

# SPACE-BASED DATA CENTERS ROADMAP: THE CASE FOR CAUTION

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## CHAPTER 3.1:

# Current Laws and Institutions

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# TABLE OF CONTENTS

CHAPTER 3.1: ..... 3.1-1
CURRENT LAWS AND INSTITUTIONS – *David Sandalow and Hari Osofsky*

A. International Governance ..... 3.1-1
*i. Space Law and Governance ..... 3.1-1*
*ii. Environmental and Climate Law and Law of the Sea ..... 3.1-3*
*iii. Security, Cybersecurity, AI and Data Governance, and Human Rights ..... 3.1-4*
*iv. Trade, Economic and Financial Law ..... 3.1-5*
B. National Governance ..... 3.1-5
*i. United States ..... 3.1-5*
*ii. China ..... 3.1-7*
*iii. European Union ..... 3.1-8*
*iv. Japan ..... 3.1-10*
*v. Other Notable Jurisdictions ..... 3.1-11*
C. References ..... 3.1-12

CHAPTER 3.1:

# CURRENT LAWS AND INSTITUTIONS

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## MAIN MESSAGES

- No international treaty or national regulatory framework comprehensively governs space-based data centers (SBDCs). Existing laws have significant gaps.
- Space treaties and ITU rules address launch, registration, jurisdiction, liability and spectrum issues but not environmental damages, AI, cybersecurity or data governance.
- The United States, China, European countries, Japan and other jurisdictions apply differing combinations of launch licensing, spectrum regulation, debris requirements and other laws.

Current laws and institutions with respect to space-based data centers (SBDCs) are fragmented with significant gaps. This chapter summarizes those laws and institutions. We start with a discussion of international governance, including relevant treaty law, and then turn to national laws, focusing on countries in which the most activities to develop SBDCs are currently underway.

## A. International Governance

Many areas of international law apply to SBDCs, but no treaty addresses them comprehensively. This legal fragmentation results in gaps and creates uncertainty. The space treaties address launch, registration, liability for physical damage and peaceful use, but do not directly address artificial intelligence (AI), cybersecurity or data governance. In addition, some ongoing areas of contestation in space law have direct relevance to SBDCs. Numerous other treaty regimes have potential applicability to the issues that might arise with SBDCs, but they were designed to address terrestrial issues, and for some of them, their application to space is uncertain. Relevant areas of international law include environmental law, law of the sea, security, cybersecurity, AI, data governance, human rights, trade, economic and financial law.

### i. Space Law and Governance

The states currently developing SBDCs are all parties to the Outer Space Treaty, Liability Convention, Rescue Agreement and (except Israel) the Registration Convention. All are also parties to the International Telecommunication Union (ITU) Constitution, Convention and Radio Regulations. Some but not all of them have joined the Artemis Accords, with disagreements over resource extraction and safety zones that have relevance for SBDCs.[1]



*Signing of the Outer Space Treaty (January 27, 1967). Source: UN Photos*

The Outer Space Treaty's core principles (freedom of exploration and use, non-appropriation and state responsibility for national activities) and Articles II, VI, VIII and IX have applicability to SBDCs. Article II prohibits nations from appropriating outer space through claims of sovereignty, use or occupation. Article VI establishes state responsibility for its space activities, including authorizing and supervising private operators, which would include SBDC operators. Article VIII provides that the state of registry has jurisdiction and control over space objects, which would include SBDCs. Finally, Article IX requires states to act with due regard for other states' interests, avoid "harmful contamination" of space and consult before activities that would cause "potentially harmful interference"; these obligations would apply to SBDCs.[2-4]

The Liability Convention provides for absolute liability for damage that space objects cause on Earth's surface or to aircraft in flight. However, it only includes fault-based liability for damage caused to another state's space object, which would govern any orbital collisions involving SBDCs. Fault is difficult to prove and these provisions have only been tested once. In addition, the definition of damage only includes life, personal injury and loss of property; unless the property provision is interpreted expansively, it may not cover service outages, data loss and atmospheric harms for launch and re-entry.[5,6] Beyond the Liability Convention, customary international law of state responsibility provides a potential avenue for liability, but this would be a novel context that has not yet been tested.[7]

The Registration Convention requires launching states to have a national registry for space objects and to provide orbital parameters and general function to the UN Secretary-General. For multi-state projects, including potential SBDC projects, only one of the states serves as the state of registry under the Registration Convention. However, the Intergovernmental Agreement for the International Space Station (ISS) provides an example of states establishing multi-state jurisdiction allocation over orbital infrastructure, as well as establishing rules for criminal jurisdiction, intellectual property and liability waivers.[8,9]

The Rescue Agreement establishes that states must return space objects found in their territory to the launching authority. SBDCs and their component parts would be considered such objects.[10]

The ITU Constitution, Convention and Radio Regulations govern spectrum and orbital-slot coordination, which are crucial for SBDC projects. Article 44 of the ITU Constitution provides obligations for rational, efficient and economical allocation and equitable access. However, coordination in practice has been on a first-come, first-served basis, which operators have controversially used in a strategic manner, such by splitting filings or having multiple states file for

the same constellation.[11-13] ITU Radio Regulations have added large constellation deployment milestones, but they do not include orbital compute specifically.[14]



*International Telecommunication Union (ITU) logo. Source: Wikimedia Commons*

In addition to these broadly accepted agreements, other more contested areas of international space law have potential applicability. The Artemis Accords, which have been led by the United States, interpret the Outer Space Treaty to mean that resource extraction does not constitute national appropriation. The Accords' 67 signatories include the United States, Japan, the United Arab Emirates, India and the United Kingdom, but not China and Russia. The Accords also commit signatories to interoperability standards and open sharing of scientific data.[15] The Moon Agreement, which declares the Moon and its resources to be the "common heritage of mankind," does not include any of the states leading SBDC efforts among its parties.[16]

Several international organizations provide important coordination but have only taken limited steps on key issues surrounding SBDCs. The UN Committee on the Peaceful Uses of Outer Space (COPUOS) operates by consensus and moves slowly. Its voluntary 2019 Guidelines for the Long-Term Sustainability of Outer Space Activities were not designed for the proposed SBDC scale or launch cadence, and its current agenda items on space traffic coordination and on dark and quiet skies have not yet led to binding law.[17,18] The UN Office for Outer Space Affairs (UNOOSA), which serves as the COPUOS secretariat, maintains the Register of Objects Launched into Outer Space and advises states on national space regulation.[19] The ITU administers the above-described spectrum and orbital-filing system through its Radiocommunication Bureau and quadrennial World Radiocommunication Conferences.[20,21] The Inter-Agency Space Debris Coordination Committee (IADC) sets technical debris-mitigation guidelines but has limited membership and voluntary compliance.[22]

## ii. Environmental and Climate Law and Law of the Sea

Numerous environmental and climate treaties potentially apply to SBDCs, but none of these treaties specifically address them. The Vienna Convention for the Protection of the Ozone Layer and Montreal Protocol (discussed in section B(iv) below), which have been ratified by all nations in which activities related to SBDCs are underway, regulate listed ozone-depleting substances. Although black carbon from launches and alumina nanoparticles from satellite re-entry are not listed substances, they have impacts on the ozone layer.[23-25]

