
NEED FOR IPR REGIME IN REMOTE SENSING DATA INDUSTRY IN INDIA

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INTRODUCTION

Satellites have opened the doors to a new space age that has enabled people to catch a glimpse of not only the planet they live in but also other celestial bodies in the Universe. The reason for capturing pictures of Earth is to unearth resources that are beyond the reach of human vicinity that can prove to be quite resourceful for economic, social, and scientific development. The remote sensing data is instrumental in making decisions pertaining to climate change, deforestation and disaster management etc and also achieving 2030 Agenda for Sustainable Development¹. The Government has recently opened the gates for private entities to enter the industry. This article deals with the issue of lack of relevant Intellectual Property Rights (hereinafter referred as “IPR”) Regime in the wake of privatisation and the impact it could have on the potential investors. Keeping that in mind, the article is divided into three parts- the first part deals with the contrasting ideals of Remote Sensing Data (hereinafter referred as “RSD”) and IPR, the second part deals with the areas in Remote sensing data where IPR could possibly be applied and finally the current Indian legal scenario pertaining to RSD industry and need for systematic laws pertaining to IPR.

IPR V. REMOTE SENSING DATA- TWO SIDES OF A COIN

Remote sensing is the process of obtaining information about objects and resources of Earth from the space using remote sensor cameras mounted on satellites by making use of the properties of electromagnetic waves emitted, reflected or diffracted by the sensed objects². Since remote sensing is a space activity, it must be carried out for the benefit of all the countries³. This implies non-discriminatory access of remote sensing data to all countries. The

¹ Report of the Committee on the Peaceful Uses of Outer Space, GA, 72nd Sess, Supp No. 20, UN Doc A/73/20 <https://undocs.org/pdf?symbol=en/A/73/20> (Last visited Nov 27, 2021)

² NATIONAL OCEAN SERVICES, What is remote sensing? (noaa.gov) (Last visited Nov 27, 2021)

³ UNOOSA, GA Res 41/65, *Principles Relating to Remote Sensing of the Earth from the Outer Space*, UN Doc (1986), https://www.unoosa.org/pdf/gares/ARES_41_65E.pdf (last visited Nov. 27, 2021)

reason behind the need for RSD is that both meteorological as well as earth resources can be studied by researchers to understand the state of existence of resources and environment which can act as a tool to monitor environmental conditions like air and water pollution, potential natural disasters, etc⁴. It is perhaps because of this utility of RSD and the impact it could have on the happiness of greatest numbers (public interest), attempts are made by the international community to make it universally accessible.

Intellectual Property Rights are rights pertaining to the property created by the intellect or creativity of the human mind. As a result of technological advancements, apart from the already existing rights like patent, copyright etc, there is a new form of right which is the sui generis right that is applicable in case of innovations that do not fall under any other category of rights⁵. One of the main objectives of IPR is to provide economic incentive to the creator of the intellectual property thereby not just protecting the original work but also stimulating innovation. IPR gives monopoly to the right holder and serves his/her private interest⁶.

Before focusing on the intersection of the two contrasting ideas, there is a need to acknowledge the existence of complexity in this intersection and highlight the need to segregate remote sensing data. The segregation of data helps identify when IPR comes into the play⁷. The Remote Sensing data is broadly classified into⁸

1. Primary or Raw or Unenhanced Data
2. Processed Data or Enhanced Data

The data are captured in their unenhanced or raw form which is universally available to everyone⁹. These raw data are processed to make them usable¹⁰. Entities interested in extracting

⁴Report of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space, UNOOSA, UN Doc A/CONF.101/10 (1982), https://www.unoosa.org/res/oosadoc/data/documents/1982/aconf/aconf_10110_0_html/A_CONF101_10E.pdf (last visited Nov 27, 2021)

⁵Mr. Malay Adhikari, *Legal Regime of Intellectual Property Rights of Spatial Data with Special Reference to India*, GEOSPATIAL FORUM PN 262 (2011) <https://geospatialworldforum.org/2011/proceeding/pdf/Malay%20AdhikariFullPaper.pdf> (last visited Nov 27, 2021)

