

Export Control in Commercial Space Cooperation: Legal and Policy Considerations from China's Perspective

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Abstract

International collaboration in the commercial space sector is a strategic approach aimed at optimizing the space industry and maximizing mutual benefits for all stakeholders involved. Despite certain developed nations, such as the United States, imposing stringent controls on the export of space-related goods, technology, and services through regulatory frameworks like the Missile Technology Control Regime (MTCR) and Wassenaar Arrangement along with domestic legislation, China actively seeks opportunities for cooperation. However, China's current export control regulations of the space industry lack unified guidelines that hinder potential internationalization efforts in commercial space activities. Therefore, it is crucial for China to establish a comprehensive and scientifically grounded legal framework and policy support mechanism concerning export controls on items related to outer-space endeavors. Additionally, active participation by China within multilateral export control systems can help overcome barriers hindering international collaboration in commercial space by fostering transparency, mutual trust, and reciprocity.

Keywords: Export control; Commercial space; China's Export Control Law; Wassenaar Arrangement; MTCR; ITAR; and EAR.

1. Current Status and Prospects for Commercial Space Cooperation

The global commercial space industry has recently encountered significant challenges stemming from the impact of the COVID-19 pandemic. In 2022, a

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resurgence in consumer demand, gradual reopening of international borders, and diminishing influence of the pandemic's effects have been observed. According to the Commercial Aerospace Insight Report 2022, aerospace executives maintain a cautiously optimistic outlook for the future. In an economic landscape where the pandemic is gradually receding and nations persistently advance commercial spaceflight to foster further economic growth, the continued development of commercial spaceflight emerges as an inexorable trend.

1.1. Major Space-faring Countries' Current Situation and Prospects of Commercial Aerospace Development

As an established space power, the United States embarked on the process of commercial aerospace development as early as 1984. To date, its commercial aerospace sector has emerged as a dominant force within the national space economy. Taking satellites as an illustrative example, out of the 2,944 satellites owned by the US by the end of 2021, an impressive 2,516 were exclusively dedicated to commercial purposes, constituting over 85% of the total count.¹ After decades of extensive exploration in the field of commercial aerospace, the United States has successfully established a robust and sophisticated domestic legislative framework for facilitating commercial spaceflight activities. Moreover, stringent regulations such as International Traffic in Arms Regulations (ITAR) and Export Administration Regulations (EAR) are imposed on exporting associated technology and services including space launchers, satellites, and other related items.

In Europe, several countries have made significant strides in the field of aerospace commercialization. For instance, France has recently been actively promoting the Ariane series of launch vehicles and advanced application satellites.² Furthermore, the European Space Agency's space budget for 2021-2027 has witnessed an increase from €13.2 billion to €14.9 billion, with a specific focus on investments in satellite navigation, Earth observation, space situational awareness, and communications security for future endeavors.³ Additionally, the EU itself has developed robust export control regimes governing military and dual-use goods exports through initiatives such as the EU Code of Conduct for Military Exports and the Common Control Regime established for dual-use goods under Council Regulation (EC) No 1334/2000.

1 Kelly Whealan George, *The Economic Impacts of the Commercial Space Industry*. *Space Policy* 47 (2019) 181-186. <https://doi.org/10.1016/j.spacepol.2018.12.003>.

2 See "Union of Concerned Scientists. USC Satellite Database" for more information, see <https://www.ucsusa.org/resources/satellite-database>, last visited 6 March 2023.

3 Giacomo Gatto, Ilan Rozenkopf, Tobias Sodoge, and Ireen Vogt, *Strengthening collaboration in the European space ecosystem*, *Strengthening Collaboration in the European Space Ecosystem* (June 22, 2022). <https://www.mckinsey.com/industries/aerospace-and-defense/our-insights/strengthening-collaboration-in-the-european-space-ecosystem>, last visited 8 May 2023.

