

Draft Space Based Remote Sensing Policy of India -2021: Comments by ISpA

1. ISpA thanks DoS for consideration to give us an opportunity to project views of the Space Industry.

2. We have discussed some of the issues in the morning which have been taken cognizance of. Since there is an overlap of issues, we would request consideration to apply them in this Remote Sensing Segment also. These issues relate to both administrative and technical aspect as follows:-

Administrative & Management Aspects

(a) **Time-bound Approvals**. There is a need to shorten time-lines upto 4 weeks for grant of approvals after submission of an application. IN-SPACe could consider putting in place a "Time-Sensitive Deemed Approval" (TSDA) mechanism. This could be undertaken for matters of routine nature as well as approvals (to the extent possible). This would be conceptually similar to what has been requested for the SpaceCom Policy.

(b) **Single Window Mechanism**. The key aspects for consideration are as follows:-

Structure & Functioning

(i) IN-SPACe may be designated as the Single-Window for all Government of India approvals for subjects mentioned in the Draft Space RS Policy.

(ii) IN-SPACe could interface with other Government Departments which would include, DoS, ISRO, DoT, TRAI and MoIB as well as any other department, where considered necessary, by IN-SPACe.



(iii) A Space Co-ordination Committee (SCC) may be constituted under IN-SPACe, comprising of all interdepartmental stakeholders, may facilitate fast track review and approval of proposals. The SCC could meet fortnightly or monthly for fast-track review and approval of cases.

Technical Aspects

(iv) An **On-line web portal** which eliminates need for coordinating between multiple government offices. Some aspects which merit attention from Implementation perspective are placed at Annexure-A for reference.

(i) Mechanism for monthly interactions, organized by IN-SPACe with all stakeholders, to fast track review and approval of proposals.

(ii) Information could be in terms of simplified templates which could cover, (1) contact details of nodal agency under each category; (2) guidelines for applicants, criteria for approval, steps for processing application; and, (3) pricing etc.

(c) **Transparent Process Tracking Mechanism**. Similar to processes discussed for SpaceCom Policy by making a Web-based Portal for submission of application and monitoring of progress of approval would go a long way in bringing transparency. Challenges to clearance need to reflected with time sensitivity to facilitate early response from applicant and completion of approval process within four weeks. Similarly, permissions for Data linked clearances etc also need to follow a similar approach.

(d) **Orbital Slots for RS assets.** Relevance of orbital slots for Remote Sensing Policy may be considered, where necessary.



(e) Awareness of GoI policies, ISRO facilities & Resources for supporting and handholding Indian Space Industry. A web-portal based on transparent mechanism to facilitate "Awareness and Actionable Information" on various aspects relating to ISRO facilities available for Indian Industry, would be of immense help. Please refer Annexure-A for details.

(f) **Insurance of Space Assets**. Similar to what was discussed in the morning.

(g) **Level Playing Field for Private Indian Players (refer para 7).** The Indian Space Industry needs to be considered as a Co-Traveler (part of Comprehensive National Space Capability) including the strategic domain. All-encompassing guidelines may be formulated to facilitate empaneling Indian Companies (Indian promoted and majority owned companies) to participate in sensitive areas of work.

(h) **Incentivization** They may be similar lines as discussed during deliberations on the Draft SpaceCom policy.

(j) **Protection of IPR, Trade Secrets & Commercial Interests**. An accountable mechanism may be created to ensure that submissions made to IN-SPACe as a single window, are handled on need-to-know basis and interest of the applicants are protected. This would include legal liabilities and penal provisions in case of violations.

(k) **Formulation of Standards and Testing Infrastructure**. Policy support may be considered to creating Indian Standards and Testing Infrastructure for strategic self-reliance as well as removing possibilities of foreign interference in Indian Space Ecosystem.

(l) **Registration of Space Assets:** Consideration may be given for registration of the Space Asset as a one-time requirement which could be done by the OEM or an authorized representative of the OEM. After



that the OEM or the authorized representative should be able to provide data to all users whether in government sector or the private sector directly without routing through.

Technical Aspects

(m) Need for Policy Harmonization between multiple GoI Policies & Guidelines. There are multiple overlapping policies, guidelines that govern geospatial data, remote sensing date, communication etc which have been issued by GoI from time to time. There is a need to synchronize these to avoid conflict. Please refer Annexure-B for issues that merit attention.