States with commitments under the UN Framework Convention on Climate Change (UNFCCC) and Paris Agreement could be impacted both positively by shifting terrestrial data centers emissions to outer space and negatively by launch emissions. All nations with SBDC activities are parties to these climate agreements, except for the United States (which has withdrawn from the Paris Agreement and given notice of its withdrawal from the UNFCCC).[26-29]

In July 2025, the International Court of Justice issued an advisory opinion on climate change, which includes discussion of obligations to prevent transboundary harm and regulation of private actors, both relevant in the context of SBDCs.[30] In addition, the Espoo Convention creates obligations to assess transboundary environmental impacts, but it has not been directly applied to SBDCs and only the European SBDC leader states are parties.[31]



*United Nations Framework Convention on Climate Change (UNFCCC) logo. Source: Wikimedia Commons*

The United Nations Convention on the Law of the Sea (UNCLOS) has been ratified by all SBDC leader states except for the United States, which recognizes it as customary international law. It contains provisions relevant to sea-launch platforms, flag-state jurisdiction over launch vessels and the submarine cables that will carry SBDC ground-segment traffic.[32,33]

### iii. Security, Cybersecurity, AI and Data Governance, and Human Rights

Although there is extensive international law regarding security and use of force, there is limited agreement among key states about how it would apply in the context of SBDCs. The Outer Space Treaty, discussed above, incorporates the UN Charter's article 2(4) prohibition on the use of force and the article 51 right of self-defense, as well as barring nuclear weapons and other weapons of mass destruction in orbit.[34] The Geneva Conventions are universally ratified, but the United States and India are not parties to Additional Protocol I, which codifies the modern targeting rules. States disagree on many space-based applications, including whether dual-use commercial infrastructure, such as an SBDC constellation hosting government or military workloads, becomes a lawful military objective.[34-36]

Although there is a developing treaty regime on cybersecurity, none of the agreements directly address SBDCs. Many of the SBDC leader states (but not China, India and the United Arab Emirates) are party to the Budapest Convention, the most widely ratified cybercrime treaty. The United Arab Emirates is party to the Arab Convention on Combating Information Technology Offences. No SBDC leader states are party to the African Union's Malabo Convention.[37,38] Some SBDC states have signed the UN Convention against Cybercrime, which is not yet in force.[39,40] The nonbinding UN cyber norms, including the norm against attacking critical infrastructure, have not yet been applied to orbital compute, and no instrument clarifies whether an SBDC qualifies as critical infrastructure.[41]

Limited international law exists on AI and data governance. The Council of Europe Convention 108+ addresses relevant data governance, but among the SBDC leader states, only European states currently participate and it has not yet entered into force.[42] Similarly, the OECD (Organisation for Economic Co-operation and Development) AI Principles, the UNESCO (United Nations Educational, Scientific and Cultural Organization) Recommendation on the Ethics of AI, and the Council of Europe Framework Convention on AI, only the last of which creates binding obligations, do not address training or serving frontier models in space.[43-45]

Human rights law includes privacy rights, but how they apply to the orbital context is unspecified and not all SBDC leader states are parties to relevant treaties. For example, the International Covenant on Civil and Political Rights provides protection in Article 17 against arbitrary or unlawful interference with privacy, but there is contestation over its extraterritorial application to digital surveillance and it does not directly address space.[46,47] Although nonbinding, the UN Guiding Principles on Business and Human Rights provide human rights due-diligence expectations that would apply to SBDC operators.[48]

### iv. Trade, Economic and Financial Law




*Source: Wikimedia Commons*

All leader states on SBDCs are World Trade Organization (WTO) members bound by the General Agreement on Trade in Services (GATS), which covers cross-border supply of computer and data-processing services, though not orbital compute directly.[49] The Wassenaar Arrangement and the Missile Technology Control Regime coordinate export controls on semiconductors, encryption and satellite hardware, but they are nonbinding and are implemented through national regimes; China and the United Arab Emirates have not agreed to them.[50,51] Bilateral investment treaties and investment chapters of trade agreements protect terrestrial SBDC assets, but their applicability to space-based assets remains unclear.[52]

## B. National Governance

No national governments have laws or policies that comprehensively govern SBDCs. Coverage is fragmented, with a wide range of laws and policies. The types of laws and policies that apply or might apply to SBDCs include those addressing satellite launches, radiofrequency allocation, orbital debris management, environmental protection, data governance, AI safety and other topics. Many jurisdictions lack laws or policies that directly address the potential impacts of SBDCs in these areas.

As the SBDC sector grows in the years ahead, more comprehensive national regulatory regimes may emerge. For now, laws and policies with respect to SBDCs are characterized by substantial fragmentation and gaps in coverage.

### i. United States

Several areas of US law apply to SBDCs. Licensing requirements for satellite launches and radiofrequency allocation are the most important. (To obtain a radiofrequency license in the United States, satellite operators must provide plans for orbital debris management and end-of-life disposal.) Several environmental statutes apply, although categorical exclusions and deregulation significantly limit the impacts of those statutes in practice. A range of other laws play roles at the margins.



Satellite launches within the United States require a license from the Federal Aviation Administration (FAA), though some National Aeronautics and Space Administration (NASA) and Department of Defense launches are exempt.[53,54] The FAA reviews license applications with respect to factors including public safety (at launch and re-entry), environmental impacts and financial responsibility. The FAA also considers whether the satellite's payload has received all required authorizations and whether launch or re-entry would have adverse impacts on US national security, foreign policy or international obligations. Re-entry of satellites launched from the United States into the Earth's atmosphere also requires a license from FAA.[54-56]

Satellite communications using the radiofrequency spectrum require a license from the Federal Communications Commission (FCC). Although the FCC's core licensing authority concerns radio communications, its procedures for satellite licensing require applicants to address, not just radiofrequency interference, but orbital-debris mitigation (including collision avoidance) and end-of-life disposal, as well. For some low Earth orbit (LEO) satellites, FCC rules require disposal no later than five years after the end of mission.[57] All or almost all SBDCs will need to use the radiofrequency spectrum for purposes including satellite-to-Earth communications, so the FCC's licensing process will play a central role in governance of SBDCs launched from US territory.

Several environmental statutes apply to SBDCs in theory, however these statutes have been significantly limited in practice.

- Under the National Environmental Policy Act (NEPA), any major federal action (such as granting a satellite launch license) requires an assessment of environmental impacts. For satellite launch licenses, the FAA has almost always issued a "Finding of No Significant Impact," insulating such launches from the rigorous Environmental Impact Statement process. For radiofrequency licenses, the FCC typically applies a categorical exclusion to NEPA issued in 1986, which asserts that individual satellite payloads do not individually or cumulatively have a significant effect on the human environment.[58]
- In August 2025, the Trump administration issued an executive order (#14335) directing the FAA to use all available authorities "to eliminate or expedite" environmental review of satellite launch licenses, including under NEPA.[59]
- The Clean Air Act has had scant impact on satellites. The Environmental Protection Agency (EPA) treats rocket-launch emissions as mobile rather than stationary, so those emissions do not count in determining whether a launch facility qualifies as a major stationary source of pollution subject to Clean Air Act permitting.[60] However, the EPA has never issued mobile-source emissions standards for rockets, leaving satellite launches effectively unregulated under the Clean Air Act. Nor has the EPA exercised its Clean Air Act authority with respect to the ozone-depleting impacts of satellite launches and re-entry to the atmosphere.