Russia, a long-established space power, has achieved significant milestones in the field of space exploration; however, it has made limited progress in commercial space endeavors. Nevertheless, it is noteworthy that in April 2019, the Russian government announced its intention to revise and update key documents such as the National Space Policy for 2030 and beyond and the National Space Group Corporation Development Strategy. This strategic move aims to enhance Russia's space development system and bolster its capabilities in providing commercial space services. Furthermore, Russia's export control regulations pertaining to aerospace products and technologies are decentralized within both national "military" export and import control regulations as well as "dual-use goods and technologies" export control regulations.

1.2. China's Current Situation and Prospects for Commercial Space Industry Development

In recent decades, China has made remarkable advancements in the field of space exploration. While achieving full privatization and commercialization of space activities remains a work in progress, China has effectively implemented specific commercial practices related to space technology.⁴ The rapid proliferation and application of space technology within a condensed timeframe demonstrate the immense potential for commercial space development in China. This progress is also evident in human spaceflights, as demonstrated by the construction of China's Shenzhou series of manned spacecraft and its newly established space station.

While China possesses immense potential for the development of commercial spaceflight, it faces certain challenges and obstacles. Firstly, there is a lack of specific plans on the exploration of technology commercialization in this field. Secondly, there exists a regulatory gap concerning laws and regulations governing activities related to commercial space endeavors.⁵ Lastly, China has not yet become a member of the Missile Technology Control Regime (MTCR), resulting in inadequate legislation and regulations regarding its export control system.

4 See Benchmark International, 2022 GLOBAL SPACE INDUSTRY REPORT, <https://blog.benchmarkcorporate.com/2022-global-space-industry-report>, last visited 13 June 2023.

5 Andrew Jones, China creates commercial space alliance, expands launch complex, see <https://spacenews.com/china-creates-commercial-space-alliance-expands-launch-complex/> for more information, last visited 6 May 2023.

2. Space-related Export Control Regimes

Currently, the Wassenaar Arrangement (W.A.),⁶ MTCR, ITAR, and EAR represent the world's most mature and comprehensive export control systems. The Missile Technology Control Regime (MTCR) is a multilateral regime aimed at limiting missile proliferation and technology transfer among member states as well as non-members. In contrast, the Wassenaar Arrangement was established to enhance regional and global security by promoting transparency and accountability in transfers of conventional arms and dual-use goods and technologies. The International Traffic in Arms Regulations (ITAR) and Export Administration Regulations (EAR) are domestic U.S. regimes designed to safeguard national security by preventing unauthorized exports of controlled/defense items to foreign entities. These four regimes have played crucial roles in fostering export transparency while mitigating risks to international security; however, given the evolving global landscape, there remains an urgent need for further establishment and enhancement of export control-related treaties or systems to facilitate the development of commercial space industries worldwide.

2.1. International Export Control Regimes

The Missile Technology Control Regime (MTCR) serves as the primary international export control system for space technologies and products, aiming to restrict missile proliferation and technology transfer through an informal political understanding among countries. However, it is important to note that this agreement lacks legally binding effects on member states.⁷ As of 2022, the MTCR boasted a membership of 35 states. The Guidelines within the MTCR regime represent a shared export control policy adhered to by partners, including the Equipment, Software, and Technology Annex—a comprehensive inventory encompassing all essential equipment, materials, software, and technologies necessary for missile development, production, and operation.⁸

The Annex classifies export control items into two categories: Category I encompasses integral rocket systems and their complete subsystems capable of delivering payloads weighing at least 500 kg to a minimum distance of 300 km, along with specially designed production facilities and equipment. Due to

6 For more details, see GOV.UK, National space strategy. (February 1, 2022), <https://www.gov.uk/government/publications/national-space-strategy/national-space-strategy>, last visited 6 May 2023.

7 For more information, see Arms Control Association, The Missile Technology Control Regime at a Glance, <https://www.armscontrol.org/factsheets/mtrc>, last visited 25 April 2023.

8 U.S. Department of State, Missile Technology Control Regime (MTCR) Frequently Asked Questions, <https://www.state.gov/remarks-and-releases-bureau-of-international-security-and-nonproliferation/missile-technology-control-regime-mtrc-frequently-asked-questions/>, last visited 8 May 2023.

the utmost sensitivity associated with the equipment and technology falling under this category, its transfer is subject to highly stringent restrictions that impose a ‘strong presumption of non-transferability’. In principle, regardless of the purpose of export, it is considered non-transferable; only rare exceptions permit its transfer. Category II comprises other missile-related components with lower sensitivity levels as well as dual-use capabilities, alongside complete missile systems capable of achieving a range exceeding 300 km irrespective of payload.⁹ Despite the relatively relaxed control over Category II items, strict adherence to licensing requirements remains mandatory.

