National Space Programmes Activity Overview 2021 / Q2

May 2021

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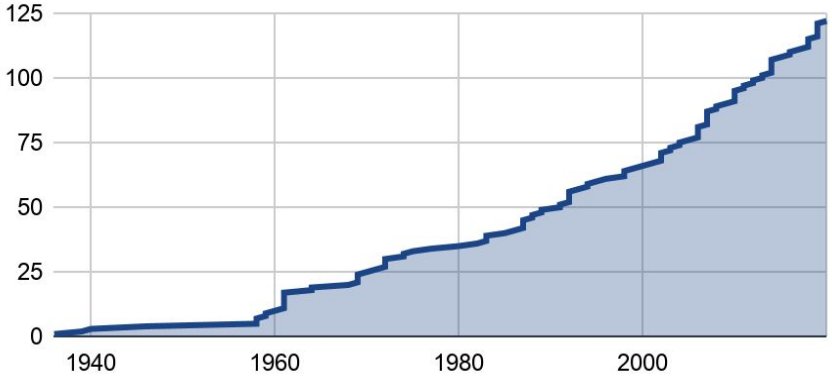
SpaceTech Analytics

Introduction

Since the very beginning of The Space Race back in 1957 different countries all over the world have been developing their space technologies with a massive effort. At first it was only USA and USSR, but then Europe and China joined with more than 120 governmental space agencies. There are also a number of space agencies, that are expected to be established in the following years. The development of the governmental agencies has accelerated during last 10 years, f.e. UAESA ran by United Arab Emirates was only formed in 2014, but has already sent a probe to Mars.

Governmental agencies have always been the ones to exclusively run manned and unmanned flights. At first it was about launching satellites into orbit and probes to other planets, but today we already have a set of rovers on Mars, a giant space station built with the cooperation of many different countries and the telescopes that have left Solar system and could look into the past of our galaxy. Much more is yet to come. Some agencies have concentrated on implementing high-precision Earth observation satellites, that will help with monitoring the conditions on the planet. Others are building the telescopes that will answer a broad variety of big questions about physics and space.

Number of Governmental Space Agencies Timeline



SpaceTech Landscape Framework

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Science and R&D

- Astronomy & Astrophysics
- Earth Science
- Astronautics
- Space Medicine
- Space Architecture
- Astrobiology

Frontier Technologies

- Engineering
- Robotics
- Software
- BIoTech
- Artificial Intelligence
- Machine Learning

Spacefaring

- Private Spaceflight
- Logistics
- Space Tourism
- Transportation

Satellites & Aerial Imagery

- Satellite Communication
- Satellite Manufacture
- Aerial Imagery
- Navigation
- Data Gathering
- Weather Forecasting

Spacecraft Construction

- Manufacture
- Repair
- Materials & Part Production
- Launch Infrastructure

Supporting Industries

- Training
- Consulting
- Research & Education
- HR

SpaceTech Industry Framework

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Stakeholders Groups

- Civil Society
- Scientists & SpaceTech Professionals
- Influencers & Media
- Investors & Founders
- Government Agencies
- Military & Defence

Market

- Space Exploration
- Spaceflight
- Space Medicine
- Security & Defense
- Satellites
- Data Gathering

Use Cases

- Science and R&D
- Tourism
- Spacecraft
- Military
- Healthcare
- Artificial Intelligence

Opportunities & Concerns

- Extraterrestrial Life
- Alternative Energy
- Internet Access All Around The World
- Mining In Space
- Militarization Of Space
- Moon As An Interplanetary Hub