⁶ Ibid

⁷J. Richard West, *Copyright Protection for Data Obtained by Remote Sensing: How the Data Enhancement Industry Will Ensure Access for Developing Countries*, Volume 11 Issue 2 Fall NW J INT LAW BUS 403, (1990), <https://core.ac.uk/download/pdf/230967639.pdf> (Last visited Nov 27, 2021)

⁸ Supra note 3, See Principle I

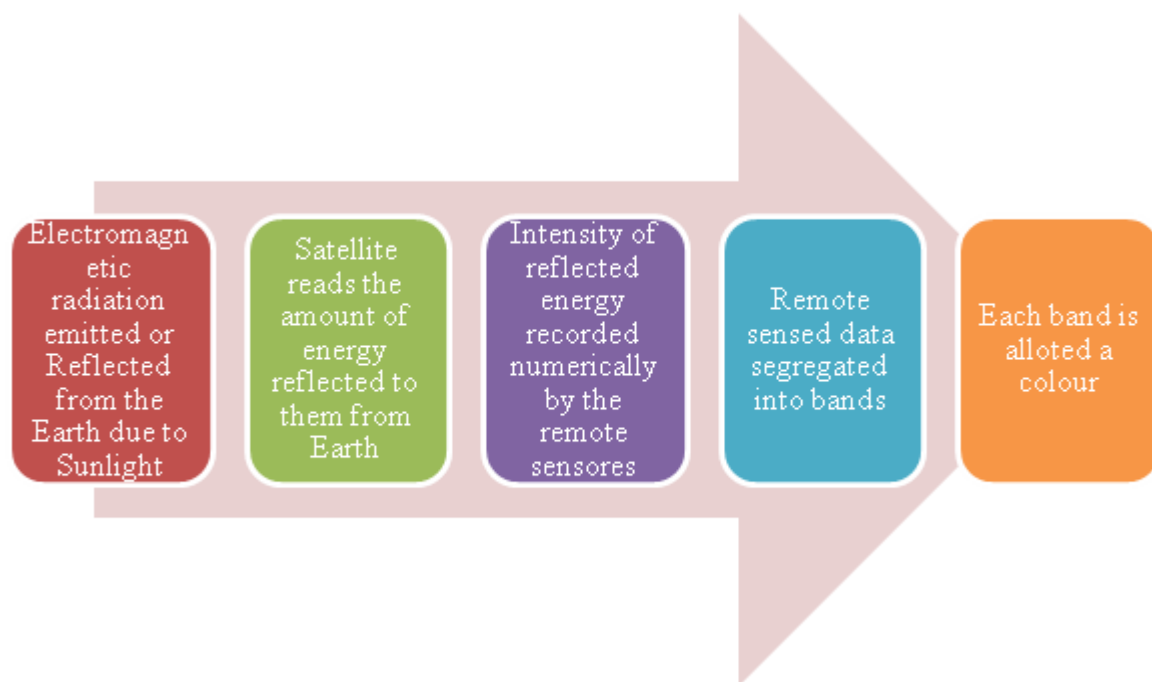
⁹ Supra note 7

¹⁰ Supra note 8

further information for commercial purposes can customize the data by applying their creative minds to enhance such raw data to suit their purposes of study¹¹. Now, let us see the role IPR plays in remote sensing data.

IPR IN REMOTE SENSING DATA

In order to justify the need for IPR in the RSD industry, it is important to understand the process of capturing satellite images to spot the areas where IPR could be applied.



The above Figure shows the steps involved in capturing satellite images. The First three steps are carried out with the help of remote sensing cameras without human intervention. The Satellite reads the Electromagnetic energy emitted from Earth¹². The remote sensors record the intensity of reflected energy numerically¹³. The data are transferred to the remote sensing ground stations whereby they are segregated into bands¹⁴. Each band is given a colour because the human eye is not sensitive to ultraviolet rays and also to create an image which could make sense to our eyes. Therefore, satellite images are not just any picture captured using a camera¹⁵.

