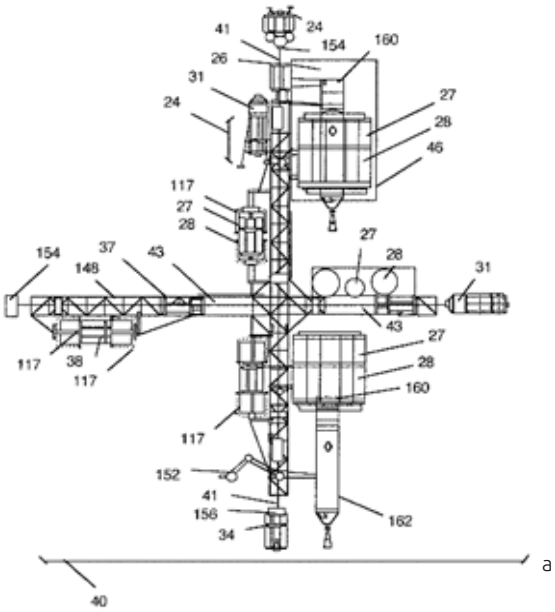
SPACE TECHNOLOGY AND PATENTS

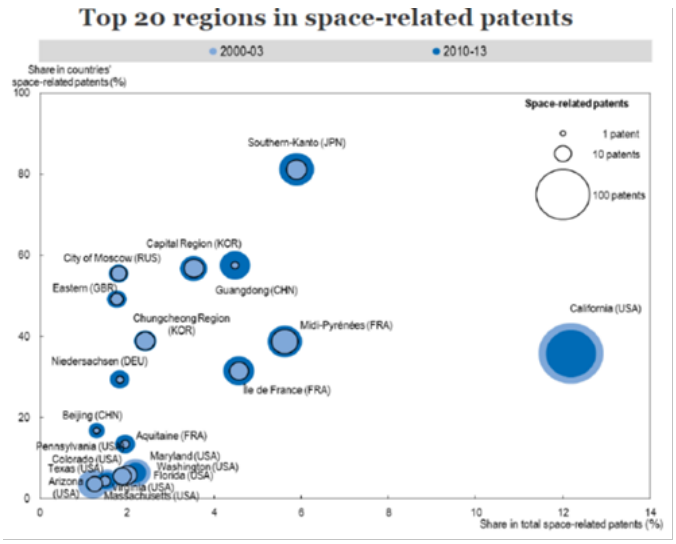
The human activity in outer-space in now visible than ever with technologies like global communications, climate studies and air traffic control. The Global Positioning System (GPS) technology is also now being made widely available for vehicles and smartphones. The "You are here" arrows on online maps is a result of satellite location and navigation services that have become part of everyday life now. Along with this, we are now able to track the changes and patterns in weather, agriculture and even forest fires. With Google Earth, many of us go to the extent of observing our homes from the point of view of an orbiting satellite!



Almost 50 countries consider space exploration as one of their key missions and it is estimated that the downstream market for space-based products are worth about 114-125 Billion Euros. The Earth observation (EO) sector - watching everything from rainforest loss to floods - is currently worth some 750 million Euros.

Space Technology and Patents:

With a wide range of technologies being involved and the ever growing use of the R&D and innovation taking place in various associated fields, it is undeniable that patents have huge role to play. Since the economy is a big beneficiary of new innovations, products and services evolving from space R&D, space technology has is crucial for the society, including the environment, combating climate change, public and civil security, humanitarian and development aid. The major countries involved in innovation in this area are the US, Russia, UK and Israel.

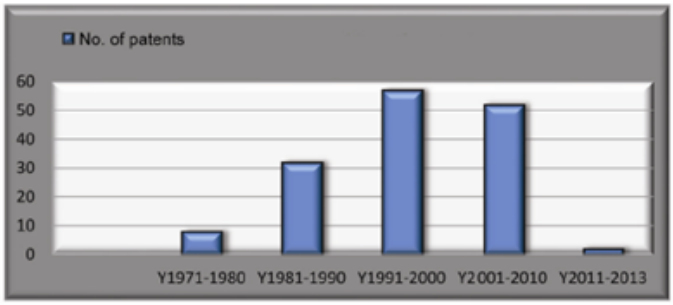


The International Space law is primarily governed by five treaties: (1) Treaty on principles governing the activities of States in the Exploration and Use of an Outer Space, including the Moon and other Celestial Bodies of 27 January 1967 (Outer Space Treaty). (2) Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into an Outer Space of 22 April 1968 (Rescue Agreement). (3) Convention on International Liability for Damage Caused by Space Objects of 29 March 1972 (Liability Convention). (4) Convention on Registration of Objects Launched into Outer Space of 14 January 1975 (Registration Convention). (5) Agreement Governing the Activities of States on the Moon and Other Celestial Bodies of 18 December 1979 (Moon Treaty).