Additionally, the Wassenaar Arrangement (W.A.) serves as the primary multilateral export control regime at the international level. Established in July 1996, it encompasses conventional arms, dual-use goods, and technologies. The W.A., which emerged from the Coordinating Committee for Multilateral Export Controls (COCOM) based in Paris during the Cold War era, now functions as a post-Cold War mechanism replacing COCOM. COCOM was responsible for coordinating exports of sensitive items that could potentially contribute to weapons proliferation with military applications and aimed to impose an embargo on Western countries’ exports to socialist nations.¹⁰ Following COCOM’s dissolution in 1994, W.A. replaced it as a post-Cold War mechanism with broader objectives including promoting transparency in conventional arms transfers and dual-use goods and technologies while enhancing member states’ responsibilities in this regard. Unlike its predecessor, W.A. does not grant individual members veto power over organizational decisions but instead strives to foster regional and international peace and security.

2.2. Domestic Export Control Systems of Major Space-Faring Nations

The U.S. export control system is primarily composed of the International Traffic in Arms Regulations (ITAR) and the Export Administration Regulations (EAR), which are specifically designed to regulate access to particular types of technology and data, with the aim of preventing inadvertent disclosure or unauthorized transfer of sensitive information to foreign nationals who lack proper authorization or raise suspicions.¹¹ ITAR regulations apply to any entity engaged in manufacturing, exporting, or temporarily importing defense products or services from the U.S., falling

9 See the website of Arms Control Association, “The Missile Technology Control Regime at a Glance”, available at <https://www.armscontrol.org/factsheets/mtcr>, last visited 25 February 2023.

10 Yann Aubin, Arnaud Idiart, *Export Control Law and Regulation Handbook*, third ed. Kluwer Law International, 2007, p. 52.

11 Richard Cupitt and Suzette Grillot, *COCOM is Dead, Long Live COCOM: Persistence and Change in Multilateral Security Institutions*, *British Journal of Political Science* 27 (1997) 364; Jamil Jaffer, *Strengthening the Wassenaar Export Control Regime*, *Chicago Journal of International Law* 3 (2002) 519.

within various segments of the supply chain that require compliance with ITAR obligations. Items and services subject to regulation under this treaty are listed on the U.S. Munitions List (USML), encompassing 21 categories including aircraft, ground vehicles, and firearms; within each category, items can be classified as software, technical data, or defense services. However, it is important to note that not all defense items are subjected to these rules; therefore, meticulous attention must be paid during review processes.¹²

Although not explicitly listed in the ITAR, numerous items may still fall within the jurisdiction of the EAR, which encompasses a wide range of goods including ammunition, firearms, aircraft, military vehicles, materials, and chemicals. The Bureau of Industry and Security (BIS), operating under the U.S. Department of Commerce, administers the EAR through its primary document known as the Commercial Control List (CCL). The CCL includes both commercial and military application items but excludes technical data.¹³ Exceptions to this treaty include most exports of goods and technical information intended for consumption within Canada; exports intended for use or consumption by the U.S. Armed Forces with government authorization; and exports regulated by other U.S. government agencies (e.g., specific foreign patent applications).

The EU's export control system, while not as comprehensive and specific as that of the United States, incorporates specific institutional arrangements. The control lists implemented by the EU are derived from various international export control regimes, including the Wassenaar Arrangement (W.A.), the Australia Group (A.G.), the Missile Technology Control Regime (MTCR), and the Nuclear Suppliers Group (NSG). The EU export control system applies to all member states within the European Union. Unlike its U.S. counterpart, which has a distinct name, the EU export control system is established through different numbered regulations that evolve with relevant content changes. For instance, Regulation 428/2009 came into effect on August 27th, 2009, to govern the exportation, transfer, brokering, and transit of dual-use items.