(n) Access, affordability, accessibility, availability and dissemination of very high resolution (design grade data) data through online methods to allow democratizing technology benefits for common man, infrastructure development and energizing GDP growth. The dissemination of both high-resolution as well as very high-resolution RS data through on-line methods like Webservices, through data provider's designated sites, could be a game-changer to fuel growth. Please refer **Annexure-C** for justification for the same.

(n) **Derivative Products:** Permission to create derivative products like DEM from satellite imagery without any restrictions.

(o) **Incentivizing optimum utilization of RS Data:** In order to realize the full potential of remote sensing data, Indian Registered Private agencies should be able to procure and use the data for offering services without restrictions. Responsible handling of sensitive aspects may be handled under case specific guidelines.

 (p) Application Development: Clause 5.4 in the draft policy, states
'DOS shall continue to undertake remote sensing applications including Page 4 of 12



research and development of algorithms/models, tools and techniques.' The Geospatial industry urges the government to take on a leadership role for developing an ecosystem of private players who can deliver such tools, models and techniques and provide value to both government and private sector clients. Indian Industry needs to be considered as a co-traveler in all dimensions of Space Industry.

(q) Section 5.4: Categorization of Data based on resolution may be reconsidered based on deliberations during the interactions on 28 oct 2021. Issues relating to Security classification, Definitions, handling of data from various bands etc which need consideration are placed at Annexure-D and need to be read in conjunction with para 2(m) and Annexure-B from point of view of resolution issues.

(r) **Section 5.2** : Only Indian entity can disseminate data of Indian territory, following the laid down procedure by IN-SPACe. This would need clarity for the following issues:-

(i) How do foreign satellite data providers supply remote sensing data to users in India?

(ii) Does this mean that platforms like Google, Bing, Mapbox, ArcGIS Online etc who disseminate very high-resolution satellite data through their platforms, will no longer be available in India?



Annexure-A

Awareness of GoI policies, ISRO facilities & Resources for supporting and handholding Indian Space Industry.

1. A web-portal based on transparent mechanism to facilitate "*Awareness and Actionable Information*" on various aspects relating to ISRO facilities available for Indian Industry, would be of immense help.

2. The information on website could include inputs on Facilities which enable, (1) Testing; (2) Calibration and validation of parts as well as components; and, (3) systems & sub-systems covering entire life-cycle of activities relating to both Processes as well as Verticals. We could examine this as follows:-

(a) Process Driven. R&D, Design, Manufacturing, Operations and Management.

(b) Vertical. Launch Vehicles & Related Infrastructure; Satellites;Payloads; Ground Segment including TTC & Satellite Reception Stations.

3. The Information regarding above aspects could include following details:-

(a) Policies, Funding and Support Resources of GoI.

(b) Information on ISRO facilities in terms of simplified templates which could cover, (1) contact details of nodal agency under each category; (2) guidelines for applicants, criteria for approval, steps for processing application; and, (3) availability, booking status & costing (for those facilities which are not free) to facilitate better resource utilization;

(c) Technologies available for ToT.



Annexure-B

<u>Requirement of Policy Harmonization with other Geospatial Policy &</u> <u>Guidelines issued/under consideration by Government of India</u>

1. There are a total of 15 national policies that govern geospatial information in India. Challenges faced are as under:-

(a) Every time a new policy is introduced it does not mention that the previous policy is null and void. This creates a confusion for the industry as many of these policies are often conflicting in nature.

(b) In specific, the industry hopes that soon both the Map Policy of Ministry of Defence is synchronized with the Remote Sensing Policy, since all inputs for mapping are derived from satellite image as primary source of data by user agencies, and having two separate policies with overlaps and sometimes conflicting viewpoints hinders in the development of special and value-added products by integrating topographic and other feature data from SOI maps with ortho corrected remote sensing data.

2. The RS Policy needs to be harmonized with 'Guidelines for Acquiring and Producing Geospatial Data and Geospatial Data Services including Maps' issued by Ministry of Science and Technology is a progressive document

3. The Geospatial Data Guidelines and Draft National Geospatial Policy clearly lay down the policy regarding handling of ALL geospatial data from ground survey, aerial platforms (drone/fixed wing) and satellite platforms. It addresses the handling of resultant geospatial data irrespective of means of data capture(ground, aerial and satellite) including restrictions, negative attributes and data residency. The Geospatial data policy allows respective domain regulators to govern the licensing, registration, security etc by



respective domain owners i.e. DGCA for aerial platforms and DOS for satellite platforms.