Several other US regulatory regimes may matter to SBDCs, especially if SBDCs grow in number at the pace envisioned in recent FCC license applications. Export controls under the International Traffic in Arms Regulations (ITAR) could emerge as significant for some SBDC hardware and encryption technologies. If an SBDC collects Earth imagery, the National Oceanic and Atmospheric Administration (NOAA) will likely require a license. The Endangered Species Act and Coastal Zone Management Act could apply to the construction of new spaceports and other space launch activities. State and local land-use regulation could apply to new spaceports and other ground infrastructure, as well.

### ii. China



More than any other national government, the Chinese government has embraced the concept of SBDCs.

- In 2025, the Chinese Government's Work Report named commercial space a priority emerging industry meriting large-scale application demonstration. China Aerospace Science and Technology Corporation (CASC), a state-owned enterprise and China's primary space contractor, has proposed a gigawatt-scale space-based computing architecture, citing alignment with China's 15th Five-Year Plan.[61,62]
- Beijing municipal science and technology authorities have released a Space Data Center Construction Plan targeting a constellation in dawn-dusk orbit with substantial computing power. The plan sets a three-phase timeline: 2025–2027 to develop energy and thermal-management technology and launch a first-phase constellation; 2028–2030 to achieve in-orbit assembly and lower costs through a second-phase constellation; and 2031–2035 for mass production and networked launch of a full-scale system.[61,63,64]

Several bodies of Chinese law and policy apply to SBDCs. Launch licensing and space-object registration are administered by the China National Space Administration (CNSA) and Ministry of Industry and Information Technology (MIIT). Cybersecurity, data-security and personal-information laws apply to data processed on Chinese-operated platforms regardless of where the hardware sits. Export-control rules could constrain the hardware and encryption technology SBDCs would use.

Satellite launches require a license under the Interim Measures for the Administration of Civil Space Launch Project Licenses. Review covers public safety, environmental compliance, third-party liability insurance and consistency with China's international treaty obligations.[65,66]

China maintains a national space-object registry separate from launch licensing. Under the Measures for the Administration of Registration of Space Objects (2001), the final owner or controller of any object launched from Chinese territory or launched abroad by a Chinese national must register it domestically, consistent with China's obligations under the UN Registration Convention. Through this registration process, the CNSA oversees debris mitigation and end-of-life disposal.[67,68]

CNSA tightened oversight of commercial space projects in July 2025. Its Notice on Strengthening Quality Supervision and Management of Commercial Aerospace Projects was the first measure to systematically regulate the full life-cycle of commercial space activity. A companion CNSA action plan for 2025–2027 directs agencies to streamline licensing for satellite manufacturing and launch , as well as satellite-data commercialization.[69-71]

China's cybersecurity, data-security and personal-information laws apply regardless of where data processing occurs. The Cybersecurity Law (2017), Data Security Law (2021) and Personal Information Protection Law (2021) together govern the collection, storage, processing and cross-border transfer of data by Chinese-operated networks and systems. Operators that qualify as critical information infrastructure or that process personal information above thresholds set by the Cyberspace Administration of China (CAC) must store personal information and important data collected in China within Chinese territory and undergo a security assessment before any cross-border transfer.[72-76]

Export-control law could restrict satellite hardware, encryption and related technology used in SBDCs. The Export Control Law (2020) and its 2024 implementing regulations require a license for transfers of controlled goods, technology, services and related technical data from China to foreign persons. The unified Dual-Use Items Export Control List published in 2024 can include satellite components and commercial encryption equipment. Chinese satellite manufacturers and SBDC operators sourcing or exporting controlled components or providing technical assistance to non-Chinese partners would need to assess license requirements under this regime.[77-79]

Several other regulatory regimes may matter as well. Spectrum coordination for SBDC satellite-to-Earth links would proceed through China's filings with the ITU. Energy policy applicable to SBDC ground infrastructure includes the national Green Electricity Certificate scheme, which requires new data centers in designated national hub regions to source at least 80% of electricity from renewable sources by 2030. Land-use, foreign-investment and state-secrets rules could apply to ground stations and control facilities.[20,80]

### iii. European Union



Several bodies of EU and Member State law apply to SBDCs. Member State laws govern satellite launches. International, EU and national rules govern access to radiofrequencies. EU laws and policies on cybersecurity, data privacy, and energy and environmental rules may apply. A proposed EU Space Act covers several topics, including orbital debris management, end-of-life disposal and environmental impacts.

Launch authorization is national, not EU-wide. Brussels-based institutions do not issue licenses for satellite launches. Launches from Europe's Spaceport in French Guiana (historically the main site for European satellite launches) are authorized under France's Space Operations Act. The French space agency, Centre National D'Etudes Spatiales (CNES), performs technical review and compliance

monitoring, covering topics such as public safety, environmental protection, orbital debris, re-entry, financial responsibility, national security and consistency with international obligations.[81-83]

Radiofrequency regulations are separate from launch authorization. Operators work through national "notifying administrations," which coordinate with the ITU. EU measures promote common technical conditions, but gateways and user terminals may still need authorization in each country where they operate.[20,84-86]

EU cybersecurity law requires covered entities (potentially including an SBDC) to adopt cybersecurity risk-management measures and report significant incidents to Member States. The European Union's flagship cybersecurity legislation, known as NIS 2, has a separate space-sector category that covers ground infrastructure.[87]

The European Union's General Data Protection Regulation (GDPR) dictates how organizations must collect, handle and protect the personal data of individuals within the European Union. The GDPR imposes obligations with respect to transparency, accuracy, data minimization and other topics. The GDPR applies when processing occurs in the context of an EU establishment or when certain non-EU operators offer services to or monitor people in the European Union, without regard to where the data are being processed. The GDPR also imposes obligations with respect to international data transfers. For several GDPR provisions, application to SBDCs could raise novel questions.[88,89]

The European Union's Environmental Impact Assessment Directive does not list spaceports as a distinct category. A launch site, ground station, power installation or related project may still require assessment if its components fall within a listed category or meet national screening criteria. Environmental review depends on the location and scale of the project and on the law of the Member State concerned.[90]

Several other regulatory regimes may also apply. The EU Dual-Use Regulation can restrict exports and technical assistance involving controlled space, computing and encryption technologies. National land-use, foreign-investment and public-procurement rules may affect ground infrastructure and ownership.[91]

In June 2025, the European Commission proposed the EU Space Act, which would be the first EU-wide framework for space safety and sustainability. The legislation would require authorization and registration of covered operators and would regulate collision avoidance, debris mitigation and end-of-life disposal. It would create space-specific cybersecurity requirements and require operators to measure a mission's life-cycle environmental footprint. The legislation is currently under negotiation between the European Parliament and the Council.[92-94]

## iv. Japan



Several bodies of Japanese law and policy apply to SBDCs. Satellite launches and operations are controlled by the Cabinet Office under the Space Activities Act. Radiofrequency allocation is administered by the Ministry of Internal Affairs and Communications (MIC). Japan's Ministry of Economy, Trade and Industry (METI) promotes Japan's space equipment industry, and the Japan Aerospace Exploration Agency (JAXA) provides grants to support technology development for SBDCs. Data protection, economic security and export control laws apply to the data and hardware regardless of where processing occurs.

