation of the Spacecom Policy-2021.”.

SIA-India Suggestion: IN-SPACe is expected to play a key role in the implementation of SpaceCom Policy. It would be helpful for the SatCom industry to understand the mandate and the constitution of IN-SPACe. The Gol order on the constitution, mandate and composition of IN-SPACe should be included as an Annexure to the SpaceCom Policy.

16. **Section 10.6** mentions that “Any dispute/conflict arising out of activities related to Space based communication systems and services has to be resolved as prescribed in Space Act.

SIA-India Suggestion: In absence of a space act currently to be enacted by parliament, this section becomes infructuous. The Spacecom Policy should clarify whether the legislation being referred to is the Space Activities Bill 2017. Additionally, the Space Activities Bill 2017 does not mention a dispute resolution mechanism between private entities. Till such time an Act comes into being, alternative dispute resolution mechanisms need to be put into place.

17. While defining **important terms**, the term “Ground control segment” is not defined and leaves room for misinterpretation

SIA-India Suggestion: The term may defined for completeness and avoiding misinterpretation.

Annexure 1 - Extracts from "Rules of Procedures"(Part A1 Page 6) ITU WRC-19 (Reproduction)

CMR19/569

	Group of named administrations submitted through item A.1.f.2 (list of administrations)	Group of named administrations submitted through item A.1.f.3 (inter-governmental satellite organization)
<u>Case 2-4</u> : The group decides to change its notifying administration	WRC-19 decided that the Board shall deny such requests (see Section 3 of Document CMR19/569).	Possible based on the Rules of Procedure concerning the treatment of change of notifying administration which acts as the notifying administration of a satellite system on behalf of a group of named administrations. RRB to consider the matter on a case-by-case basis if the Rules are not applicable.
<u>Case 2-5</u> : The group decides to transfer the satellite system to one of its members, acting independently of the group	The satellite system shall not be transferred to another notifying administration.	RRB to consider the matter on a case-by-case basis. WRC-19 confirmed the approach so far used by the Board for treating such cases and further decided that a letter from an appropriate responsible authority of this intergovernmental satellite organization is required to confirm their agreement with the change of notifying administration (see Section 3 of Document CMR19/569).
<u>Case 2-6</u> : The group decides to transfer the satellite system to an administration, which is not a member of the group	The satellite system shall not be transferred to another notifying administration.	The satellite system shall not be transferred to another notifying administration. WRC-19 decided that the Board shall deny such requests (see Section 3 of Document CMR19/569).
<u>Case 2-7</u> : The group is discontinued	If the notifying administration ADM does not request the suppression of the satellite system(s), a modification to the last special section of the existing satellite system(s) is published with ADM as the notifying administration and All administrations removed from the list published under item A.1.f.2. The list of coordination requirements is unchanged.	Unless for situations addressed under Case 2-5, the existing satellite systems are suppressed.