

Research Report

Forum: UNCOPUOS

Issue: Developing protocols for managing intellectual property rights related to space technologies and data to reduce polarisation in commercial space activities.

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Introduction

Intellectual property rights (IPRs) have long provided incentives for commercial operations to innovate by safeguarding the right to benefit from the mind's creation. Now, with the rapid increase in space commercialization, and the development of groundbreaking technologies by private companies such as SpaceX, the protection of IPRs in space is more important than ever. Despite this, there is a notable lack of international legislation addressing this issue. With its formation in 1959, this committee was requested to study and report on the nature of legal problems that may arise from space and the exchange of information on outer space research. As such this report will explore guidelines and initiatives for the equitable and productive management of IPRs in space and increased transparency in space research. These guidelines should provide increased trust and encourage collaboration, decrease polarization and promote research.

Definitions of key terms

Intellectual Property Rights (IPR)

IPR is a legal concept that protects creations of the mind from unauthorized use or duplication, similar to the protections afforded to physical property. IPRs are governed by both regional and international organizations, such as the World International Patent Organization (WIPO), or the European Patent Office (EPO). IPR covers patents, copyrights, trademarks, trade secrets, industrial designs, and plant varieties as some of the main types.

Commercial Space Activities

Commercial space activities refers to any space-related enterprise involving a private company with the goal of profiting economically. Common examples of commercial space activities include space tourism, asteroid mining and satellite broadcasting.

Polarization

Polarization in this context can refer to both socio-political polarization and economic inequality. IPR disputes in space can cause disagreement and polarization between states, whereas clear IPR laws can foster trust in the international community. Furthermore, data-sharing agreements between nations can reduce economic inequality by making data available to poorer nations, allowing them to engage in space activity as well.

General overview

Despite being at the cutting edge of technology, there is a worrying lack of discussion on IPR in space. The past decades have witnessed an unprecedented rise in commercial space activity and accelerated innovation in the areas of communication and exploration. The space agencies, which in the past had, in effect, a monopoly on space exploration have turned to private space companies, offering lucrative contracts, and putting them at the forefront of development. Many of these companies' investments are made in the hope that their technological advancements will put them ahead of the competition and allow them to recoup their losses. This hope hinges on the protection afforded by IP laws to patents and trade secrets. Therefore, more comprehensive IPR laws in space would arguably encourage research and development into experimental technologies.

Moreover, there is an urgent need for a stable, unambiguous international framework, to manage IPR in space, similarly to how the WIPO oversees and records IP on earth. The issue here lies in space's status as a unique legal area, protected from national appropriation by the Outer Space Treaty. Currently, spacecraft are subject to the laws of the country they are registered in, as per international convention.

Another place where the need for new legislation becomes clear is when it comes to trademarks and copyrights. These may receive some protection from the Berne convention, however, this area of the law is often vague when it comes to space. This may prove to be an issue for private space companies relying on strong branding and could affect photographs or art made in space.

Lastly, data-sharing is an often overlooked aspect of IPR that is already present in many treaties and contracts, including the lunar Artemis Accords. Data sharing in space research has numerous benefits, including accelerating scientific discovery, reducing research costs, fostering international collaboration, validating findings, and enabling cross-disciplinary research. It also supports education, public engagement, and evidence-based policy decisions. Furthermore, data sharing ensures the preservation of valuable information for future generations, stimulates commercial opportunities and enhances transparency in space exploration. Ultimately, it contributes to a faster rate of development and perhaps most importantly, boosts trust in international relations.

In conclusion, a good resolution on IPR in space, must not only take into account the numerous principles laid out by the Outer Space Treaty, it must address the unique challenges and opportunities presented by space activities and the benefits of data-sharing agreements for international collaboration on research.