SpaceTech Sector Classification Types

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By Type of Agency

- Civil
- Military
- Private
- International Collaborations

By Level of Development

- In Theory
- Testing
- Developed
- Advanced

Space Economy Sectors

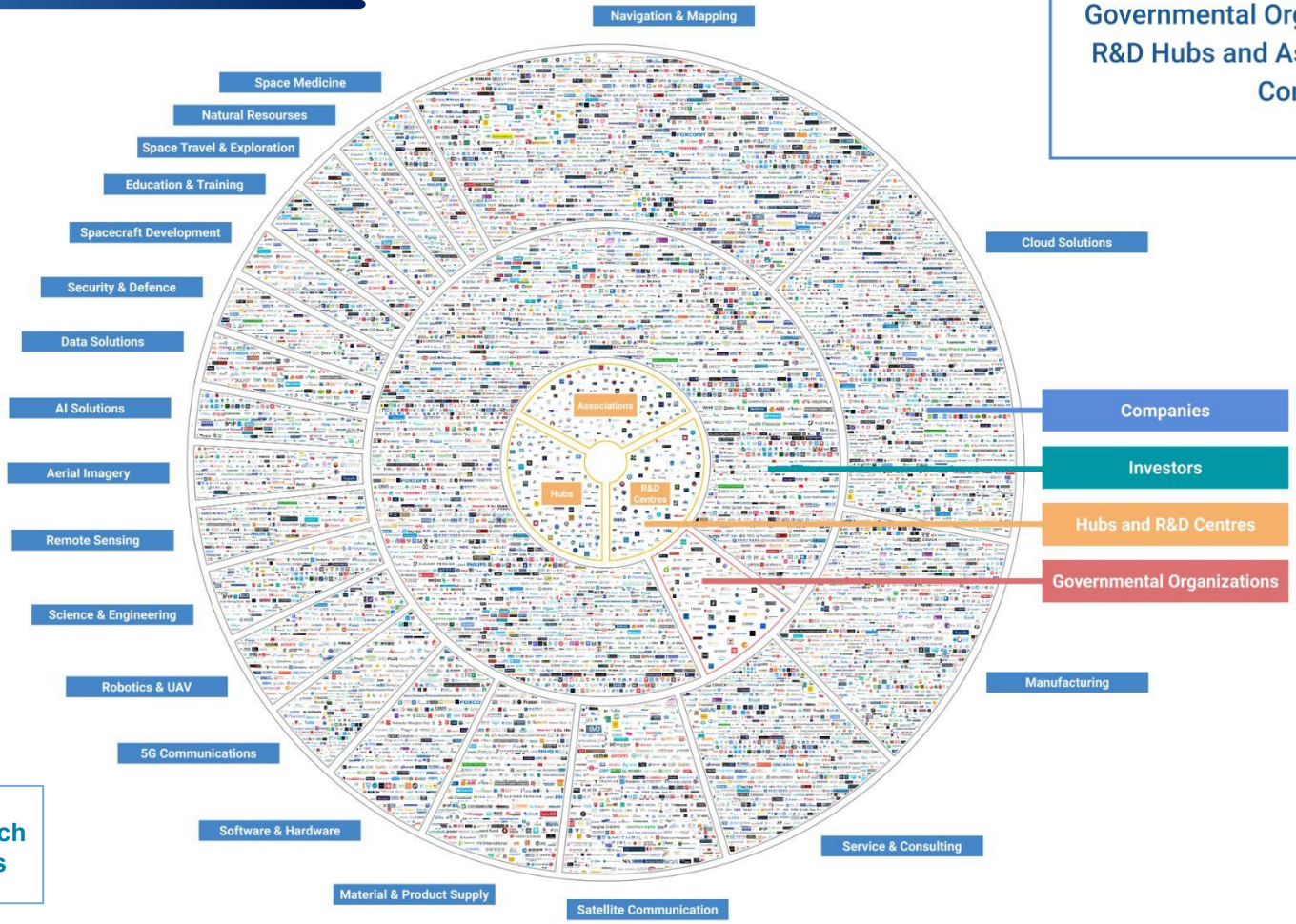
- Downstream
- Upstream
- Spinoff

By Area of Operation

- Outer Space
- Medium Earth Orbit
- Low Earth Orbit

Global SpaceTech Ecosystem 2021

Governmental Organizations - 130
R&D Hubs and Associations - 150
Companies - 10 000
Investors - 5 000



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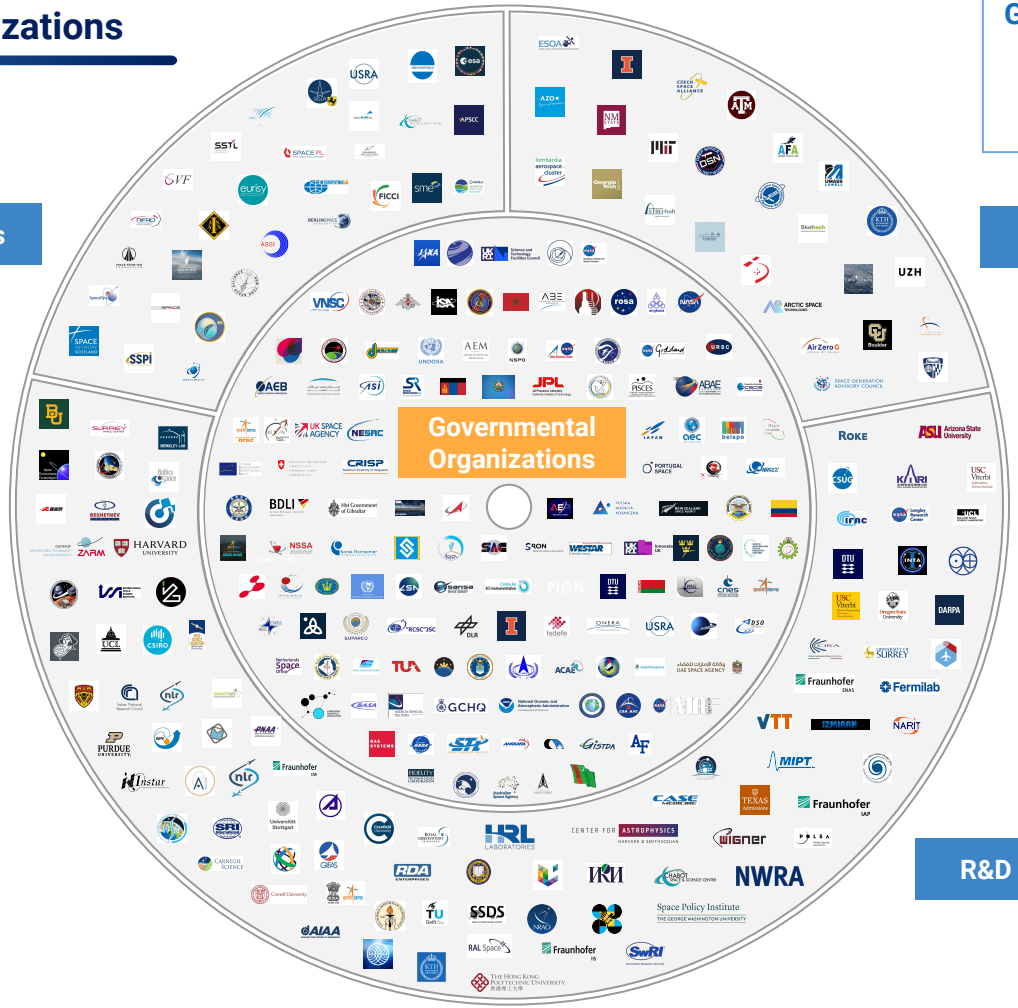
R&D Hubs, Associations and Governmental Organizations