¹¹ *ibid*

¹² NASA's LANDSAT Education and Public Outreach Team, *How LANDSAT Images are made?*, NASA, (June 2006), [Howmade4web.ppt \(nasa.gov\)](#) (last visited Dec 2, 2021)

¹³ *Ibid*

¹⁴ *ibid*

¹⁵ *Ibid*

Now, let us see where IPR could possibly play a role. Since there is no human intervention in the first three steps, the data so derived are raw data and are not part of the IPR regime. However, the European Union believes that even though there is no originality in deriving raw data, there are substantial investments made in them¹⁶. Also, they believe that, though raw data as such cannot be given copyright protection, databases must be given protection because there is creativity involved in arranging the data¹⁷. Therefore, remote sensing data arranged in an original database are given protection under the European Directive in the form of sui generis right¹⁸. This right is independent of any other right subsisting in the content¹⁹.

It is from the fourth step that remote sensing data is further developed by human intervention. These data are enhanced data and can be protected. Now, there is no clarity as to the stage in which a data would actually be considered for copyright because, there is ambiguity as to whether there is creativity involved in creating processed data, which is also a form of enhanced data but derived by processing the raw data to make them usable²⁰. Different countries have their own techniques and software to derive data from remote sensors and make them usable. Also, there is image processing software used to colour composite data to make it understandable to the users²¹. Therefore, we could say that since there is creativity involved in creating softwares and techniques to process the data, the result of such creative softwares which is the processed data, could be protected even though there is no creativity as such that goes behind processing data to make them usable. Finally, the data further enhanced by researchers and experts to suit their study involves creativity and therefore could be copyrighted²².

NEED FOR IPR IN REMOTE SENSING DATA INDUSTRY IN INDIA

The field of space in India is flourishing in terms of technological advancements and is believed

¹⁶ THE EUROPEAN SPACE AGENCY, *Remote Sensing Data*, ESA - Remote sensing data (last visited Dec 2, 2021)

¹⁷ Prof. Avv. Alessandro del Nino, *Protecting satellite and remote sensing data: from a copyright scheme to a full-and-open access scheme. Setting up access data policies: actual scenario and future perspectives*, ORANGE BUSINESS SERVICES SECURITY WORKSHOP FOR ESA AND HP, (Oct.15, 2009), BIA (alessandrodelnino.it) (Last visited Dec 2, 2021)

¹⁸ Supra note 16

¹⁹ Supra note 17

²⁰ Supra note 8

²¹ Supra note 12

²² Supra note 7

to become a \$50 billion industry by 2024²³. However, there is no clear policy or legal backing at present that paves way for achieving this objective. There are draft laws and policies which have not been brought to effect. The dissemination of remote sensing data is governed by RSD Policy 2011, and there is a draft RSD Policy 2020 which has been introduced. The Parliament has also introduced Draft Space Activities Bill, 2017 which is yet to be passed.

Draft Space Activities Bill, 2017

The Space Activities Bill, 2017 was introduced to provide a framework to create a favourable legal environment to promote space activities in India²⁴. Under this Bill, Sec 25 is of relevance to the context as it pertains to protection of IPR²⁵. The said provision provides that any invention created during space activity “shall be protected by any law time being in force” which points out to laws such as Patent Act, Copyright Act etc. This would imply that RSD would be protected under the Copyright Act 1956. The inherent complexities involved in RSD could make direct application of the Copyright Act difficult. Sec 25(2) is ambiguous with regard to ownership as it provides that any IPR created on board a space object in outer space which includes RSD will be the property of the Government which could create problems when commercialization comes to action.

