Graduate Certificate in Space Law

Space Intellectual Property Law

Berne Convention (International Convention for the Protection of Literary and Artistic Works): an international agreement governing copyrights, including the rights of authors of literary and artistic works. First adopted in 1886, the Convention has been revised multiple times, with the latest version, the Paris Act (1971), entering into force in 1974. The Convention establishes minimum standards for copyright protection, including the requirement that signatory countries recognize the copyrights of authors from other signatory countries, without the need for formalities such as registration or notification.

Common Heritage of Mankind: a legal principle that asserts that certain areas and resources beyond national jurisdiction, such as the deep seabed and outer space, are the common heritage of mankind and should be used for the benefit of all humanity. This principle is enshrined in the United Nations Convention on the Law of the Sea (UNCLOS) and the Outer Space Treaty. It implies that these resources should be used equitably, with due regard for the interests of all states, particularly developing countries, and that their exploitation should be subject to an international regime.

Digital Millennium Copyright Act (DMCA) (1998): a US federal law that updates copyright law to address digital copyright issues, including online copyright infringement and the circumvention of technological protection measures. The DMCA implements two World Intellectual Property Organization (WIPO) treaties, the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty. The DMCA establishes a notice-and-takedown system for online service providers, which allows copyright holders to request the removal of infringing material from the internet.

Geostationary Orbit (GEO): a circular orbit 35,786 kilometers (22,236 miles) above the Earth's equator, where a satellite appears stationary relative to an observer on the Earth's surface. This orbit is often used for communication, meteorological, and navigation satellites. Due to its desirable properties, the GEO is a congested region of space, and international agreements, such as the Radio Regulations of the International Telecommunication Union (ITU), govern its use to prevent interference between satellites.

Intellectual Property (IP): a category of property that includes intangible creations of the human mind, such as inventions, literary and artistic works, symbols, names, images, and designs used in commerce. Intellectual property rights enable creators to control and benefit from their creations, providing incentives for innovation and creativity. The main types of intellectual property rights are copyrights, patents, trademarks, and trade secrets.

International Space Station (ISS): a multinational collaborative project involving five space agencies: NASA (US), Roscosmos (Russia), ESA (Europe), JAXA (Japan), and CSA (Canada). The ISS serves as a research laboratory and living environment in low Earth orbit, providing a unique platform for conducting scientific research, technology development, and education. The ISS is governed by a series of international agreements, including the Intergovernmental Agreement and the Implementing Arrangement.

Liability for Space Debris: the responsibility for damages caused by space debris, as stipulated by the Liability Convention (1972). This Convention, which is part of the international space law framework established by the Outer Space Treaty (1967), holds launching states liable for damages caused by their space objects, including space debris, on the Earth's surface, in the air, or in outer space.

Outer Space Treaty (Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies): an international agreement that forms the cornerstone of space law. Adopted in 1967, the Treaty establishes fundamental principles for the exploration and use of outer space, including the non-appropriation of celestial bodies, the freedom of exploration and use, the peaceful use of outer space, and international cooperation. The Treaty also provides for state liability for damage caused by space objects and requires states to authorize and continuously supervise private space activities.

Patent: an exclusive right granted to an inventor for a limited period, typically 20 years from the filing date, to exploit an invention. A patent gives the inventor the right to prevent others from making, using, selling, or importing the patented invention without permission. To be eligible for a patent, an invention must be new, involve an inventive step, and be capable of industrial application.

Radio Regulations: the international treaty governing the use of the radio frequency spectrum and the assignment of geostationary satellite orbits. Administered by the International Telecommunication Union (ITU), the Radio Regulations set out the rules and procedures for the global management of the radio spectrum and satellite orbits, ensuring their efficient and equitable use. The Radio Regulations are an integral part of the Constitution and Convention of the International Telecommunication Union.

Registration of Space Objects: the process of recording the launch and characteristics of a space object in the United Nations (UN) Register of Objects Launched into Outer Space. Established in 1962, the Register is maintained by the UN Office for Outer Space Affairs (UNOOSA) and serves as a means of identifying and tracking space objects. Registration is mandatory for objects launched into Earth orbit or beyond, as stipulated by the Registration Convention (1975).