2.3. Domestic Export Control System in China

In response to the rapid progress of the space industry, China has formulated a series of export control laws and administrative regulations concerning space activities, driven by considerations of national sovereignty and security. These primarily encompass the Export Control Law, Regulations on Export Control of Missiles and Missile-related Items and Technologies, as well as the Regulations on Administration of Arms Export.

12 Allan N. Kornblum, *Intelligence and the Law: Cases and Materials*, Defense Intelligence College, 1985.

13 See Rahul Awati, *ITAR and EAR compliance*, available at <https://www.techtarget.com/whatis/definition/ITAR-and-EAR-compliance>, last visited 24 April 2023.

The Regulations on Administration of Arms Export (the Arms Regulations), issued in 1997 and amended in 2002, aim to enhance the centralized management of military exports and uphold the orderly conduct of such exports. In 2003, the Chinese Ministry of Science and Technology, in collaboration with The General Reserve Department of the People's Liberation Army (PLA) of China, formulated the Export Control List of Arms in accordance with the Arms Regulations. This comprehensive list encompasses launch vehicles, missile weapon systems, and military satellites. To further strengthen the export control system, enhance export management practices, and prevent proliferation of missiles and other delivery systems capable of transporting weapons for mass destruction purposes, China's State Council introduced the Regulations on Export Control of Missiles and Missile-Related Items and Technologies (the Missiles Regulations) in 2002.¹⁴ However, both the Arms Regulations and Missiles Regulations are administrative regulations pertaining to export control in China; they were initially implemented at an early stage with relatively decentralized content, which presents challenges when adapting them to meet current requirements associated with commercial space development.

Faced with an increasingly complex commercial space environment, China enacted the Export Control Law on October 17, 2020, which came into effect on December 1, 2020. The primary objectives of this legislation are to safeguard national security and interests, fulfill international obligations such as non-proliferation, and strengthen export control regulations.¹⁵ Aligned with the comprehensive national security concept, the Export Control Law represents China's first legal regulation of export control. The law consists of five chapters and 49 articles that provide detailed provisions on export control lists, temporary controls, comprehensive controls, export business qualifications and licensing systems, end-user and end-use management, extraterritorial application, and reciprocal measures. In addition to traditional dual-use items along with military goods and nuclear technology/materials; controlled items also include other goods, technologies, and services relevant to upholding national security interests while fulfilling international obligations such as non-proliferation.¹⁶ The Export Control

14 See Regulations of the People's Republic of China on Export Control of Missiles and Missile-related Items and Technologies (August 25, 2002) for more details, http://un.china-mission.gov.cn/eng/chinaandun/disarmament_armscontrol/qtxx/200208/t20020825_8412426.htm, last visited 10 May 2023.

15 Yun Zhao, Yongmin Bian, Export control regime for space items in China: Opportunities and challenges in the new era. *Space Policy* 27 (2011) 110, <https://doi.org/10.1016/j.spacepol.2011.04.009>.

16 The State Council Information Office of the People's Republic of China, China's Export Controls. (First Edition, December 2021) https://english.www.gov.cn/archive/whitepaper/202112/29/content_WS61cc01b8c6d09c94e48a2df0.html, last visited 8 May 2023.

Law embodies China's stance and approach to safeguarding national security interests while fulfilling international obligations, demonstrating the fruits of China's innovation in export control and providing legal support for refining the export control system.¹⁷

3. Challenges Faced by China in Seeking International Cooperation

Due to the limitations of multilateral export control regimes at the international level and domestic export control regimes in other countries, as well as inadequate relevant domestic legislation in China, China faces challenges in pursuing international cooperation in the commercial space field both domestically and internationally.

