



High-level seminar on Space for development



**Enhancing the Role of ITU Member States
in the International Regulation of Limited
Resources - the Radio Frequency Spectrum
and Associated Satellite Orbits**

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Space law

Space law is a set of international principles and norms that regulate the legal regime of outer space, celestial bodies, as well as the rights and obligations of subjects of international law in the field of the use of outer space and space technology.



Sources of space law

- Universal international treaties.
- Multilateral and bilateral treaties and agreements.
- International custom.

Basic principles

- Freedom to explore and use outer space and celestial bodies.
- Prohibition of national appropriation.
- Use exclusively for peaceful purposes.
- International responsibility of States.
- Preventing the potentially harmful effects of experiments.
- Promoting international cooperation.

Subjects of space law

- *States* are the main subjects, since they are the ones who carry out most of the space activities.
- *International organizations* are secondary subjects of international law that can participate in space activities in accordance with the powers vested in them.
- *Legal entities and individuals* are involved in space activities, but international law places all responsibility for their activities on the respective states.

Main trends in the space industry

A multiple increase in the number of launches into space, resulting in an increase in satellites in orbit

Deployment in space of mega-constellations of satellite systems on non-GSO

Demand for satellite capacity is increasing

Government investment in space around the world has increased sharply over the past five years, at a compound annual growth rate (CAGR) of about 10%.

Mergers and acquisitions of the largest satellite operators and companies



The emergence of high throughput satellites (HTS) in GSO and NGSO

Direct-to-Device

Satellite operators using multi-orbital strategies when providing services

Laser Communications and the Rise of Orbital Data Centers

Space is no longer considered as a separate industry and is becoming the infrastructural basis for other sectors of the economy and state priorities



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Global Changes in the Satellite Industry - Mergers and Acquisitions



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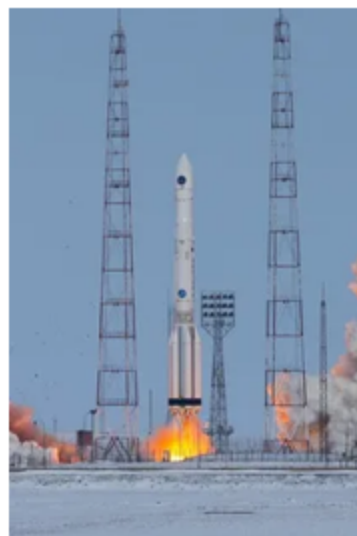
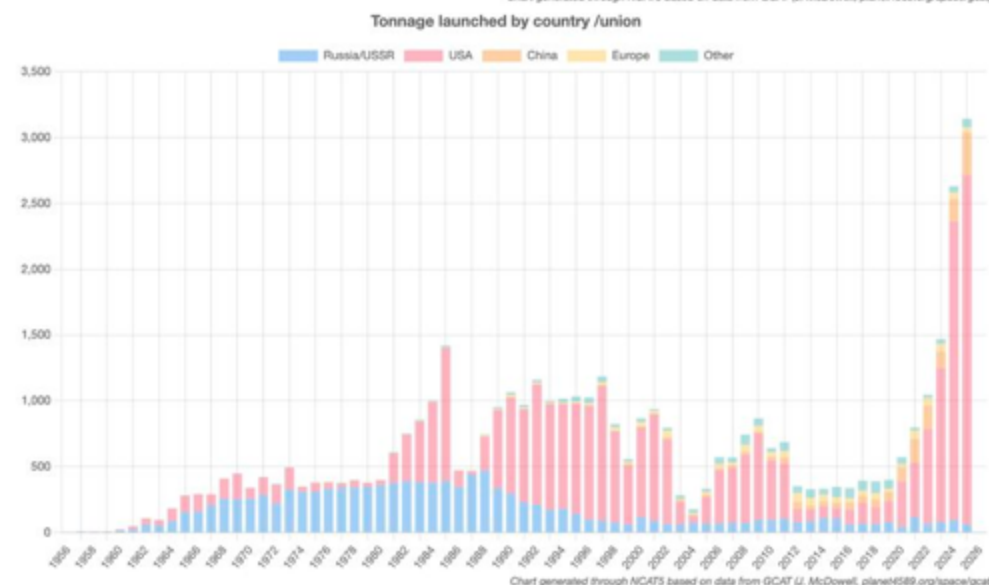
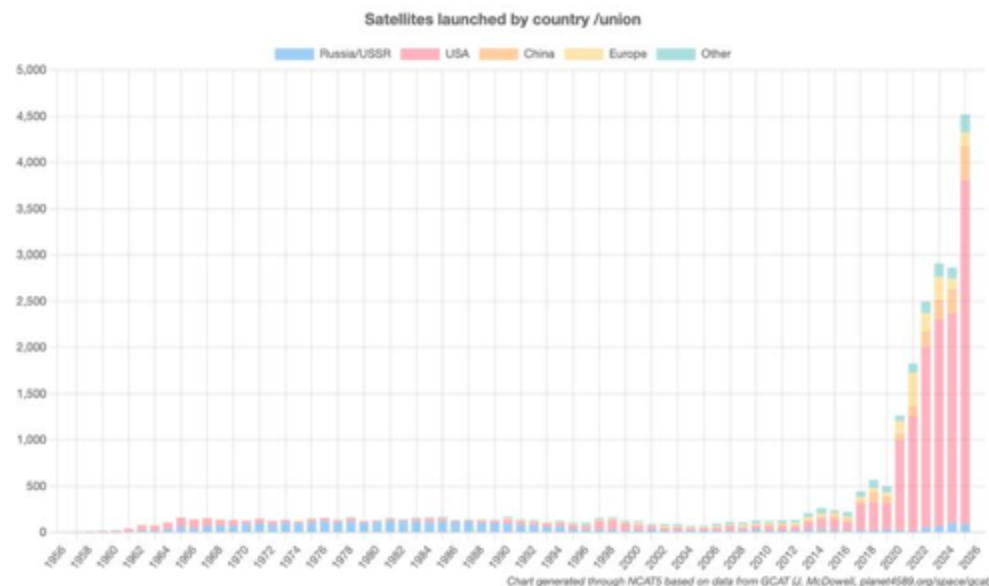
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Increasing the number of satellites launched into space