Governmental Organizations - 130
R&D Centres - 93
Associations - 29
Hubs - 28



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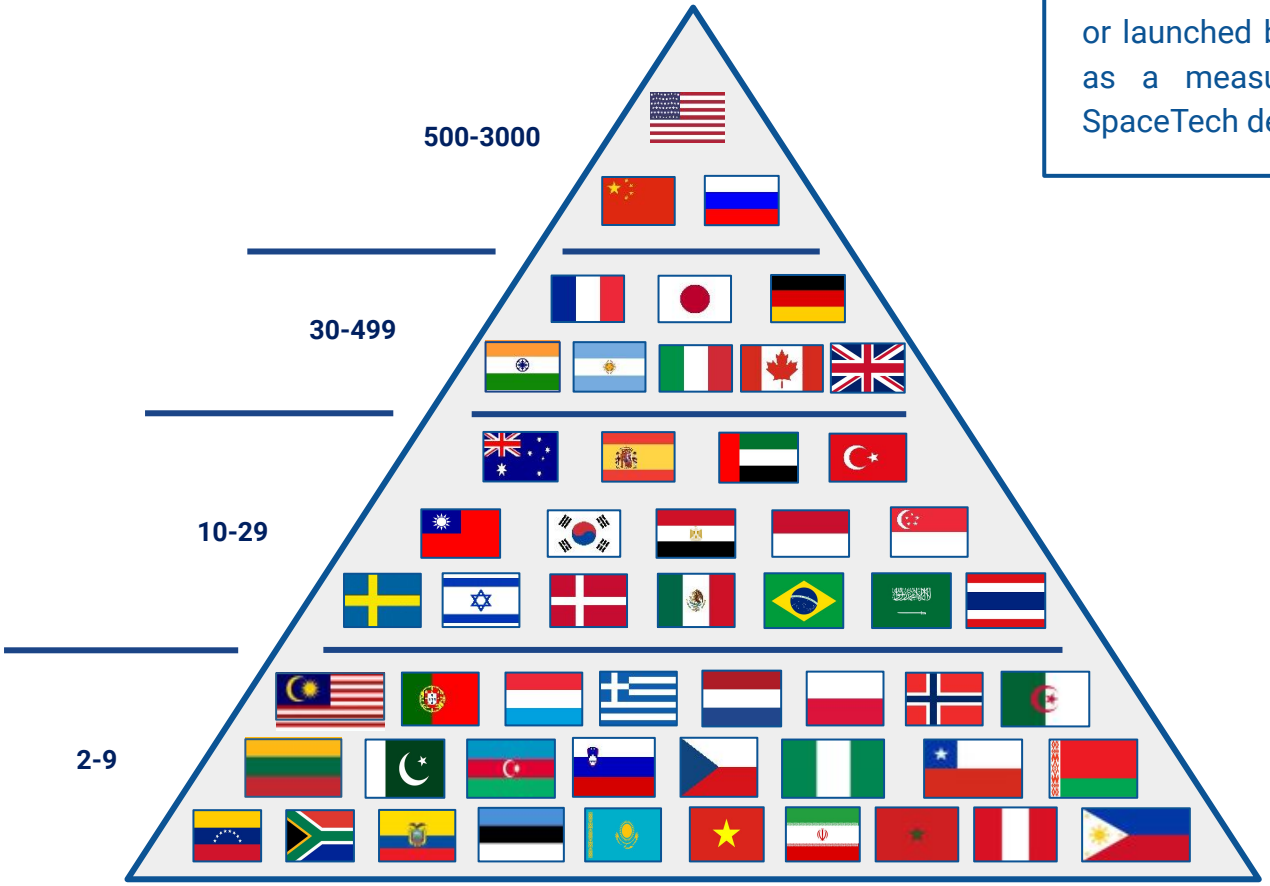
Number of Satellites by Country

Number of satellites either owned or launched by country used here as a measure of approximate SpaceTech development