3.1. Challenges for China at the International Level

3.1.1. Multilateral Export Control Mechanisms as Barriers against China in Seeking International Cooperation in Commercial Space

Internationally, the export of space-related products and technologies is rigorously regulated by developed Western countries, led by the U.S., through multilateral export control regimes such as the Wassenaar Arrangement (W.A.) and the Missile Technology Control Regime (MTCR). As previously mentioned, the W.A. has evolved from its predecessor, COCOM. The W.A. still maintains a strong connection with COCOM in terms of inheriting certain aspects of export restrictions, which is evident in its activities and control lists. Furthermore, membership within the W.A., comprising influential industrial nations like the U.S., Russia, France, and Germany, poses significant barriers for latecomers like China to introduce advanced aerospace products and technologies from established industrial countries. One notable example is how intervention from the U.S. in 2006 resulted in Italy's space company Alenia ultimately terminating a cooperation agreement with China for satellite launches despite facing financial losses and damage to their reputation.¹⁸

The Missile Technology Control Regime (MTCR) serves as the primary international mechanism for preventing the proliferation of missile technology. As the initiator and main promoter of MTCR, the United States plays a decisive role in its operation and future development. However, its pragmatic approach has significantly undermined the credibility of MTCR. For instance, the United States exerted pressure on Brazil to abandon its

17 Export Control Law of the People's Republic of China, Article 2. <http://www.npc.gov.cn/englishnpc/c23934/202112/63aff482feca44a591b45810fa2c25c4.shtml>, last visited 8 May 2023.

18 The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies, List of Dual-Use Goods and Technologies and Munitions List (December 1, 2022). <https://www.wassenaar.org/>, last visited 27 April 2023.

independent space program.¹⁹ China's position towards the Missile Technology Control Regime (MTCR) has undergone a gradual transformation over time. During the 1990s, the Chinese government expressed opposition to perceived double standards and discriminatory arrangements in global non-proliferation efforts led by the United States. However, post-2000, China started considering potential membership in MTCR and actively incorporated international experiences, including those of MTCR itself, to formulate comprehensive regulations on export controls for missiles and associated items/technologies. Despite facing hindrance from the U.S., which cited disparities between China's missile control list and that of MTCR, China continued its pursuit of joining MTCR.

In summary, the developed Western countries, led by the United States, have hindered the effective functioning of the multilateral export control system through manipulation of its mechanisms and exertion of pressure on member nations. By imposing restrictions on China's access to space products and technologies, they impede the development of China's related space industries and technologies, thereby presenting challenges for China in seeking international cooperation within the commercial space sector.

3.1.2. Challenges to China from the U.S. Domestic Export Control System

Since the 21st century, China's rapid economic development has presented a challenge to U.S. global leadership and shifted the Sino-U.S. relationship towards a competitive stance, with the export control sector bearing the brunt of this shift.²⁰ Regarding the U.S. domestic export control system, both ITAR and EAR hinder cooperation between China and the United States in the commercial space sector, thereby impacting China's extensive international collaborations with other nations as well. The ITAR encompasses all items listed on the U.S. Munitions List, including those covered by the 'see-through rule', which implies that any final product containing an ITAR-controlled component or material will be subject to ITAR controls regardless of its primarily commercial nature.²¹ In comparison to ITAR, EAR possesses a broader jurisdictional scope whereby even non-U.S. companies exporting products or technologies not originating from the U.S., can fall under EAR regulations if they contain or utilize a certain percentage or more of technology or products controlled by the U.S. Consequently, the United States maintains an extensive regulatory framework that effectively impedes China's exportation of pertinent aerospace

19 For more information, see Haiguo Tuzhi, Artificial Intelligence Weekly Issue 134, <https://www.yunzhan365.com/68880284.html>, last visited 8 May 2023.

20 Asif H Qureshi, *The Americanization of the World Trade Order*, first ed., Routledge Press, 2022, p. 1. <https://doi.org/10.4324/9781003047575>.

21 Ellzey, C. H., Promoting globalization in space policy: look at United States export controls, *Journal of Space Law* 44 (2020) 297. <https://heinonline.org/HOL/P?h=hein.journals/jrsl44&i=284>.

technologies and products, presenting a formidable challenge for China in its pursuit of international collaboration and further advancement within the space industry.