Recommended Approach

4. DoS may consider harmonization of the Space RS Policy in line with the recently released policy documents by GoI. In this regard, following aspects merit consideration:-

(a) It is recommended that the Geospatial data policy be the single policy governing the production, transfer, storage, enrichment and use of **geospatial data**.

(b) The threshold attributes specified in the guidelines/Geospatial data policy are sufficient and adequate to ensure security and must apply to all geospatial data regardless of technology used to produce/ capture the data.

(c) The additional restriction and classification of Remote Sensing data with resolution less than 50 cm as sensitive data is at variance with the guidelines or the geospatial policy.

(d) The respective regulators could continue to govern, license, certify, register and control the platforms used for capture of geospatial data ie, Ministry of Aviation/DGCA for airborne platforms (Drones, Aircraft) and Department of Space for Space based platforms (Satellites). However, these regulators cannot and must not enforce any further restrictions on the geospatial data to be captured by these platforms. This is particularly relevant as the draft space policy shared for stakeholder consultations specifies resolutions for capture of data using satellites.

(e) Need to delink resolution from accuracy considering the economic and technology development value of high resolution

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data. The guiding principle of the guidelines is to remove restrictions on geospatial data and make available geospatial technologies and data available commercially in the global market to Indian consumers (government and commercial customers). Keeping the above principle in mind, any additional restrictions on geospatial data collected from satellites via the space policy will negate the principles of the geospatial policy guidelines.

(f) India is a large country and geospatial data is required at scale and speed for applications. Satellites provide the desired speed and scale for collecting geospatial data and restricting this domain would be detrimental to development of the geospatial industry and the larger geospatial domain. INDIAN SPACE ASSOCIATION Bhumandal Se Brahmaand Tak

Annexure-C

Access, affordability, accessibility, availability and dissemination of very high resolution (design grade data) data.

1. Data dissemination through online methods would allow democratizing technology benefits for common man, infrastructure development and energizing GDP growth.

2. The dissemination of both high-resolution as well as very highresolution RS data through on-line methods like Webservices, through data provider's designated sites, could be a game-changer to fuel growth. Some major applications of the same are as follows:-

(a) Capability to measure, monitor, analyze, manage and predict infrastructure development; disaster management as well as multimodal transportation projects. Strong support for Flag-ship Gati-Shakti project of Hon' ble PM.

(b) Development of niche technology applications in strategic areas like AI, Autonomous Vehicles (which need real time geospatial data) as well as other linked 4th Industrial Revolution technologies for which we continue to have foreign dependence.

(c) Data availability would fuel data demand and incentivize Indian Industry to invest and develop in development of very high resolution RS platforms and constellations. This would in the long run help eliminate foreign dependence.



Annexure-D

Data Categorization Issues

1. Several issues relating to Data categorization, definition, product category need attention from a policy perspective. These have been covered in the succeeding paragraphs.

Security based Classification (may be connected with issues brough out in Annexure-B)

2. The satellite data has been divided into two categories – sensitive (Ground Sampling Distance \leq 50 cm) and non-sensitive (Ground Sampling Distance>50 cm) as per the Space RS Policy 2021. In this regard, following issues merit consideration:-

(a) Currently the remote sensing electro optical data at a resolution of 30 cm is widely available commercially. Also, the trend is for this 30cm resolution capacity to exponentially increase with more and more satellite data providers (ISRO themselves and foreign) launching newer satellites. All this 30 cm resolution data is available for purchase and a bulk of it is freely available through platforms like Google, Bing, Map box, ArcGIS Online etc. Thus, capping data to greater than 50cm resolution, would prove to be a huge disadvantage to Indian users and the proposed cap may please be reconsidered.

(b) Data greater than 50 cm resolution is considered as Nonsensitive. This is not aligned with the current production systems of satellite data providers. The data resolution available in the market are at 30 cm, 40 cm, 50 cm etc resolution. Most of the data providers will have to modify their production environments, which will be a huge challenge and will create a misalignment with the international markets.



(c) The policy is unclear on the types of remote sensing data (EO, SAR, SWIR, Thermal, Hyperspectral etc..) that is considered for the classifications of sensitive and non- sensitive datasets.

Clarity on Definitions

(d) The policy defines Ground Sampling Data in the section "Important terms" but uses "resolution" to define data categories. This can make things ambiguous and therefore the definition of "resolution" needs clarity- is it sensor GSD of satellite at nadir, is it pixel size, what if pixel size is resampled?.

Handling of Processed Data

(e) The policy also does not address the developing capability to digitally enhance the satellite data to higher resolution.