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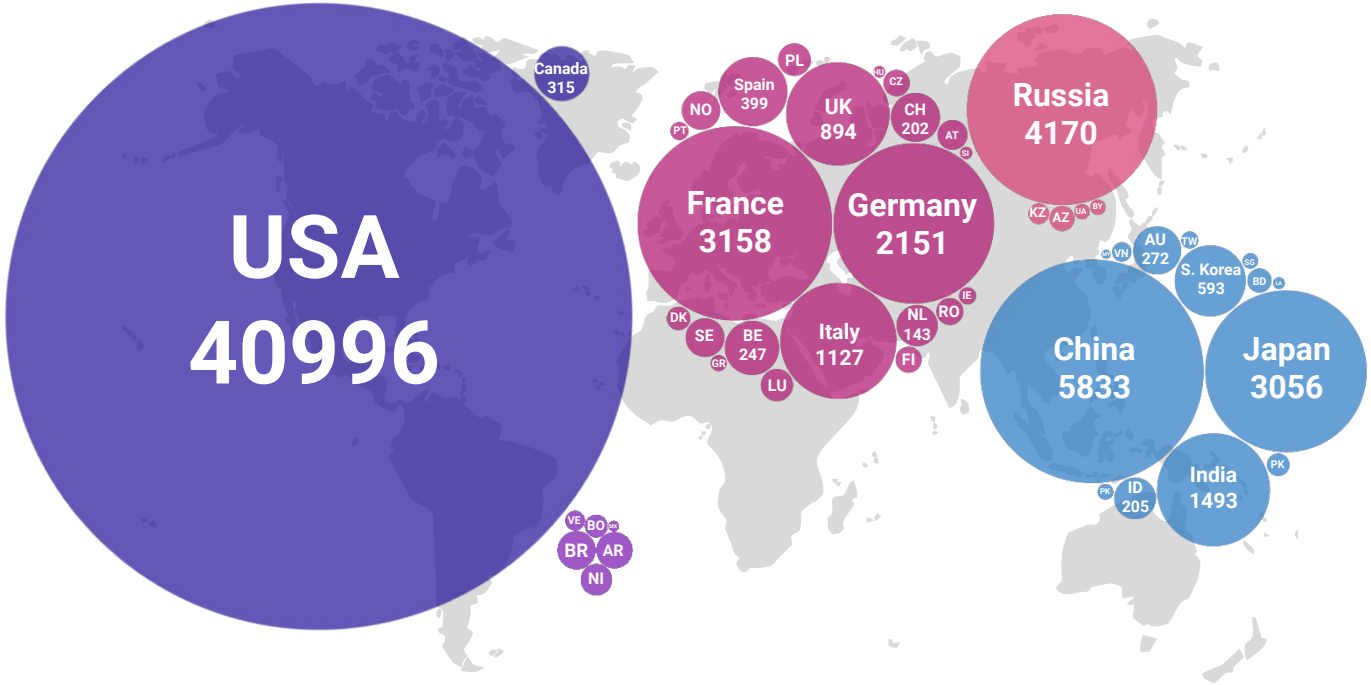
Government Space Budgets in Billions of USD

	Government space budgets	Number of space companies	Presence of missions to Mars	Number of missions to Mars	Space national programme	Participation in the international programmes of European Space Agency	Number of government space agencies
USA	40,996	1741	+	15	+	-	22
China	5,833	147	+	2	+	-	3
France	3,158	170	-	-	+	+	2
Russia	4,170	8	+	3	+	-	2
Japan	3,056	72	+	1	+	-	1
Europe	2,115	1768	+	4	+	-	-
Germany	2,151	158	-	-	+	+	2
India	1,493	110	+	1	+	-	10
Italy	1,127	56	-	-	+	+	1
UK	894	99	+	1	+/-	+	9
South Korea	593	17	-	-	+	0	-
Spain	399	103	-	-	-	+	1
Canada	315	125	-	-	+	-	2
UAE	383	28	+	1	+	-	2
Australia	272	66	-	-	+	-	2