Under the Space Activities Act, a launch operator must obtain a license from the Prime Minister before launching a satellite from Japanese territory and a separate license to control a satellite from a control facility in Japan. Launch review covers several topics, including flight safety, financial responsibility and consistency with Japan's international obligations. The control license addresses continuous telemetry monitoring, collision avoidance and an end-of-life disposal plan. An SBDC operating a constellation of computing satellites would need both licenses.[95,96]

Radiofrequency use requires a separate license. A satellite station and its associated earth stations require a license from the Minister for Internal Affairs and Communications under the Radio Act, which is administered separately from the Space Activities Act. The Minister reviews technical conformity, frequency availability under the national Frequency Assignment Plan, and the satellite's planned orbital position and operating period.[97,98]

METI has several programs to strengthen the international competitiveness of Japan's space equipment industry, including a Space Strategy Fund and programs to encourage small business participation in the space sector.[99] In 2025, JAXA began accepting proposals for grants to "develop and demonstrate technologies to realize an on-orbit data center that can be installed within a commercial space station, with the aim of creating a hub for data processing and communication in orbit." Total funding available was ¥13.5 billion (roughly $85 million). In January 2026, JAXA announced an award to Space Blast, Inc. for a project on "construction of an orbital data center through high-reliability edge computing."[100]

Japan's data-protection law could apply to data processing in orbit. The Act on the Protection of Personal Information (APPI), administered by the Personal Information Protection Commission, applies to a business that handles personal information of people in Japan, including operators outside Japan. A transfer of personal data to a third party in a foreign country requires consent or a recipient that meets standards equivalent to Japanese requirements. The Commission's guidance treats the storage of personal data on overseas servers as cross-border transfers. How these rules apply to servers in orbit has not been tested.[101]

Japan's Foreign Exchange and Foreign Trade Act (FEFTA) includes several provisions that could affect SBDCs, including restrictions on the transfer of some goods and technologies and on inbound foreign investment.[102,103]

### v. Other Notable Jurisdictions

The United Arab Emirates regulates its space sector under Federal Decree by Law No. 46 of 2023, which requires a permit from the UAE Space Agency (UAESA) to launch and operate space objects, as well as to receive, store, process or distribute any "Space Data" (defined broadly to include "[d]ata that results from Space Activities, whether it is remote sensing data, or navigation data using satellites, or others").[104] The radiofrequency spectrum is licensed by the UAE Telecommunications and Digital Government Regulatory Authority (TDRA).[104,105]

In India, the Indian National Space Promotion and Authorisation Centre (IN-SPACe) authorizes space activities under the Indian Space Policy 2023. Radiofrequency licensing runs through a separate track at the Department of Telecommunications and the Wireless Planning and Coordination Wing. A new draft of a Space Activities Bill first introduced in 2017 is currently under consideration.[106]

In the United Kingdom, the Civil Aviation Authority regulates spaceflight under the Outer Space Act of 1986 and the Space Industry Act of 2018. The UK GDPR is broadly similar to the EU GDPR, with a territorial reach that does not turn simply on where servers are located. As with the EU GDPR, application of the UK GDPR to SBDCs could raise novel questions.[108,109]

Israel has no dedicated national space law and no general licensing regime for space activities. The Israeli Space Agency within the Ministry of Innovation, Science and Technology initiates and coordinates civilian space activity.[110] Israel told COPUOS in 2023 that it had begun work on national space legislation, but no statute has been enacted.[111] Space-related data processing falls under the general framework of the Protection of Privacy Law of 1981 (PPL), which is overseen by the Israel Privacy Authority. As with the EU and UK GDPRs frameworks, the potential extraterritorial application of the PPL could raise novel compliance questions for SBDCs operating in orbit.[112-114]

## C. References


1 Committee on the Peaceful Uses of Outer Space. *Status of International Agreements relating to activities in outer space as at 1 January 2026;* United Nations Office for Outer Space Affairs (UNOOSA), Vienna, Austria, https://www.unoosa.org/res/oosadoc/data/documents/2026/aac_105c_22026crp/aac_105c_22026crp_9rev_1_0_html/AC105_C2_2026_CRP09Rev01E.pdf (2026).

2 United Nations General Assembly. *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, arts. II, VI, VIII, IX, United Nations Treaty Series, Vol. 610, pg. 205;* United Nations Office for Outer Space Affairs (UNOOSA), Vienna, Austria, https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html (1966).

3 Ely Sandler. *Governing Outer Space: A Conference of the Parties for the Outer Space Treaty;* Harvard Kennedy School, Belfer Center for Science and International Affairs, Cambridge, Massachusetts, https://www.belfercenter.org/research-analysis/space-cop-governance (2025).

4 Aleksey Shtivelman. *Solar Power Satellites and Orbital Data Centers—International Space Law Implications;* POWER Magazine, Houston, Texas, https://www.powermag.com/solar-power-satellites-and-orbital-data-centers-international-space-law-implications/ (2026).

5 United Nations General Assembly. *Convention on International Liability for Damage Caused by Space Objects, arts. II–III, United Nations Treaty Series, Vol. 961, pg. 187;* United Nations Office for Outer Space Affairs (UNOOSA), Vienna, Austria, https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introliability-convention.html (1972).

6 Government of Canada and the Government of the Union of Soviet Socialist Republics. *Settlement of Claim between Canada and the Union of Soviet Socialist Republics for Damage Caused by "Cosmos 954," International Legal Materials, Vol. 20, pg. 689;* Japan Aerospace Exploration Agency (JAXA), Chōfu, Tokyo, https://www.jaxa.jp/library/space_law/chapter_3/3-2-2-1_e.html (1981).

7 Internatioanl Law Commission. *Responsibility of States for Internationally Wrongful Acts, G.A. Res. 56/83, annex;* United Nations Office of Legal Affairs, New York, New York, https://legal.un.org/ilc/texts/instruments/english/draft_articles/9_6_2001.pdf (2021).

8 United Nations General Assembly. *Convention on Registration of Objects Launched into Outer Space, arts. II, IV, United Nations Treaty Series, Vol. 1023, pg. 15;* United Nations Office for Outer Space Affairs (UNOOSA), Vienna, Austria, https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introregistration-convention.html (1975).

9 Office of Treaty Affairs. *Agreement Among the Government of Canada, Governments of Member States of the European Space Agency, the Government of Japan, the Government of the Russian Federation, and the Government of the United States of America Concerning Cooperation on the Civil International Space Station, arts. 5, 21–22, reaties and Other International Acts Series, No. 12,927;* US Department of State (DOS), Washington, D.C., https://2021-2025.state.gov/space-station-agreement-1998/ (1998).