Remote Sensing: the acquisition of information about the Earth's surface and atmosphere through the use of sensors located on aircraft, satellites, or other platforms. Remote sensing enables the collection of data on a wide range of environmental, social, and economic parameters, supporting applications in areas such as agriculture, forestry, land use planning, disaster management, and climate change monitoring. The Principles Relating to Remote Sensing of the Earth from Outer Space (1986) provide a framework for the responsible use of remote sensing technology.

Space Object: any device or structure placed in outer space, including artificial satellites, space stations, and space launch vehicles. The term "space object" also includes any part of such a device or structure that has broken off and remains in outer space. The Registration Convention (1975) requires states to register space objects launched into Earth orbit or beyond with the United Nations (UN) Register of Objects Launched into Outer Space.

Space Situational Awareness (SSA): the ability to monitor, track, and predict the location and behavior of

space objects, including satellites, space debris, and potential threats such as asteroids. SSA is essential for ensuring the safety and sustainability of space activities, as well as for protecting vital space-based assets and infrastructure. The international community is working to enhance SSA capabilities through collaborative efforts, such as the Inter-Agency Space Debris Coordination Committee (IADC) and the Space Surveillance Network (SSN).

Space Tourism: commercial human space travel for recreational or leisure purposes. Space tourism is an emerging industry that offers opportunities for private citizens to experience space travel, often as passengers on suborbital spaceflights or orbital space missions. Space tourism raises legal and regulatory issues related to safety, liability, and jurisdiction, as well as questions about the environmental impacts of increased space traffic.

Trade Secret: confidential information that provides a competitive advantage to a business or organization. Trade secrets can include any formula, pattern, compilation, device, method, technique, or process that is not generally known or readily ascertainable by others and is subject to reasonable efforts to maintain its secrecy. Trade secrets are protected under national laws and international agreements, such as the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).

Trademark: a recognizable sign, design, expression, or symbol that identifies and distinguishes the products or services of a particular business or organization from those of others. Trademarks can include words, logos, slogans, colors, or combinations thereof. Trademarks are protected under national laws and international agreements,

Actor: Any entity, including governments, international organizations, private companies, and individuals, involved in space activities.

Artemis Program: A NASA-led human exploration initiative to return humans to the Moon by 2024 and establish a sustainable presence on the lunar surface to prepare for human missions to Mars.

Blackbox Recorder: A device that records data from space vehicles and transmits it back to Earth, which can be crucial for investigating accidents and improving safety.

COPUOS: The Committee on the Peaceful Uses of Outer Space, a United Nations body established in 1959 to govern international cooperation in space activities.

Debris Mitigation Guidelines: A set of best practices for space actors to minimize the creation and accumulation of space debris, developed by COPUOS.

Deep Space Industries: A private company focused on extracting and utilizing resources from asteroids and other celestial bodies.

Geostationary Orbit: An orbit 35,786 kilometers above the Earth's equator, where satellites match the Earth's rotation and appear stationary in the sky.

Global Positioning System (GPS): A satellite-based navigation system that allows users to determine their

precise location and time.

Government Furnished Equipment (GFE): Equipment or property provided by a government agency to a contractor for use in performing a contract.

Guiana Space Center: A spaceport in French Guiana, operated by the European Space Agency, which is used for launches of Ariane, Soyuz, and Vega rockets.

Host Country Agreement: An agreement between a space agency and a country where a launch site is located, outlining the terms and conditions for the use of the site.

INTELSAT: The International Telecommunications Satellite Organization, a global satellite communications provider owned by 150 member countries.

International Space Station (ISS): A multinational space research laboratory and living environment in low Earth orbit, operated by NASA, Roscosmos, ESA, JAXA, and CSA.

ITU: The International Telecommunication Union, a specialized agency of the United Nations responsible for regulating international telecommunications, including satellite orbits and frequencies.

Lagrange Points: Five points in space where the gravitational forces of two large bodies (e.g., the Earth and the Sun) balance, allowing for stable orbits.