+ - Yes; **-** - No; **+/-** - Partial

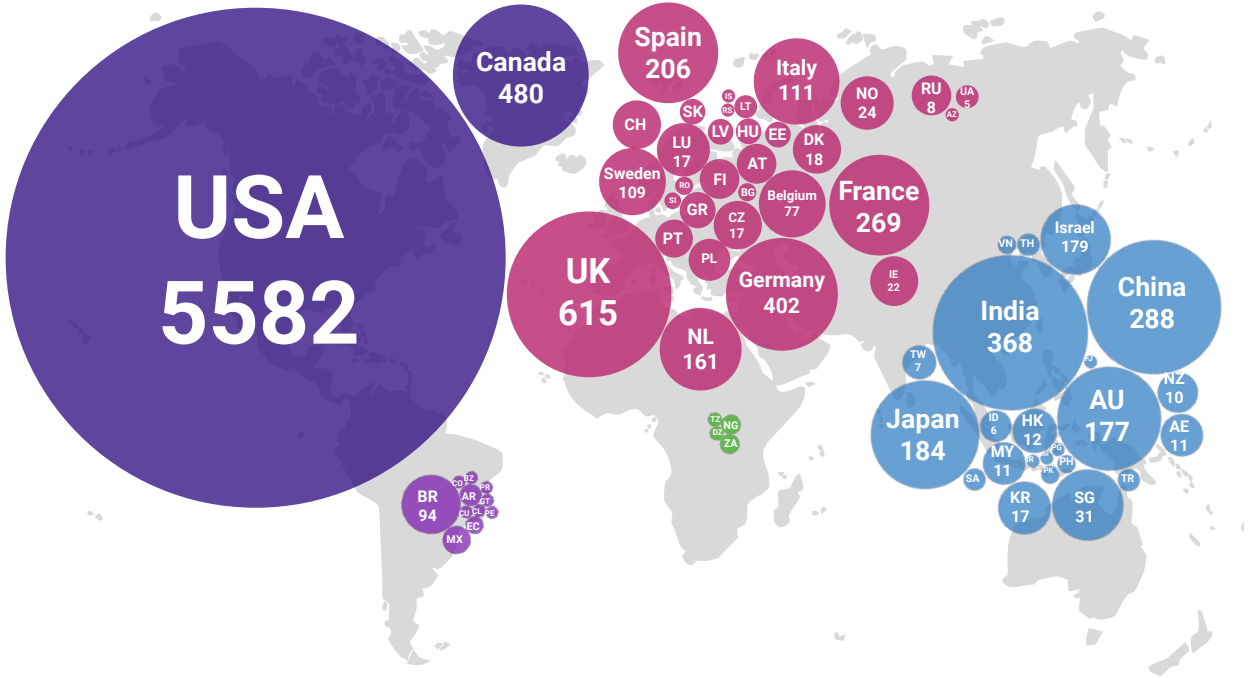
Government Space Budgets in $, Millions



The United States spends more on space than all other countries combined. Its space exploration budget exceeds those of China, Russia, France, Japan, and Germany by wide margin. In 2018, of $70.9 billion government space investments, 63% were spent on civil programs, as military budgets tend to fluctuate on lengthier budget cycles. World space budgets are projected to continue their growth trend in the medium term, peaking at an estimated $84.6B by 2025, before downcycling.

Sources: Euroconsult

Number of SpaceTech Companies by Country



More than half of the companies analyzed in the report are US-based. However, the geographical distribution of SpaceTech companies is wider and more diverse than that of government-funded space exploration programmes. Interestingly, even countries whose space exploration budgets are relatively small have SpaceTech companies.

Countries with the Most Advanced Space Programmes: United States of America

The USA

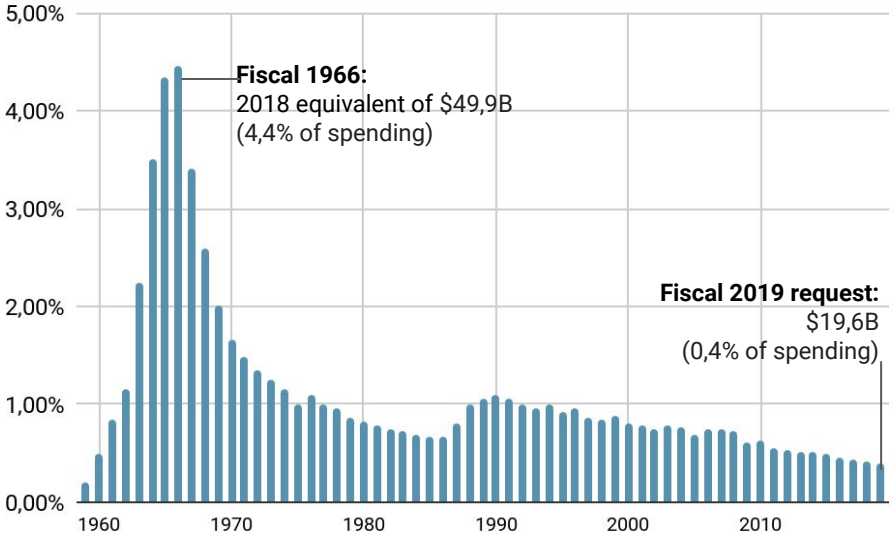
Since the retirement of its space shuttle program in 2011, the United States had depended on Russia's Soyuz spacecraft to get its astronauts to the International Space Station. That changed on May 30, 2020, with the launch of SpaceX Crew Dragon spacecraft. This is a clear demonstration of NASA's plans to cooperate with viable commercial alternatives; however, it doesn't mean that further cooperation with other countries, including Russia, will no longer be an option.

Relationships with China

Complicated as they are, they tend to be particularly tricky when it comes to cooperation in space. American legislation, namely the Wolf Amendment of 2011, prevents the White House and NASA from engaging in space-related cooperation with China without prior sign-off from the FBI. Though it does not stop the two countries from having strategic space dialogue, it still is a major obstacle to US-China cooperation in space. In June 2020, the Defense Department released its **four-pillar strategy** outlining work to be done in space in the next decade and beyond. According to it, the country's main efforts will be invested in:

- Building a comprehensive military advantage in space;
- Integrating space in the joint force together with allies and partners;
- Shaping a strategic environment;
- Working with allies, partners, industry partners, and other U.S. agencies.

NASA's Share of Federal Spending



Sources: [World Politics Review](), [U.S. Dept of Defence]()

Countries with the Most Advanced Space Programmes: United States of America

The Juno Mission

Launched in 2011, the Juno mission is expected to continue until September 2025 or the end of its life, whichever comes first. The Juno spacecraft has already made discoveries about:

- Jupiter's interior structure,
- magnetic field, and magnetosphere
- have found its atmospheric dynamics to be far more complex than scientists previously thought.

Juno will further continue to observe both the gas giant and the planet's rings and its moons, including "close flybys" of Ganymede, Europa, and Io.

The InSight Mission

It is extended for two years, running through December 2022. InSight's spacecraft deployed its highly sensitive seismometer to expand the understanding of Mars' crust and mantle. The mission team collected data demonstrating the robust tectonic activity of Mars.

- In April 2019, the InSight lander recorded the first-ever "Mars quake."
- In September 2019, the InSight lander detected bizarre bursts of magnetic pulses on Mars.

Two main NASA missions: Mars and Jupiter exploration

Citing discoveries that have "produced exceptional science," NASA has decided to add several years to two of its planetary science missions: the Jupiter Juno mission and the Mars InSight lander.

"The Senior Review has validated that these two planetary science missions are likely to continue to bring new discoveries, and produce new questions about our solar system," said Lori Glaze, director of the planetary science division at NASA Headquarters in Washington.