10 United Nations General Assembly. *Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, art. 5, United Nations Treaty Series, Vol. 672, pg. 119;* United Nations Office for Outer Space Affairs (UNOOSA), Vienna, Austria, https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introrescueagreement.html (1967).

11 International Telecommunication Union (ITU). *Constitution of the International Telecommunication Union, art. 44, United Nations Treaty Series, Vol. 1825, pg. 331;* ITU, Geneva, Switzerland, https://www.itu.int/en/council/Documents/basic-texts/Constitution-E.pdf (1992).

12 International Telecommunication Union (ITU). *Radio Regulations (2024 ed.);* ITU, Geneva, Switzerland, https://www.itu.int/pub/R-REG-RR (2024).

13 Andrew Falle, Ewan Wright, Aaron Boley & Michael Byers. One million (paper) satellites. *Science* 382, 150-152 (2023). https://doi.org/10.1126/science.adi4639.

14 International Telecommunication Union (ITU). *ITU Radio Regulations, Resolution 35 (WRC-19);* ITU, Geneva, Switzerland, https://www.itu.int/en/ITU-R/space/Documents/RES35(WRC-19).pdf (2019).

15 National Aeronautics and Space Administration (NASA). *The Artemis Accords: Principles for Cooperation in the Civil Exploration and Use of the Moon, Mars, Comets, and Asteroids for Peaceful Purposes, §§ 5, 8, 10* NASA, Washington, D.C., https://www.nasa.gov/artemis-accords/ (2020).

16 United Nations General Assembly. *Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, art. 11, United Nations Treaty Series, Vol. 1363, pg. 3;* United Nations Office for Outer Space Affairs (UNOOSA), Vienna, Austria, https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/intromoon-agreement.html (1979).

17 United Nations Office for Outer Space Affairs (UNOOSA). *Adoption and background of the Guidelines for the Long-term Sustainability of Outer Space Activities;* UNOOSA, Vienna, Austria, https://lts.unoosa.org/unoosa_lts/en/resources/guidelines/guidelinesabout.html (2019).

18 Committee on the Peaceful Uses of Outer Space (COPUOS). *Committee on the Peaceful Uses of Outer Space;* United Nations Office for Outer Space Affairs (UNOOSA), Vienna, Austria, https://www.unoosa.org/oosa/en/ourwork/copuos/index.html (2026).

19 United Nations Office for Outer Space Affairs (UNOOSA). *United Nations Register of Objects Launched into Outer Space;* UNOOSA, Vienna, Austria, https://www.unoosa.org/oosa/en/spaceobjectregister/index.html (Accessed August 2026).

20 International Telecommunication Union (ITU). *ITU Radiocommunication Sector;* ITU, Geneva, Switzerland, https://www.itu.int/en/ITU-R/Pages/default.aspx (Accessed August 2026).

21 Jeff Foust. *Satellite operators criticize "extreme" megaconstellation filings;* SpaceNews, Denver, Colorado, https://spacenews.com/satellite-operators-criticize-extreme-megaconstellation-filings/ (2021).

22 Committee on the Peaceful Uses of Outer Space (COPUOS). *IADC Space Debris Mitigation Guidelines (rev. 4, 2021);* United Nations Office for Outer Space Affairs (UNOOSA), Vienna, Austria, https://www.unoosa.org/res/oosadoc/data/documents/2025/aac_105c_12025crp/aac_105c_12025crp_9_0_html/AC105_C1_2025_CRP09E.pdf (2025).

23 Ozone Secretariat. *Vienna Convention for the Protection of the Ozone Layer, United Nations Treaty Series, Vol. 1513, pg. 293;* United Nations Environment Programme (UNEP), Nairobi, Kenya, https://ozone.unep.org/treaties/vienna-convention (1985).

24 Ozone Secretariat. *Montreal Protocol on Substances that Deplete the Ozone Layer, United Nations Treaty Series, Vol. 522, pg. 3;* United Nations Environment Programme (UNEP), Nairobi, Kenya, https://ozone.unep.org/treaties/montreal-protocol (1987).

25 José P. Ferreira, Ziyu Huang, Ken-ichi Nomura & Joseph Wang. Potential Ozone Depletion From Satellite Demise During Atmospheric Reentry in the Era of Mega-Constellations. *Geophysical Research Letters* 51, e2024GL109280 (2024). https://doi.org/10.1029/2024GL109280.

26 United Nations Framework Convention on Climate Change (UNFCCC). *United Nations Framework Convention on Climate Change, United Nations Treaty Series, Vol. 1771, pg. 107;* UNFCCC, Bonn, Germany, https://unfccc.int/resource/docs/convkp/conveng.pdf (1992).

27 United Nations Framework Convention on Climate Change (UNFCCC). *Paris Agreement, Treaties and Other International Acts Series, No. 16-1104;* UNFCCC, Bonn, Germany, https://unfccc.int/process-and-meetings/the-paris-agreement (2015).

28 Congressional Research Service (CRS). *U.S. Withdrawal from the Paris Agreement: Process and Potential Effects (R48504);* Congress.gov, Washington, D.C., https://www.congress.gov/crs-product/R48504 ((2025) (withdrawal effective Jan. 27, 2026)).

29 Environmental & Energy Law Program. *Regulatory Tracker: Paris Climate Agreement;* Environmental & Energy Law Program, Harvard Law School, Cambridge, Massachusetts, https://eelp.law.harvard.edu/tracker/paris-climate-agreement/ (Accessed August 2026).

30 International Court of Justice. *Obligations of States in respect of Climate Change: Advisory Opinion;* International Court of Justice, The Hague, The Netherlands, https://www.icj-cij.org/case/187 (2025).

31 United Nations Economic Commission for Europe (UNECE). *Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) and its Protocol on Strategic Environmental Assessment, United Nations Treaty Series, Vol. 1989, pg. 309;* UNECE, Geneva, Switzerland, https://unece.org/environment-policy/environmental-assessment (1991 (Entered into force 1997)).

32 Third United Nations Conference on the Law of the Sea. *United Nations Convention on the Law of the Sea, arts. 87, 91–94, 112–115, United Nations Treaty Series, Vol. 1833, p. 397;* United Nations (UN), New York, New York, https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf (1982).

33 Ronald Reagan. *Statement on United States Oceans Policy;* Ronald Reagan Presidential Library & Museum, Simi Valley, California, https://www.reaganlibrary.gov/archives/speech/statement-united-states-oceans-policy (1983).

34 United Nations (UN). *United Nations Charter (full text), arts. 2(4), 51;* UN, New York, New York, https://www.un.org/en/about-us/un-charter/full-text (Accessed August 2026).

35 Jack Beard & Dale Stephens (eds). *The Woomera Manual on the International Law of Military Space Operations;* Oxford University Press, Oxford, United Kingdom, https://doi.org/10.1093/law/9780192870667.001.0001 (2024).

36 Ram S. Jakhu & Steven Freeland (eds). *McGill Manual on International Law Applicable to Military Uses of Outer Space (MILAMOS);* Centre for Research in Air and Space Law, McGill University, Montreal, Canada, https://www.mcgill.ca/milamos/ (2022).