3.2. Obstacles Caused by Chinese Domestic Legislation

China's national export control legislation was implemented relatively late, with the introduction of the Export Control Law (ECL) in 2020. Since then, significant changes have occurred both domestically and internationally. On December 29, 2021, the State Council Information Office published a white paper on export controls, providing a comprehensive overview of China's current legal and regulatory framework for export controls as well as potential future developments in export control governance.²² The latest white paper specifically criticizes potential abuses of export control measures, such as unjustified imposition of discriminatory restrictions, application of double standards to non-proliferation efforts, and utilization of multilateral mechanisms to discriminate against or exclude specific countries. Additionally, the white paper emphasizes China's commitment to international exchange and cooperation on bilateral and multilateral export controls. Notably, China has engaged in bilateral consultations and exchanges with the United States, Russia, the United Kingdom (UK), France Germany, and European Union (EU) regarding actions against illicit nuclear proliferation activities; it has also collaborated with the United Nations on various multilateral export control mechanisms including but not limited to Nuclear Suppliers Group (NSG), Missile Technology Control Regime (MTCR), Wassenaar Arrangement (W.A.), and Australia Group.²³ According to the 2021 white paper, China is confronted with challenges in export control concerning research and development in crucial technological domains, as well as the sharing of resources and technologies through international cooperation. Currently, China lacks a unified export control list within its existing laws and regulations. Instead, controlled items such as goods, technologies, and services are classified into distinct lists based on specific control reasons. These encompass military items (including police equipment), dual-use items (such as chemicals, biological materials, missiles, and nuclear substances), other controlled items (like precursor chemicals, nuclear materials, civil aviation items, and encrypted items), along with other technologies that are prohibited or restricted from being exported by China.²⁴

22 The Central People's Government of the People's Republic of China, China's Export Controls (December 29, 2021). http://www.gov.cn/zhengce/2021-12/29/content_5665104.htm, last visited 9 May 2023.

23 Fieldfisher, China's Export Controls White Paper, <https://www.fieldfisher.com/en/insights/china-s-export-controls-white-paper>, last visited 28 April 2023.

24 Export Control Law of the People's Republic of China. <http://www.npc.gov.cn/englishnpc/c23934/202112/63aff482fece44a591b45810fa2c25c4.shtml>, last visited 8 May 2023.

It can be inferred that (1) these items encompass national and public interests, making international cooperation challenging and resulting in the absence of standardized export control legislation. (2) Other countries impose more intricate export control restrictions on China, while China lacks regulations or guidance on relevant countermeasures and resolutions. For instance, the U.S. Bureau of Industry and Security (BIS) issued a final rule titled “Revised and Clarified Rules for China’s Export and Re-export Controls” on June 19, 2007.²⁵ (3) China’s domestic legislative system is imperfect. Despite promulgating and implementing the Export Control Law in 2020, this law assumes an overarching role without providing direct and explicit guidance in certain practical processes; instead, such guidance is dispersed across multiple laws, administrative regulations, and other directives. Prior to the enactment of the Export Control Law, China primarily relied on the Foreign Trade Law of the People’s Republic of China as its existing legal framework pertaining to export control. However, this framework lacked a comprehensive regulatory system with uniform implementation standards. Furthermore, there is currently no statutory linkage mechanism between enforcement agencies such as Customs and the Ministry of Commerce within the regulatory activities governed by the Export Control Law, resulting in issues related to intra-group technical collaboration.²⁶

4. China’s Possible Response in the Face of Challenges and Obstacles

Due to the imposition of export restrictions on space products and technologies by developed Western countries, led by the U.S., through multilateral export control systems and domestic legislation, China’s national laws and institutional mechanisms in the field of export control still require further development. In response to this challenge, China has the potential to make significant progress in internationalizing commercial space activities by focusing on four key aspects.

4.1. Enhance the Ability of Independent Research and Development

From the perspective of the Wassenaar Arrangement (W.A.), the Missile Technology Control Regime (MTCR), and U.S. domestic export control regimes, it is crucial for China to prioritize restrictions on critical space products and technologies. In this context, it is imperative for China to persist in fostering independent innovation, nurturing technical talents, and

25 Federal Register, Revisions and Clarification of Export and Reexport Controls for the People’s Republic of China (PRC); New Authorization Validated End-User; Revision of Import Certificate and PRC End-User Statement Requirements (June 19, 2007). <https://www.federalregister.gov/documents/2007/06/19/E7-11588/revisions-and-clarification-of-export-and-reexport-controls-for-the-peoples-republic-of-china-prc>, last visited 9 May 2023.