Draft Remote Sensing Data Policy 2020

The Draft Policy 2020 aims to enable wider stakeholder participation and easy access of data²⁶. The policy does not distinguish between raw and processed data and is also silent on ownership aspects of the RSD. The focus of the policy is to stimulate innovation however; innovation will not survive without proper legal backing. Even if innovation is the focus, there is eligibility and authorisation required to acquire data and at a prescribed cost which implies lack of free accessibility of data. This is not going to accelerate Research Development and innovation. The Government still has considerable control over the data²⁷ and this can hamper the initiative

²³ T E Narasimhan, *Space sector can hit \$50 bn by 2024, needs policy support: Antrix-PwC study*, BUSINESS STANDARD (Jan. 31, 2020), *Space sector can hit \$50 bn by 2024, needs policy support: Antrix-PwC study* (business-standard.com) (Last visited Dec 3, 2021)

²⁴ Draft Space Activities Bill 2017, No.E.11020/2/2015-Sec-VI, Department of Space, 2017(India), *Draft Space Activities Bill 2017.pdf* (prindia.org) (Last visited Dec 3, 2021)

²⁵ *ibid*

²⁶ Draft Remote Sensing Policy 2020, No. DS-3p-16013/62/2020-Sec-3, Department of Space, 2020 (India), *spacers_policy_ngp_2020_draft.pdf* (isro.gov.in), (Last Visited Dec 3, 2021)

²⁷ *Ibid*

of Privatisation. The policy is ambiguous about ownership of data which is the fulcrum of the IPR.

How could a law or policy pertaining to IPR protection help private players and Government in this attempt of Commercialisation of the RSD industry by the government?

The private players who desire to enter the Space and RSD industry are entailed with several risks as there is a lot of ambiguity regarding Ownership, liability, legal rights and duties, limitations, code of conduct, IPR, dispute resolution²⁸, among others²⁹. Therefore, there is no legislation or policy that deals with IPR issues pertaining to RSD. A law or policy pertaining to Copyright protection of RSD is the need of the hour for the following reasons:

Survive Foreign Competition- The Copyright protection could help the players survive foreign competition as other countries like the USA and European Union among others, provide IPR protection to their RSD industry, and in a globalised world since India competes with these countries there is greater risk of piracy and breach of contract.

Stimulate Innovation- The Space Industry is a constantly evolving industry requiring innovation and continuous R&D to survive the cut-throat competition. The private players have huge potential, finance and other resources to contribute for the growth of the industry. If they are not rewarded with IPR protection, they may not be motivated to invest which could hamper innovation

Generate Revenue- There is a need for security in the form of profits assured to the private players. This could be achieved through IPR protection which could attract more private participation through its revenue generation potential. The Government in turn would be benefitted by the investment.

CONCLUSION

Any step taken by the Government needs legal backing. There is a need for a data enhancement market and an IPR Regime for successful commercialisation of RSD Industry. Since there are

²⁸ NATIONAL REMOTE SENSING CENTRE, Data Dissemination, https://www.nrsc.gov.in/EOS_dissemination_Policy (Last Visited Dec 3, 2021)

²⁹ Jothimani Ponnusamy, *GIS Data Dissemination and Intellectual Property Rights*, VII. 336, ResearchGate, (2003), (PDF) *GIS Data Dissemination and Intellectual Property Rights* (researchgate.net) (Last visited Dec 3, 2021)

debates and ambiguity on whether strict copyright protection could be granted to RSD or not, a sui generis system could also be evolved after critically evaluating its applicability. Before that, there is a need to consciously recognise the difference between enhanced and unenhanced data in India.

Also, the fact that India is bounded by countries that can pose a threat to its national security cannot be ignored. Therefore, in order to ensure IPR protection granted to data enhancers does not pose a threat to the country's security, a separate body can be set up or an existing body could ideally focus on creating a regulatory mechanism and keep a track of IPR protection granted to these private parties. The raw data that does not have a bearing on national security could be made free and open, and sensitive data could be made available with scrutiny of applications and at a cost. This would make data easily available for research. Strengthening cyber security is vital to have a close watch on who is viewing and acquiring the raw data which could help get rid of unnecessary authorizations which could in turn save money and time of the private entities.