37 Council of Europe. *The Convention on Cybercrime (Budapest Convention, ETS No. 185) and its Protocols;* Council of Europe: Cybercrime, Budapest, Hungary, https://www.coe.int/en/web/cybercrime/the-budapest-convention (2001).

38 League of Arab States General Secretariat. *League of Arab States Convention on Combating Information Technology Offences;* Asian School of Cyber Laws (ASCL), Pune, India, Unofficial English translation at https://www.asianlaws.org/gcld/cyberlawdb/GCC/Arab%20Convention%20on%20Combating%20Information%20Technology%20Offences.pdf (2010 (entered into force 2014)).

39 United Nations Convention against Cybercrime (UNCC). *G.A. Res. 79/243, United Nations Convention Against Cybercrime;* United Nations (UN) Office on Drugs and Crime, Vienna, Austria, https://www.unodc.org/unodc/en/cybercrime/convention/home.html (signature and ratification status) (2024).

40 Pavlina Pavlova. *The Promise and Peril of the U.N. Convention Against Cybercrime;* Just Security, New York, New York, https://www.justsecurity.org/124057/promise-peril-cybercrime-convention/ (2025).

41 United Nations General Assembly. *Group of Governmental Experts on Advancing Responsible State Behaviour in Cyberspace in the Context of International Security (U.N. Doc. A/76/135);* United Nations (UN), New York, New York, https://docs.un.org/en/A/76/135 (2021).

42 Council of Europe: Data Protection. *Protocol Amending the Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data, C.E.T.S. No. 223 (not yet in force);* Council of Europe, Strasbourg Cedex, France, https://www.coe.int/en/web/data-protection/convention108-and-protocol (2018).

43 Council of Europe. *Council of Europe Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law (Council of Europe Treaty Series - No. 225);* Council of Europe, Strasbourg, France, https://www.coe.int/en/web/artificial-intelligence/the-framework-convention-on-artificial-intelligence (2024).

44 Organisation for Economic Co-operation and Development (OCED) Council on Artificial Intelligence. *Recommendation of the Council on Artificial Intelligence (OECD/LEGAL/0449);* OCED, Paris, France, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449 (2019 (amended 2024).

45 Scientific and Cultural Organization (UNESCO) United Nations Educational. *Recommendation on the Ethics of Artificial Intelligence: AI Ethics for the people;* UNESCO, Paris, France, https://www.unesco.org/en/artificial-intelligence/recommendation-ethics (2022).

46 United Nations General Assembly. *International Covenant on Civil and Political Rights, arts. 2(1), 17, United Nations Treaty Series, Vol. 999, pg. 171;* Office of the United Nations High Commissioner for Human Rights (UN Human Rights; OHCHR), Geneva, Switzerland, https://www.ohchr.org/en/instruments-mechanisms/instruments/international-covenant-civil-and-political-rights (1966).

47 Office of the United Nations High Commissioner for Human Rights (UN Human Rights; OHCHR). *OHCHR and privacy in the digital age;* OHCHR, Geneva, Switzerland, https://www.ohchr.org/en/privacy-in-the-digital-age (Accessed August 2026).

48 Office of the United Nations High Commissioner for Human Rights (UN Human Rights; OHCHR) & United Nations (UN). *Guiding Principles on Business and Human Rights: Implementing the United Nations 'Protect, Respect and Remedy' Framework;* UN and OHCHR, New York, New York and Geneva, Switzerland, https://www.ohchr.org/sites/default/files/documents/publications/guidingprinciplesbusinesshr_en.pdf (2011).

49 World Trade Organization (WTO). *General Agreement on Trade in Services (Marrakesh Agreement Establishing the World Trade Organization, Annex 1B) United Nations Treaty Series Vol. 1869, pg. 183;* WTO, Geneva, Switzerland, https://www.wto.org/english/docs_e/legal_e/gats_e.htm (1994).

50 *The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies;* Vienna, Austria, https://www.wassenaar.org/ (Accessed August 2026).

51 Missile Technology Control Regime (MTCR). *Homepage;* MTCR, Paris, France, https://www.mtcr.info/en (Accessed August 2026).

52 UN Conference on Trade and Development. *International Investment Agreements Navigator;* UNCTAD, Geneva, Switzerland, https://investmentpolicy.unctad.org/international-investment-agreements (Accessed August 2026).

53 U.S. Department of Transportation (DOT) Federal Aviation Administration (FAA). *Commercial Space Transportation;* FAA, Washington, D.C., https://www.faa.gov/regulations_policies/faa_regulations/commercial_space (Accessed August 2026).

54 Electronic Code of Federal Regulations (eCFR). *Part 450—Launch and Reentry License Requirements;* National Archives eCFR, Washington, D.C., https://www.ecfr.gov/current/title-14/chapter-III/subchapter-C/part-450 (Accessed August 2026).

55 Congressional Research Service (CRS). *Commercial Space: Federal Regulation, Oversight, and Utilization (R45416);* Library of Congress, Washington, D.C., https://www.congress.gov/crs-product/R45416 (2018).

56 U.S. Department of Transportation (DOT) Federal Aviation Administration (FAA). *Legislation & Policies, Regulations & Guidance;* FAA, Washington, D.C., https://www.faa.gov/space/legislation_regulation_guidance (Accessed August 2026).

57 U.S. Federal Communications Commission (FCC). *FCC Adopts New '5-Year Rule' For Deorbiting Satellites To Address Growing Risk Of Orbital Debris;* FCC, Washington, D.C., https://www.fcc.gov/document/fcc-adopts-new-5-year-rule-deorbiting-satellites (2022).

58 U.S. Government Accountability Office (GAO). *Satellite Licensing: FCC Should Reexamine Its Environmental Review Process for Large Constellations of Satellites (GAO-23-105005);* U.S. GAO, Washington, D.C., https://www.gao.gov/assets/gao-23-105005-highlights.pdf (2022).

59 The White House. *Enabling Competition in the Commercial Space Industry (Executive Order);* Washington, D.C., https://www.whitehouse.gov/presidential-actions/2025/08/enabling-competition-in-the-commercial-space-industry/ (2025).

60 John S. Seitz (Environmental Protection Agency (EPA) Office of Air Quality Planning and Standards (OAQPS)). *Letter from John S. Seitz to Pat Ladner (Alaska Aerospace Development Corp.);* EPA, Washington, D.C., https://www.epa.gov/sites/default/files/2015-08/documents/rocket.pdf (2000).

61 Andrew Jones. *China backs orbital data center startup with $8.4 billion in credit lines;* SpaceNews, Alexandria, Virginia, https://spacenews.com/china-backs-orbital-data-center-startup-with-8-4-billion-in-credit-lines/ (2026).

62 Roger (Fuhua) Ni. *China's Commercial Space Sector: A New Era of Growth and Opportunity;* Space & Satellite Professionals International (SSPI), New York, New York, https://www.sspi.org/chinas-commercial-space-sector-new-era-growth-and-opportunity (Accessed August 2026).

63 Xinhua. *From ground to orbit: China eyes computing in space;* The State Council Information Office (SCIO), The People's Republic of China (PRC), Beijing, China, http://english.scio.gov.cn/chinavoices/2026-04/27/content_118464689.html (2026).