26 Trust Law Search, After the implementation of the Export Control Law, five major problems still need to be discussed. <https://myingda.wkinfo.com.cn/professional-articles/detail/NjAwMDAwOTExMjU%3D>, last visited 9 May 2023.

increasing investment in scientific research within existing institutions, with a particular focus on aerospace-related items restricted under multilateral export control regimes applicable to China. Additionally, enhancing the dissemination of core technologies is paramount as demonstrated by China's successful development of the C919 national aircraft.²⁷ Furthermore, given the diversification of participants in space activities, it becomes imperative to harness domestic private capital and technology while exploring a collaborative mechanism between government and private enterprises amidst the internationalization of commercial space.

4.2. Improvement of the Domestic Space Export Control Legal System and Institutional Support Mechanism

Firstly, China should consider providing export-related guidance for the establishment of a robust legal framework for export control. Given the extensive scope of the export control system, it is challenging to develop comprehensive legislation comparable to that of the Civil Code.²⁸ Therefore, based on the current implementation of export control laws in China, providing pertinent guidance and illustrative cases for integration can serve as valuable points of reference.

Furthermore, China should expeditiously implement regulations on the export control system and diligently follow up on relevant drafts. China has been consistently strengthening its legal framework for export control.²⁹ For instance, in order to modernize its export control regime, China is actively adopting internationally recognized practices such as implementing license management systems, requiring end-user and end-use certificates, and facilitating general licensing procedures.³⁰

Thirdly, China should strengthen the auxiliary mechanisms associated with its export control system and facilitate the harmonization of China's export control regime with that of other nations. An interconnected aspect to consider is the compliance system. In 2021, the Ministry of Commerce of the People's Republic of China (MOFCOM) issued guidelines such as "Guidelines for International Compliance in Export Control of Dual-use

27 See Feng Jie, Wang Jian, Guo Ming, Li Hui, Ding Jie, Analysis and Enlightenment of the Control List of the Wassenaar Arrangement, *Science and Technology Management Research* 19 (2022) 42 for more details, available at <https://doi.org/10.3969/j.issn.1000-7695.2022.19.004>.

28 Gibson Dunn, China's New Draft Export Control Law and Its Implications for International Trade (August 31, 2020). <https://www.gibsondunn.com/china-new-draft-export-control-law-and-its-implications-for-international-trade/>, last visited 28 April 2023.

29 See Zhong Lun, Yearly Review: China's Enforcement of the Export Control Law, <https://www.zhonglun.com/Content/2022/01-26/1553315363.html>, last visited 2 May 2023.

30 Fieldfisher, China's Export Controls White Paper, <https://www.fieldfisher.com/en/insights/china-s-export-controls-white-paper>, last visited 28 April 2023.

Items” and “Guidelines for Building Import and Export Compliance Mechanisms for Nuclear Items,” along with other governmental documents aimed at guiding industries and enterprises in fulfilling their compliance obligations.³¹ To further enhance import-export activities with foreign countries, it is imperative for China to regulate corporate compliance practices more effectively while providing comprehensive goods scope or control lists to align its compliance system with international standards.

4.3. Actively Seek International Cooperation in the Context of the Sino–U.S. Trade Conflict

China’s commitment to international exchange and cooperation on bilateral and multilateral export controls is detailed in an official White Paper released in 2021. For example, China has engaged in bilateral consultations and exchanges with the United States, Russia, the United Kingdom, France, Germany, and the European Union regarding measures to combat illicit nuclear proliferation activities. Furthermore, discussions have taken place with the United Nations concerning other multilateral export control mechanisms such as the Nuclear Suppliers Group (NSG), Missile Technology Control Regime (MTCR), Wassenaar Arrangement (W.A.), and Australia Group (A.G). The ongoing Sino-U.S. trade conflict has resulted in Chinese companies being consistently added to U.S. export control lists. In response to such cases, China possesses legal means of recourse against the U.S., including its newly implemented “Unreliable Entity List” and associated blacklists within its updated export regime.