Major parties involved

The WIPO and Related Regional Bodies

The World International Patent Organization was established in 1967 by the UN to administer international agreements such as the Madrid Convention and maintain global IP databases. When seeking to get a patent approved, companies must file a Patent Cooperation Treaty (PCT) application, which is examined by a WIPO-recognized patent office and published internationally. The company must then file the PCT application in the individual countries or regions where it seeks protection to be judged by the region's laws and regulations. Some key examples of regional patent offices are the European Patent Office (EPO), the United States Patent and Trademark Office (USPTO) and the Japan Patent Office. Currently, only nine countries lack patent laws.

Private Space Companies

Private space companies are defined as businesses or organizations engaged in space-related activities for profit or non-governmental purposes. Private space companies (also called private aerospace companies) are typically involved in projects such as satellite management, space tourism and exploration, and space research and development. Two notable space firms are Blue Origin and SpaceX, both of which have developed reusable rockets and are privately held. Both companies have collaborated with NASA, the US government's agency for aeronautic and aerospace research. The rapid rise of commercial space companies is illustrated by the success of SpaceX, which has secured 60% of the global commercial space market after only twenty years.

Governmental Space Agencies

Governmental space agencies hold valuable IPR assets in areas including but not limited to aircraft design, robotics, and communication technology with extensive military and civilian uses. They often form contracts with private space companies on major projects such as NASA's SpaceX Crew 7 or Artemis Human Landing System, led by SpaceX and Blue Origin respectively. The top five governmental space agencies ranked by budget are NASA (USA), CNSA (China National Space Administration), ESA (European Space Agency), CNES (National Center for Space Studies, France), and JAXA (Japan Aerospace Exploration Agency).

Timeline of Key Events

1883	Paris Convention Established
1967	Outer Space Treaty adopted by the UN
1998	International Space Station (ISS) The launch of the first ISS module sparks debate over IPR management surrounding research by member nations.
2010 ~	SpaceX's Falcon 9 becomes the first privately developed spacecraft to reach orbit, signaling the unprecedented rise in space commercialization.
2015	WIPO Seminar on IPR in Outer Space
2020 ~ ~	Artemis Accords NASA arranges the Artemis Accords on moon exploration encouraging the sharing of data and research.

Previous attempts to solve the issue

While there is no definitive international framework for IPR in space, several documents like the lunar Artemis Accords have addressed IPR issues and encouraged data sharing. Additionally, there has been much debate concerning this issue and a landmark WIPO seminar on IPR in Outer Space.

As the international legislation on this topic does not afford extensive protections, many private space companies have struck deals with government agencies to help ensure IPR protection. According to the Outer Space Treaty, spaceships are subject to the IP laws of the country they are registered with, and many countries have enacted space-specific IPR laws.

Both the WIPO's seminar and report and the European Space Agency's article presented below explore thoroughly the concepts present in this report and propose solutions while highlighting possible drawbacks. Even though the ESA article details their approach to IPR, the WIPO report is purely advisory in nature, commissioned by the Organization for Economic Co-operation and Development, an organization aiming to promote economic growth among member states. As of now, there has been limited application of its suggestions and no definitive treaties.

Possible solutions

Many options have been explored regarding IPR in space. These are usually made up of international frameworks and data-sharing pacts. On a more regional scale, bilateral agreements have been signed by space agencies and private companies addressing IPRs. Although international frameworks may be harder to coordinate, they have the advantage of involving third parties in contracts that they would not have been bound to otherwise.

Any international framework must strike the balance between protecting the creator's rights and not interfering with non-commercial space exploration. Without a doubt, any solution must take into consideration the principles laid out by documents such as the Outer Space Treaty of 1967, which states that outer space should not be subject to national appropriation and that the pollution of outer space or use of weapons of mass destruction in space is prohibited.

Another measure often proposed is the establishment of a legal mechanism to resolve IPR disputes in space and arrange a periodic review of the regulations and conventions adopted by the UN. A regular review would certainly be beneficial, considering the speed at which space technology is developing. Naturally, most international regulations would require transparency and validity to hold nations accountable, so any solutions should take this into account.

Further reading

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https://www.wipo.int/export/sites/www/patent-law/en/developments/pdf/ip_space.pdf

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