Sources: JPL, Fox News

Countries with the Most Advanced Space Programmes: China

China

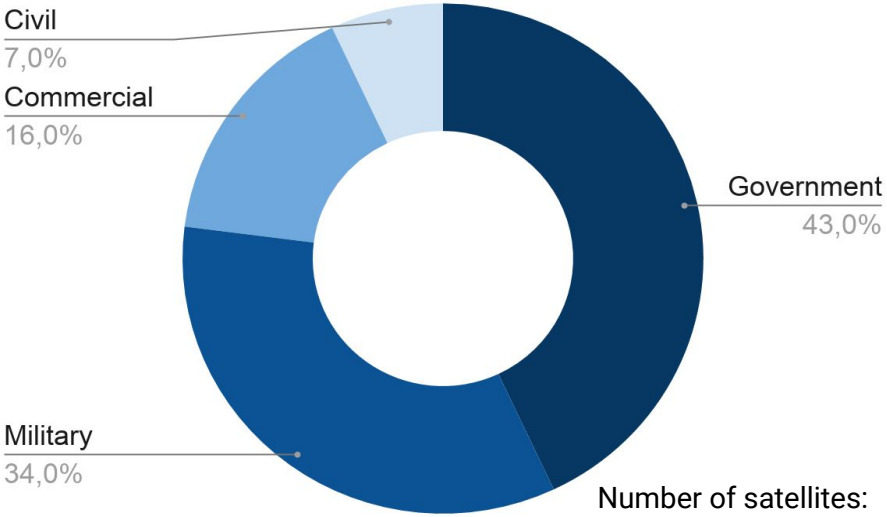
After becoming the third country to launch a human into space in 2003, China has been steadily expanding its space program. One of its major accomplishment was when Chang'e 5 lunar probe successfully landed on the Moon on December 1, 2020. The landing brought Beijing a step closer to becoming the third country in the world to retrieve geological samples from the Moon. While reaching the Moon remains a significant accomplishment for any space program, Beijing's space program is still in its early stages.

"They're catching up to where the United States was in the 1960s,"

said Todd Harrison, director of defense budget analysis and space security at the Center for Strategic and International Studies, a Washington think tank. "The United States has already sent not just probes to the moon but humans and returned to the Earth and brought back samples of lunar rocks. So China is catching up in that respect, but they're still not where the United States is in terms of space technology. But it is nevertheless a competition for science."

Xi Jinping aspires to achieve an authoritarian-led space order with economic generosity and a carefully constructed narrative of "benefiting humankind." Lurking behind that feel-good narrative, however, is a highly nationalistic and ambitious space program that aspires to establish China as the leading nation in space innovation by 2049.

Total Satellite Launches in China
till 31.03.19



Number of satellites:
Launches in 2020: **39**

Sources: VOA, The Diplomat

Countries with the Most Advanced Space Programmes: China

Tiangong Space Station

One the most ambitious China's projects is Tiangong Space Station. Tiangong is the successor to China's Tiangong-1 and Tiangong-2 space laboratories, which were deorbited in 2016 and 2019 respectively. Station shall be completed until the end of 2022 and will consist of a core module Tianhe and two laboratory modules Wentian and Mengtian. It will be capable of docking two more spacecrafts: one manned and another cargo. It will be able to accommodate three astronauts in normal circumstances.

Tianhe core module will be used as a command center and living space, while lab modules will be equipped with special facilities for conducting scientific and technological experiments. One of them is also equipped with a special airlock chamber to support extravehicular activities and a small mechanical arm, while the other one is equipped with a special airlock chamber to support the entry and exit of cargo.

On 29 April 2021 Tianhe Core Module was launched into orbit with The Long March-5B rocket. It was successfully brought to orbit at an altitude from 340 km to 450 and in an hour and 13 minutes after launch, its solar panels started operating and the module powered up. However, the launch vehicle started tumbling during deorbiting and entered a temporary, uncontrolled failing orbit. The main concern was that the trajectory of the vehicle was unpredictable, so it could cause serious damage during re-entry, but eventually it ended up falling onto the Indian ocean

Countries with the Most Advanced Space Programmes: Russia

The Russian Federation

Russia is renowned for having sent the first man into space and launching the first satellite as a part of USSR. However, it has recently experienced a series of major setbacks, resulting in the loss of expensive spacecraft and satellites. Only a decade ago Russia was the world's leader in terms of the number of space launches; however, that is no longer the case today. Due to competition from China and SpaceX, Russia has lost its long-held monopoly as the only country capable of ferrying astronauts to the International Space Station.

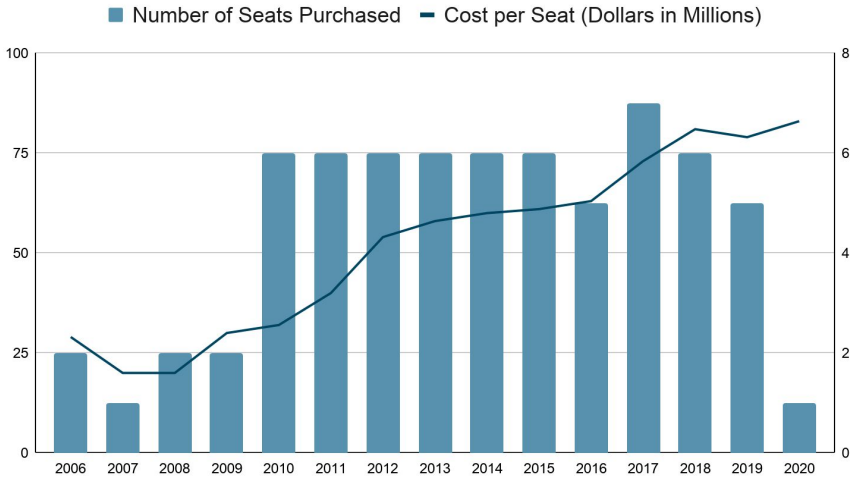
Today, Russia's priorities in space are far more 'down to earth' than those of the USSR.