64 *Beijing accelerates space data center;* Beijing Municipal Science & Technology Commission, Administrative Commission of Zhongguancun Science Park, Beijing, China, https://kw.beijing.gov.cn/xwdt/kcyx/xwdtcyfz/202511/t20251128_4309222.html (2025).

65 Science National Defense, Technology and Industry Committee of the People's Republic of China. *Interim Measures for the Administration of Licensing of Civil Space Launch;* China National Space Administration (CNSA), Beijing, China, https://www.cnsa.gov.cn/n6758823/n6758839/c6796213/content.html (2002).

66 Technology and Industry for National Defence (SASTIND) People's Republic of China (PRC) State Administration of Science. *Notice of the National Defense Science and Industry Bureau on Matters Related to Strengthening the Licensing Management of Civil Space Launch Projects;* SASTIND, Beijing, China, https://www.sastind.gov.cn/n10086167/n10086221/c10129160/content.html (2023).

67 National Defense Science and Industry Commission. *Administrative Measures for Registration of Space Objects;* China National Space Administration (CNSA), Beijing, China, https://www.cnsa.gov.cn/n6758823/n6758839/c6796215/content.html (2001).

68 Department of Science and Technology. *Interim Measures for the Administration of Civil Satellite Engineering, arts. 12-13;* China National Space Administration (CNSA), Beijing, China, https://www.cnsa.gov.cn/n6758823/n6758839/c6796155/content.html (2016).

69 China National Space Administration (CNSA). *Notice on Strengthening the Quality Supervision and Management of Commercial Space Projects;* The People's Republic of China (PRC), Beijing, China, https://www.gov.cn/zhengce/zhengceku/202507/content_7033049.htm (2025).

70 China National Space Administration (CNSA). *Notice on Issuing the Action Plan for Promoting High-quality Safe Development of Commercial Space Administration (2025-2027);* CNSA, Beijing, China, https://www.cnsa.gov.cn/n6758823/n6758839/c10719382/content.html (2025).

71 Shenzhen Securities Times Co. Ltd. (STCN). *Medium and Long-term Development Plan for National Civil Space Infrastructure;* Shenzhen Securities Times Co., Ltd., Shenzhen, China, https://stcn.com/article/detail/1407521.html (2024).

72 Cyberspace Administration of China (CAC) and the State Internet Information Office of the People's Republic of China (CIIO). *Cyber Security Law of the People's Republic of China, arts. 37, 39-40;* CAC, Beijing, China, www.cac.gov.cn/2025-12/29/c_1768735112911946.htm (2016).

73 Xinhua News Agency. *Data Security Law of the People's Republic of China;* Cyberspace Administration of China (CAC), Beijing, China, https://www.cac.gov.cn/2021-06/11/c_1624994566919140.htm (2021).

74 China People's Congress Network. *Personal Information Protection Law of the People's Republic;* Cyberspace Administration of China (CAC), Beijing, China, https://www.cac.gov.cn/2021-08/20/c_1631050028355286.htm (2021).

75 Cyber/Data/Privacy (CDP) Cooley LLP. *China Releases Multiple Key Draft Cyber and Data Security Regulations at Year-End 2025;* CDP Cooley LLP, Palo Alto, California, https://cdp.cooley.com/china-releases-multiple-key-draft-cyber-and-data-security-regulations-at-year-end-2025/ (2025).

76 Yan Luo. *China Amends Cybersecurity Law and Incident Reporting Regime to Address AI and Infrastructure Risks;* Covington & Burling LLP, Washington, D.C., https://www.globalpolicywatch.com/2025/10/china-amends-cybersecurity-law-and-incident-reporting-regime-to-address-ai-and-infrastructure-risks/ (2025).

77 13th National People's Congress of the People's Republic of China. *Export Control Law of the People's Republic of China;* Peking University School of Law, Beijing, China, law.pkulaw.com/chinalaw/346977.html (2020).

78 State Council of the People's Republic of China. *Regulations of the People's Republic of China on Export Control of Dual-Use Items (State Council Decree No. 792);* Ministry of Commerce of the People's Republic of China (MOFCOM), Beijing, China, www.mofcom.gov.cn/zwgk/zcfb/art/2024/art_bf56a4c613eb47af85712117561d609e.html (2024).

79 Deng Xiaoci. *NPC deputy proposes commercial satellite export policy;* GlobalSecurity.org, Alexandria, Virginia, https://www.globalsecurity.org/space/library/news/2025/space-250310-globaltimes02.htm (2025).

80 Kristen Pierce. *China's GEC update: What it means for data centers;* ACT Group, Amsterdam, Netherlands, https://www.actgroup.com/latest/blogs/china-s-gec-update-what-it-means-for-data-centers (2025).

81 French Parliament. *French Space Operations Act (Loi n° 2008-518 du 3 juin 2008 relative aux opérations spatiales);* Légifrance, Paris, France, https://www.legifrance.gouv.fr/loda/id/JORFTEXT000018931380/ (2008).

82 Centre National D'Études Spatiales (CNES). *FSOA: All you need to knwo about the French Space Operations Act: Space Flight Safety;* CNES, Paris, France, https://spacecare.cnes.fr/en/la-securite-des-vols-spatiaux-english/ (Accessed August 2027).

83 Centre National D'Études Spatiales (CNES). *FSOA: All you need to knwo about the French Space Operations Act: Technical Regulations;* CNES, Paris, France, https://spacecare.cnes.fr/en/the-fsoa-orbital-systems-office/technical-regulations/ (Accessed August 2026).

84 Agence Nationale des Fréquences (ANFR). *Satellites – Our Missions;* ANFR, Maisons-Alfort, France, https://www.anfr.fr/en/manage/satellites/our-missions (Accessed August 2026).

85 European Parliament. *Radio Spectrum Decision: Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community;* EUR-Lex (Publications Office of the European Union), Luxembourg City, Luxembourg, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32002D0676 (2002).

86 European Conference of Postal and Telecommunications Administrations (CEPT) Electronic Communications Committee (ECC). *Satellite Information;* CEPT, Copenhagen, Denmark, https://www.cept.org/ecc/topics/satellite-information (Accessed August 2026).

87 European Parliament. *NIS 2 Directive: Directive (EU) 2022/2555 of the European Parliament and of the Council of 14 December 2022 on measures for a high common level of cybersecurity across the Union, amending Regulation (EU) No 910/2014 and Directive (EU) 2018/1972, and repealing Directive (EU) 2016/1148 (Text with EEA relevance);* EUR-Lex (Publications Office of the European Union), Luxembourg City, Luxembourg, https://eur-lex.europa.eu/eli/dir/2022/2555/oj/eng (2022).

88 European Parliament. *General Data Protection Regulation: Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (Text with EEA relevance);* EUR-Lex (Publications Office of the European Union), Luxembourg City, Luxembourg, https://eur-lex.europa.eu/eli/reg/2016/679/oj/eng (2016).

89 European Data Protection Board (EDPB). *Guidelines 05/2021 on the Interplay between the application of Article 3 and the provisions on international transfers as per Chapter V of the GDPR;* EDPB, Brussels, Belgium, https://www.edpb.europa.eu/documents/guideline/guidelines-052021-on-the-interplay-between-the-application-of-article-3-and-the_en (2023).