The year 2025 set a new record for space activity, both in terms of the number of satellites launched and the total mass sent into orbit.

In 2025, the United States launched an unprecedented number of satellites - more than 3700 in total - putting more than 2600 tons of mass into orbit. SpaceX has played a central role in it.

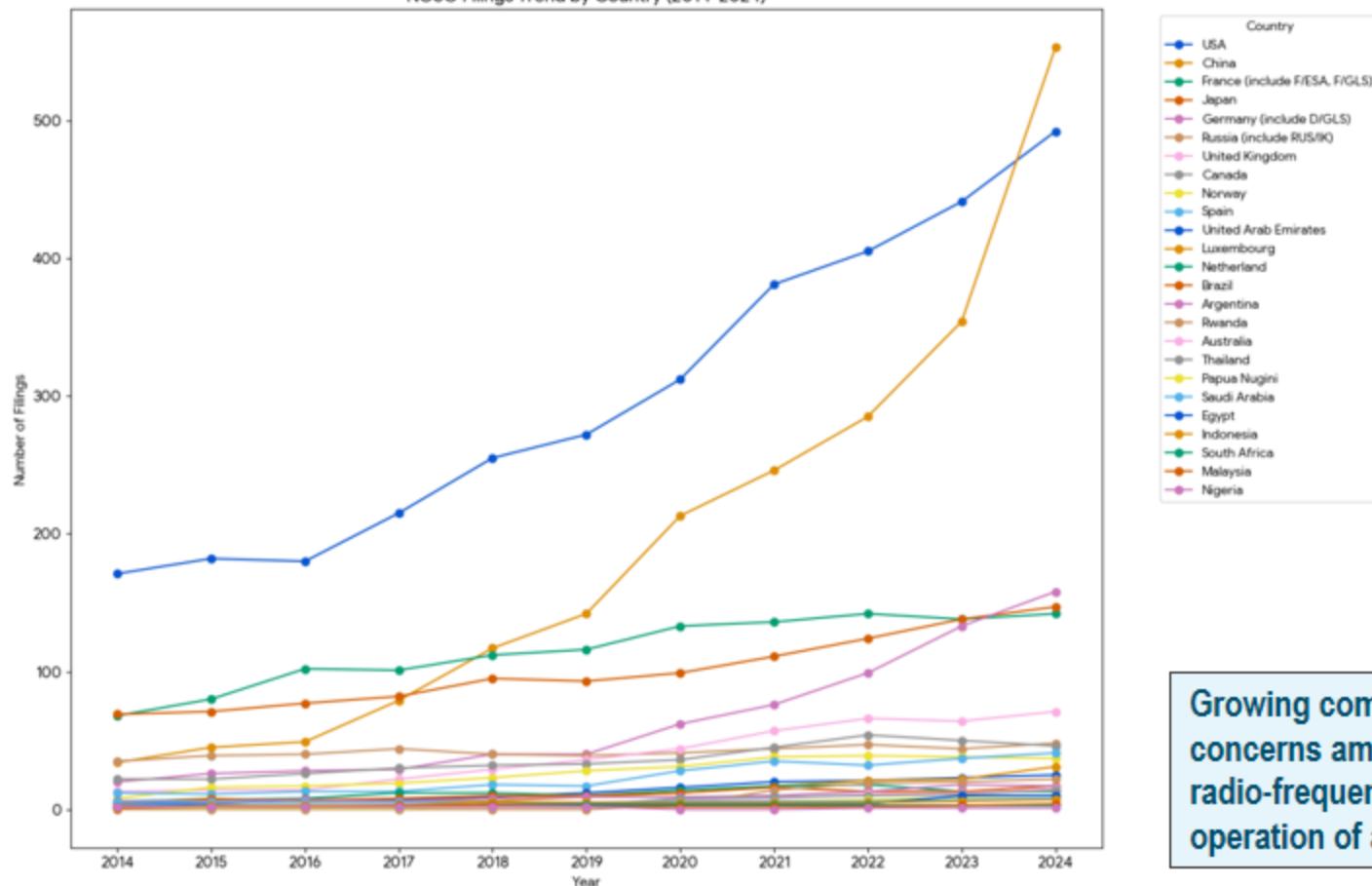
China is also gradually expanding its presence in space, surpassing the EU's activity (in terms of the number of satellites launched) for the second year in a row.