Launch Insurance: A type of insurance that covers the financial risks associated with launching a space vehicle, including damage to the vehicle and third-party liability.

Launch License: A government-issued permit that authorizes a space actor to launch a space vehicle from a specific launch site.

Launch Loophole: A provision in the Outer Space Treaty that allows private companies to launch and operate space vehicles without direct government oversight.

Launch Notification Area: A geographical area within which a launching state must provide advance notification of a space launch to other states.

Launch Safety Zones: Areas surrounding a launch site that must be evacuated or cleared during a launch to minimize the risk of harm to people and property.

Liability Convention: The Convention on International Liability for Damage Caused by Space Objects, a treaty that governs the compensation and liability for damages caused by space objects.

Long March Rocket: A family of Chinese rockets used for launching satellites and other space vehicles, including the Long March 2, 3, and 4 series.

Low Earth Orbit (LEO): An orbit between 160 and 2,000 kilometers above the Earth's surface, where many satellites and space stations operate.

Moon Agreement: The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, a treaty that establishes the legal framework for exploring and utilizing the Moon and other celestial bodies.

Moon Treaty: See Moon Agreement.

NASA: The National Aeronautics and Space Administration, the United States' civil space agency.

National Space Act: A US law that governs the commercial use of space, including launching and operating space vehicles.

National Space Policy: A government's official stance on space activities, including its goals, priorities, and strategies for engaging in space.

NRO: The National Reconnaissance Office, a US intelligence agency responsible for developing, building, and operating reconnaissance satellites.

Orbital Debris: Non-functional space objects, including defunct satellites, spent rocket stages, and fragmentation debris, that pose a risk to other space objects and human spaceflight.

Orbital Slots: Designated positions in specific orbital planes, assigned by the ITU, for satellite operation.

Outer Space Treaty: The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, a treaty that establishes the legal framework for space activities.

Payload: The equipment or instruments carried by a space vehicle, including scientific experiments, communication systems, or sensors.

Planetary Protection: A set of guidelines and practices aimed at preventing the contamination of celestial bodies with Earth-based microorganisms, and vice versa.

Remote Sensing: The collection and analysis of data about the Earth's surface and atmosphere from space, using sensors or cameras mounted on satellites or other space vehicles.

Reusable Launch Vehicle (RLV): A space launch vehicle that can be used for multiple flights, reducing the cost and environmental impact of space launches.

ROSCOSMOS: The Russian Federal Space Agency, responsible for space activities in Russia.

Satellite Communication: The use of artificial satellites in space to relay and amplify radio telecommunications signals, enabling long-distance communication, navigation, and data transmission.

Satellite Servicing: The repair, refueling, or upgrading of satellites in orbit, extending their operational lifespan and reducing the need for replacement satellites.

SES: A global satellite communications provider based in Luxembourg, operating a fleet of geostationary

satellites.

Shared Satellite: A satellite that is jointly owned and operated by multiple entities, reducing the cost and increasing the accessibility of space-based services.

Small Satellite: A satellite with a mass of less than 500 kilograms, typically used for low Earth orbit missions and scientific research.

Space Activities Liability Act: A Canadian law that governs the liability of space actors for damages caused by space activities, including launches and satellite operations.

Space Act Agreement: A contractual agreement between NASA and a private company or organization, outlining the terms and conditions for collaborating on space activities.

Space Debris Mitigation: The practice of minimizing the creation and accumulation of space debris, including through design, operation, and end-of-life disposal of space objects.

Space Environmentalism: The conservation and protection of the space environment, including the prevention of space debris and the promotion of sustainable space activities.

Space Exploration: The investigation and discovery of space and celestial bodies, including through manned and unmanned missions, scientific research, and technology development.

Space Law: A branch of international law that governs space activities, including the exploration, use, and conservation of outer space and celestial bodies.

Space Object: Any man-made object in space, including satellites, space vehicles, and space stations.

Space Policy: A government's official stance on space activities, including its goals, priorities, and strategies for engaging in space.

Space Resources: Natural resources found on celestial bodies, including water, minerals, and metals, that can be extracted and utilized for space activities and terrestrial applications.

Space Situational Awareness (SSA)</