Starting from 2014, Russia has focused its efforts on massive reorganization and consolidation of its space industry under Roscosmos, a state-owned corporation since 2015.

In September 2020, Roscosmos declared Venus a "Russian planet" and announced its intention to send a mission to the Moon, which will be independent from the one planned with the US.

Roscosmos also plans to send tourists to the ISS by 2023. In addition to the Luna 27 project, Dmitry Rogozin, the Space Agency's Director General, announced Russia's lunar programme. According to it, Russia plans to send its first astronaut to the Moon in 2030.

NASA's Payments to Russia for Sending Their Astronauts into Space, per seat



Sources: *The Moscow Times*, *Space News*, *Global Risk Insights*

Countries with the Most Advanced Space Programmes: Japan

Japan

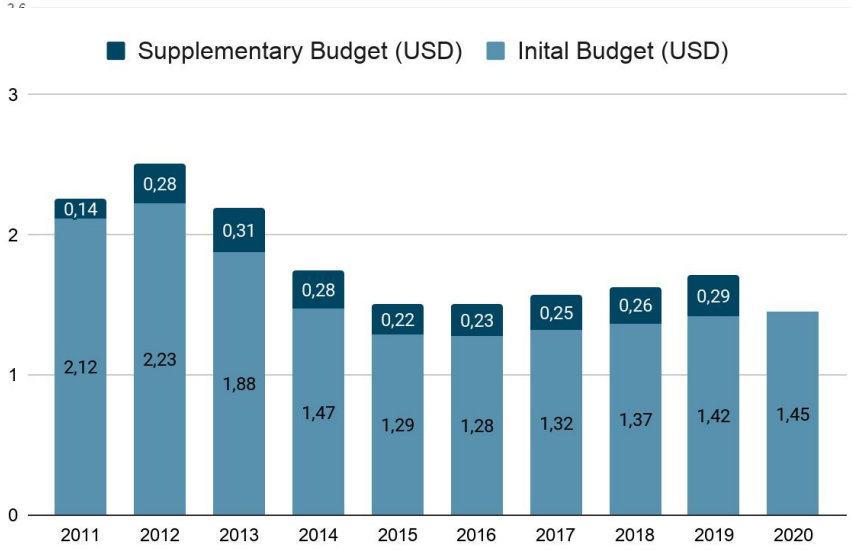
Over the past several decades, Japan has emerged as a leading space-faring nation. Unlike other major players, such as the United States, China, and Russia, Japan has achieved its status while remaining committed to “peaceful uses of outer space” as per the Outer Space Treaty (OST) of 1967. To emerge as a key space-faring nation, Japan relied heavily on its niche strength in robotics. In 2013, Japan became the first country to launch a robotic astronaut, Kirobo, to the International Space Station (ISS).

Japan is focused on finding innovative solutions to tackle the threat of space debris.

The use of robotics in space missions has extended to the arena of deep space exploration, as well through the much-acclaimed Hayabusa missions. In 2003, they have launched the Hayabusa spacecraft, which entered the history books as the first mission to return asteroid dust to Earth. Later on, JAXA has tested the concept of an electrodynamic tether that would catch space debris and float it down to the Low Earth Orbit (LEO). They would work on developing wooden materials highly resistant to temperature changes and sunlight. By 2023, Japan plans to launch the world's first satellite made out of wood.

Wooden satellites would burn up without releasing harmful substances into the atmosphere or raining debris on the ground when they plunge back to Earth.

Annual Budget of the Japan Aerospace Exploration Agency (JAXA), from Fiscal Year 2011 to 2020 (in billion USD)



Sources: *The Diplomat*, *BBC News*

Countries with the Most Advanced Space Programmes: United Arab Emirates

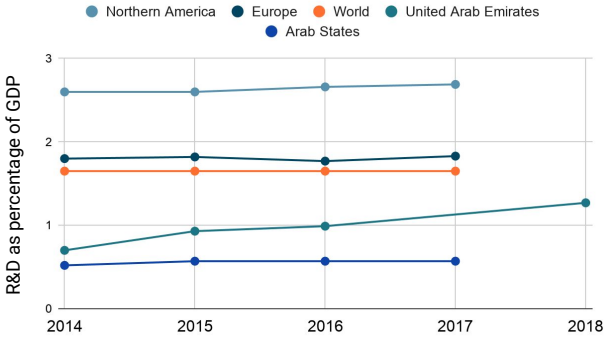
The UAE

The UAE's Space Agency doesn't have a long history; however, it isn't exactly its history that makes it an interesting case study. Established in 2014, it has already scored some major successes, with the most notable one being a mission to Mars. After a seven-month and 494 million kilometre journey, the Agency's spacecraft entered the red planet's orbit in February 2021 and began sending data about the **Martian atmosphere** and **climate**. It made the UAE the fifth space agency to reach the planet. According to the Agency, it has plans for establishing a **Mars settlement by 2117.**