China set a national record by launching 371 satellites in 2025 and sending 325 tons of mass into orbit.

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Increasing the number filling of frequency assignments of NGSO systems in ITU

NGSO Filings Trend by Country (2014-2024)



N	Administration	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1	USA	171	182	180	215	255	272	312	381	405	441	492
2	China	34	45	49	79	117	142	213	246	285	354	553
3	France (include F/ESA, F/GLS)	68	80	102	101	112	116	133	136	142	138	142
4	Japan	69	71	77	82	95	93	99	111	124	138	147
5	Germany (include D/GLS)	20	26	28	29	40	40	62	76	99	133	158
6	Russia (include RUS/IK)	35	39	40	44	40	39	41	44	47	44	48
7	United Kingdom	13	14	14	22	29	36	44	57	66	64	71
8	Canada	22	22	26	30	32	33	36	45	54	50	46
9	Norway	8	16	17	19	23	28	31	38	39	38	37
10	Spain	12	11	13	13	18	17	28	35	32	37	41
11	United Arab Emirates	4	4	7	7	9	12	16	20	21	23	25
12	Luxembourg	5	8	6	6	6	9	12	17	21	22	31
13	Netherland	6	7	8	12	12	10	14	17	18	13	13

Growing competition for Internet access using non-GSO systems has raised concerns among developing countries about their future need for access to the radio-frequency spectrum, a "limited natural resource" in Earth orbits critical to the operation of all satellite systems.

The radio-frequency spectrum is regulated internationally by the Radiocommunication Sector of the International Telecommunication Union, a specialized agency of the United Nations

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Notifying administrations

Over the past ten years, the global space sector has experienced unprecedented growth. While state space agencies were previously the main players, the market is now dominated by large commercial operators of satellite constellations. The massive launch of thousands of satellites into NGSO, the high overload of the GSO, and the rapidly growing demand for radio-frequency spectrum have significantly increased the importance of international regulation.



Despite the commercialization of the industry, states remain the only subjects of international law authorized to interact with the ITU on matters of orbit-frequency resource allocation. This has led to an objective strengthening of the role of states as regulators of access to limited natural resources in outer space.

The satellite communications market is characterized by mergers and acquisitions involving major operators and operators with satellite constellations in different orbits. Such consolidation often occurs through operators whose satellite network frequency assignments were notified by different administrations.

In some cases frequency assignments used by a particular NGSO satellite system are notified to the BR ITU and recorded in the Master International Frequency Register by different Administrations.

The uncertainty regarding the specific notifying administration creates legal and regulatory issues for which there are no clear answers in the ITU core documents (Constitution and Convention), the Radio Regulations or the Rules of Procedure.



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States hold the rights to the use of orbit-frequency resources



International Legal Framework for the Regulation of the Radio-Frequency Spectrum and Associated Satellite Orbits

The international legal system for the use of the radio-frequency spectrum and associated satellite orbits is based on several interrelated international instruments:

- ITU Constitution;
- ITU Convention;
- Radio Regulations;
- 1967 Outer Space Treaty;
- 1972 Convention on International Liability for Damage Caused by Space Objects.

States as the Sole Entities Interacting with the ITU

One of the key features of the ITU system is the absence of direct interaction between commercial operators and the Union. Filings with the ITU are submitted exclusively by national administrations. Even if a satellite system belongs to a private company, the official applicant is always the State.

Consequently:

- the state registers the satellite network;
- conducts international coordination;
- represents the interests of the national operator;
- holds international responsibility for compliance with the Radio Regulations.

Licensing of Operators by States

The ITU does not issue licenses to commercial companies. This authority rests entirely with national Administrations.

Each State independently determines:

- licensing conditions;
- requirements for operators;
- procedures for the use of orbits;
- measures of state control.

In accordance with No. 37 of Article 6 of the ITU Constitution, all members are bound to abide by the Constitution, the Convention and the Administrative Regulations in all telecommunication offices and stations established or operated by them which are capable of causing harmful interference to the radio services of other countries.

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International Responsibility of States



Even if a satellite belongs to a private company, responsibility to the international community lies with the State.

This follows from:

- The Outer Space Treaty;
- ITU instruments;
- the practice of satellite network registration.

The State is responsible for:

- prevention of harmful interference;
- fulfillment of coordination procedures;
- compliance with deadlines for bringing satellites into use;
- fulfillment of obligations to other Administrations.

The Administration is responsible for fulfilling the obligations under the ITU Constitution, the ITU Convention and the Administrative Regulations.

1. Responsible Administration shall be designated for each satellite network or system using frequency assignments notified to the ITU by different administrations
2. The enhanced role of ITU Member States in the regulation of satellite orbits is a natural consequence of the growth of commercial space activities and the scarcity of orbit-frequency resources



Thank you for your attention !

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