90 European Parliament. *Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (codification) Text with EEA relevance;* EUR-Lex (Publications Office of the European Union), Luxembourg City, Luxembourg, https://eur-lex.europa.eu/eli/dir/2011/92/oj/eng (2011).

91 European Parliament. *Regulation (EU) 2021/821 of the European Parliament and of the Council of 20 May 2021 setting up a Union regime for the control of exports, brokering, technical assistance, transit and transfer of dual-use items (recast);* EUR-Lex (Publications Office of the European Union), Luxembourg City, Luxembourg, https://eur-lex.europa.eu/eli/reg/2021/821/oj/eng (2021).

92 European Parliament. *Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the safety, resilience and sustainability of space activities in the Union;* EUR-Lex (Publications Office of the European Union), Luxembourg City, Luxembourg, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52025PC0335 (2025).

93 European Parliament. *Procedure 2025/0335/COD: COM (2025) 335: Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the safety, resilience and sustainability of space activities in the Union;* EUR-Lex (Publications Office of the European Union), Luxembourg City, Luxembourg, https://eur-lex.europa.eu/procedure/EN/2025_335 (2025).

94 Competitiveness Council. *Competitiveness Council (Research and Space), 29 May 2026;* Council of the European Union, Brussels, Belgium, https://www.consilium.europa.eu/en/meetings/compet/2026/05/29/ (2026).

95 Japan's Cabinet Office and Committee on National Space Policy. *Act on the launch of satellites and the management of satellites and Act on Launching Spacecraft and Launch Vehicle and Control of Spacecraft (Act No. 76 of 2016);* Japanese Law Translation Project, Tokyo, Japan, https://www.japaneselawtranslation.go.jp/ja/laws/view/4813 (2016).

96 Government of Japan Cabinet Office. *Information on the Space Activities Act and acceptance of applications;* Tokyo, Japan, https://www8.cao.go.jp/space/application/space_activity/application.html (Accessed August 2026).

97 Japan’s 7th Ordinary Congress (Third Yoshida Cabinet). *Radio Law, art. 6;* Japan’s Telecommunications Bureau of the Ministry of Internal Affairs and Communications, Tokyo, Japan, https://www.tele.soumu.go.jp/horei/law_honbun/72001000.html (2026).

98 Japan’s Telecommunications Bureau of the Ministry of Internal Affairs and Communications. *Establishment procedure of the satellite and earth station;* Tokyo, Japan, https://www.tele.soumu.go.jp/j/adm/proc/manual/ (Accessed August 2026).

99 Japan’s Ministry of Economy Trade and Industry (METI). *The space industry;* METI, Tokyo, Japan, ttps://www.meti.go.jp/policy/mono_info_service/mono/space_industry/index.html (Accessed August 2026).

100 Space Strategy Fund. *On-orbit data center construction technology;* Japan Aerospace Exploration Agency, Tokyo, Japan, https://fund.jaxa.jp/techlist/theme2_12/ (Accessed August 2026).

101 Government of Japan Personal Information Protection Committee. *Guidelines for the Protection of Personal Information (Provision to a foreign company) Act No. 57 of 2003, art. 28;* Tokyo, Japan, https://www.ppc.go.jp/personalinfo/legal/guidelines_offshore/ (2025).

102 Japan External Trade Organization (JETRO). *Trade and Investment Consultation Q&A: Catch-all regulations in security trade control: Japan;* JETRO, Tokyo, Japan, https://www.jetro.go.jp/world/qa/04A-020118.html (Accessed August 2026).

103 General Headquarters (GHQ) of the Supreme Commander for the Allied Powers (SCAP). *Foreign Exchange and Foreign Trade Act (Act No. 228 of 1949) (FEFTA);* Japanese Law Translation Project, Tokyo, Japan, https://www.japaneselawtranslation.go.jp/en/laws/view/4412/en (1949).

104 UAE Legislation. *Federal Decree by Law Concerning the Regulation of the Space Sector (Law No. (46) of 2023), art. 1;* Government of the United Arab Emirates, Abu Dhabi, United Arab Emirates, https://uaelegislation.gov.ae/en/legislations/2129 (2023).

105 Telecommunications and Digital Government Regulatory Authority (TDRA). *Space regulation;* TDRA, Abu Dhabi, United Arab Emirates, https://u.ae/en/about-the-uae/science-and-technology/key-sectors-in-science-and-technology/space-science-and-technology/space-regulation (Accessed August 2026).

106 Council for Strategic and Defense Research (CSDR). *A New Draft for the Space Activities Bill: Amidst A Sea-Change in India's Space Sector;* CSDR, New Delhi, India, https://csdronline.com/blind-spot/a-new-draft-for-the-space-activities-bill-amidst-a-sea-change-in-indias-space-sector/ (2025).

107 Chris Grayling MP (UK Parliament). *Space Industry Act 2018, c. 5;* The National Archives (HM Government), Surrey, United Kingdom, https://www.legislation.gov.uk/ukpga/2018/5 (2018).

108 Parliament of the United Kingdom. *Data Protection Act 2018;* The National Archives (HM Government), Surrey, United Kingdom, https://www.legislation.gov.uk/ukpga/2018/12/contents (2018).

109 Information Commissioner's Office (ICO). *Territorial scope fundamentals;* ICO, Manchester, United Kingdom, https://ico.org.uk/media2/migrated/4031113/ic-327905-y2y5-knowledge-hub-territorial-scope.pdf (Accessed August 2026).

110 Isreal Space Agency (ISA). *About the Israeli Space Agency;* ISA, Tel Aviv, Israel, https://www.space.gov.il/en/about (Accessed August 2026).

111 Revital Karin Sela (Israel Space Agency). *Statement of Israel, 66th Session of the Committee on the Peaceful Uses of Outer Space;* United Nations Office for Outer Space Affairs (UNOOSA), Vienna, Austria, https://www.unoosa.org/documents/pdf/copuos/2023/Statements/6_PM/4_Israel_6_Jun_PM_1.pdf (2023).

112 Global Legal Monitor. *Israel: Amendment to Privacy Protection Law Goes into Effect (Protection of Privacy Law, 5741-1981, as amended by the Privacy Protection Law (Amendment No. 13), 5784-2024);* Library of Congress, Washington, D.C., https://www.loc.gov/item/global-legal-monitor/2025-11-17/israel-amendment-to-privacy-protection-law-goes-into-effect/ (2025).

113 Dan Or-Hof. *Israel marks a new era in privacy law: Amendment 13 ushers in sweeping reform;* International Association of Privacy Professionals (IAPP), Portsmouth, New Hampshire, https://iapp.org/news/a/israel-marks-a-new-era-in-privacy-law-amendment-13-ushers-in-sweeping-reform (2025).

114 Dan Or-Hof, Eran Gandman, Netanel Aharon & Matan Adar. *Data Protection & Privacy 2026: Israel;* Chambers and Partners, London, United Kingdom, https://practiceguides.chambers.com/practice-guides/data-protection-privacy-2026/israel (Accessed August 2026).