Currently, many states are trying to establish a legal framework to define the rights and obligations of each Country, as well as their jurisdiction and control over their International Space Station (ISS). Questions are still being raised over the issue of applicability of national/regional patent laws in outer space. During 1988, the US, Japan and ten other countries signed an inter-governmental agreement in order to protect the 'exclusive rights' of the inventors.

The complicated nature of space patents is evident from the policy that an innovator can file for patents only in countries in where there is a significant market for the patented technology. Once an object is in the space, the patent jurisdiction is rendered insignificant. The patents have transcended the boundaries and protections of a single terrestrial market. This makes the registration of patents a very expensive and time-consuming process. Currently, the US is the only country that has enacted an explicit provision related to inventions in outer space. The US Patent Act (35 U.S.C. 105 (2003)) states that all inventions carried out in space under the jurisdiction or control of the US will be deemed to have been made and sold within the US.

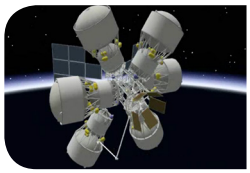
Though there aren't clear laws for patents in outer-space, the European Space Agency (ESA) claims to own hundreds of space-related patents and the National Aeronautics and Space Administration (NASA) of the US on the other hand, is said to own over a couple of thousand patents related to space technology. The Indian Space Research Organization (ISRO) has only about a hundred patents to its name which are related to space technology.



No. of Space related patents granted in India for the past four decades.

Top Space-related Patents:

Mobile Space Suit
Patent No. US3034131 A claims that the space suit is an improvement on the standard aviation suit, made to withstand the pressures of higher altitudes, no gravity, and alien invasions.



Propellant Depots
Propellant depots are like the pit-crew for a race-car driver, but in space. The depot systems assist with transportation for rockets and other orbiting satellites, and provide fuel as well.

Spacecraft Attitude and Velocity Control Thruster System
This invention relates to the duel-thruster system and is for rockets that are "concerned with the launch, insertion and maintenance of satellites in geosynchronous orbits." The thrusters work together to maintain attitude and velocity of the spacecraft, as well as share and convert fuel to make the mission simpler and less expensive.

Leading Innovators in Space Technology:

Many countries have now moved on to privatizing the space industry. As a result of this, excessive cash flow and investments can now be seen in this sector. As the multi-billion dollar industry continues to grow, patent licensing and revenue-generating partnerships are now at an all-time high. A number of leading innovators have brought in some exciting innovations to the table in the space technology sector. A few leading innovators in this sector are – (1) ORBITAL INSIGHT which analyzes data from a constellation of satellites (2) SPIRE – which delivers better weather intelligence (3) SPACEX – which have built some ground breaking technologies for rockets launch (4) BLUE ORIGIN – which makes the private space race more competitive (5) KYMETA – which provides internet services at new heights (6) CHINA AEROSPACE SCIENCE AND TECHNOLOGY CORP – this company has brought China back as a leader in the world of space sector (7) ROCKET LAB – which focuses on life-off of small satellites (8) ASTROSCALE – which is involved in safely redirecting space debris (9) STRATOLAUNCH SYSTEMS – which has turned planes into launch pads (10) MOON EXPRESS – which focuses on reentering/rediscovering the moon.

Conclusion:

Countries are now realizing the increasing importance of Patents in the field of Space Technology. What is now required is the harmonization of the patent laws across the globe to foster innovation at the regional level and later at the world level. As this sector is becoming a tremendous pathway for a number of great opportunities for both the investors and the innovators, it is only pertinent for the law makers to make a safe space for space related innovations.

Source:

https://www.articleonepartners.com/blog/top-5-space-related-patents/
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