There is significant potential for collaboration between China and the European Union (EU) based on shared interests and demands. In terms of export controls within the EU, individual Member States typically hold authority in accordance with their national legislation. At the international level, Europe and the United States have formed an alliance to safeguard their respective national interests. However, if China’s core interests align with those of European countries and further tariffs are imposed by the U.S. on EU goods, China could potentially implement export controls as a response to U.S. sanctions while fostering closer cooperation with Europe.

Moreover, China and Russia have forged robust collaborations across diverse spheres of space initiatives encompassing even space launches. In November 2022, an all-encompassing framework for spatial cooperation between the Russian National Space Corporation and the Chinese National Space Administration was inked, outlining plans from 2023 to 2027 as a guiding blueprint for forthcoming joint ventures. With deep-rooted historical connections and aligned stances on global politics, these nations hold

31 Matthew G. Morris, *The Executive Role in Culturing Export Control Compliance*, MICHIGAN LAW REVIEW 104 (2006) 1785, 1802. <https://repository.law.umich.edu/cgi/viewcontent.cgi?article=1508&context=mlr>.

substantial prospects to delve into wider-ranging collaboration within the commercial aerospace sector while maintaining current alliances and knowledge-sharing.

4.4. More Participation in Multilateral Export Control Regimes

China's 2021 White Paper on Export Control demonstrates China's commitment to fostering international cooperation and exchange through bilateral and multilateral export control mechanisms. By strengthening its domestic legal system and supporting institutional frameworks for export control, China should actively engage in multilateral export control systems such as the MTCR, transitioning from a passive observer to an active participant, thereby enhancing transparency in its export control practices. This proactive approach will cultivate mutual trust and facilitate international collaboration with other nations during the process of commercial space internationalization. Through participation in bilateral or multilateral export control regimes within the aerospace industry, China can mutually benefit from member countries by exporting relevant space products and technologies, thus establishing a community dedicated to advancing the commercial space industry while promoting win-win outcomes.

Considering the perspective of a shared future, it is crucial for China to actively participate in multilateral export control regimes. Over recent years, China has experienced significant advancements in science and technology, particularly evident through the thriving commercial space industry. Being an influential nation engaged in space exploration activities, China consistently abides by peaceful principles and cooperative approaches while effectively meeting international non-proliferation responsibilities. By embracing the notion of cultivating a global community with intertwined destinies, proactive involvement from China within multilateral export control regimes will significantly contribute to maintaining non-proliferation commitments and ensuring international peace and security.

5. Conclusion

The commercialization of space has emerged as a prevailing trend in the aerospace industry, with numerous countries actively pursuing international cooperation to foster its global expansion. Major space-faring nations, including the United States, China, EU member states, and Russia, have strategically prioritized the development of their respective commercial space industries. Consequently, this strategic focus has led to the establishment of key multilateral export control mechanisms such as MTCR and W.A., which are direct outcomes of these national strategies. Moreover, certain countries and international organizations have also implemented their export control systems for aerospace-related technologies; notable examples include ITAR

and EAR in the United States as well as China's Export Control Law and the EU's export control system arrangements applicable to its member states. Faced with challenges and obstacles, China should prioritize autonomous innovation by referencing the restricted list of space-related imports and focusing on key technologies. Private capital and technology should be fully utilized while exploring cooperation mechanisms between the government and private enterprises in internationalizing commercial space activities. Additionally, issuing relevant guidelines along with integrating typical cases as macro guidance is crucial. Timely follow-up on draft amendments that combine national and international commercial space practices is necessary to effectively implement laws and regulations related to export control regimes. Attention should also be paid to improving compliance regimes for domestic enterprises before promoting them to align with international standards. Actively seeking international cooperation with partners such as the EU and Russia can help mitigate negative impacts resulting from US restrictions on China's commercial space industry. Finally, participation in multilateral export control regimes can drive constructive change while fulfilling non-proliferation obligations internationally, thereby establishing a transparent, mutually trusting, reciprocal bilateral or multilateral export control regime.