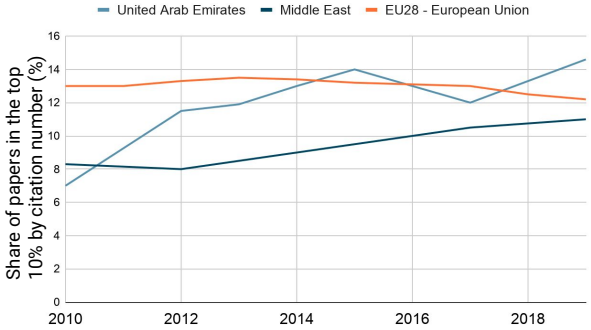
The Mars Programme

The programme is part of the UAE's ongoing effort to develop its scientific and technological capabilities and reduce its reliance on oil. Hence, for Emiratis, space-science goals come second. Faced with economic and environmental challenges, the small, oil-rich Gulf state hopes the Mars project can accelerate its transformation into a knowledge economy — by encouraging research, degree programmes in basic sciences and inspiring the youth across the Arab states. Like major port and road ventures before it, the Mars mission is a mega-project designed to cause "a big shift in the mindset".

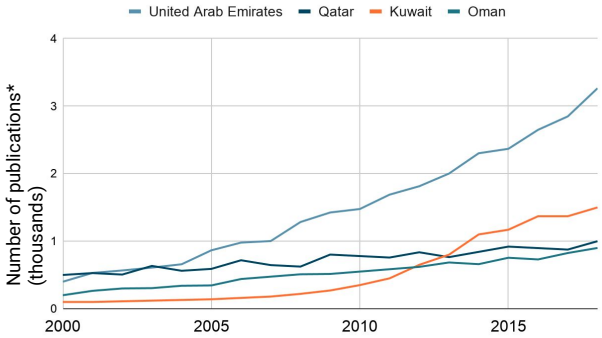
Spending



Publication Impact



Research Output



* For co-authorized publications, a fraction of each paper is assigned to a country depending on its share of authors

Sources: Aljazeera, Nature

Countries with the Most Advanced Space Programmes: India

India

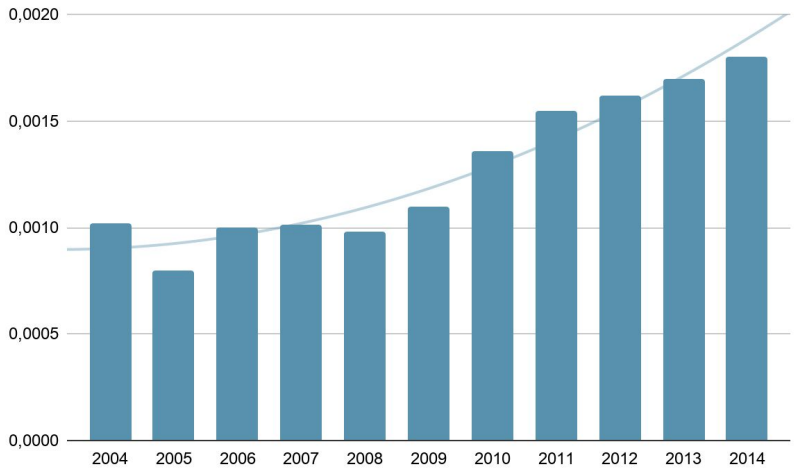
India's space program has grown and evolved significantly in the past five decades. Originally developing space assets that provided direct developmental benefits, India has shifted its focus toward space exploration and other high-profile missions that do not have as clear a developmental purpose as earlier. This includes, for example, India's Mars and Moon exploratory missions.

The next major step for India is a first crewed space mission, Gaganyaan, to be undertaken by 2022.

India's already robust program has also acquired national security overtones over the last decade. This is partly driven by India's growing technological capacity. But an important part of the reason for this change is the evolving security threats that India has faced, especially in relation with Pakistan and China.
This decade ISRO (Indian Space Research Organisation) has made public its intention to develop reusable rocket-launch technology and start building reusable rockets in the following decade. Meanwhile, in a "New Year Message for 2021," ISRO Chairman K. Sivan highlighted that "space sector is facing disruption due to the entry of many private players".

18 ISRO centers aim to scale up capabilities related to ground stations, human spaceflight, satellite platforms and more. The Vikram Sarabhai Space Center, in particular, was directed to continue its "competence in launch-vehicle development toward heavy-lift capabilities, achieving partial and full reusability" and scramjet engine (supersonic-combustion ramjet, a type of supersonic engine) research.

Space Expenditure as Percentage of Indian GDP



Sources: ORF, SPACE

Countries with the Most Advanced Space Programmes: European Space Agency (ESA)

The European Space Agency (ESA)

The European Space Agency is the coordinating entity for European civilian space activities. Having 22 member states, it's headquartered in Paris and has several centers in other European countries. It mainly focuses on:

Combating El Nino (a weather phenomenon responsible for some of the world's most drastic and devastating disasters) and monitoring particular aspects of the environment;

Observing environmentally unfriendly factors (air pollution from transportation, power stations and industrial processes) on a daily basis, using ERS satellites, and building up a database from which one can learn and act upon;

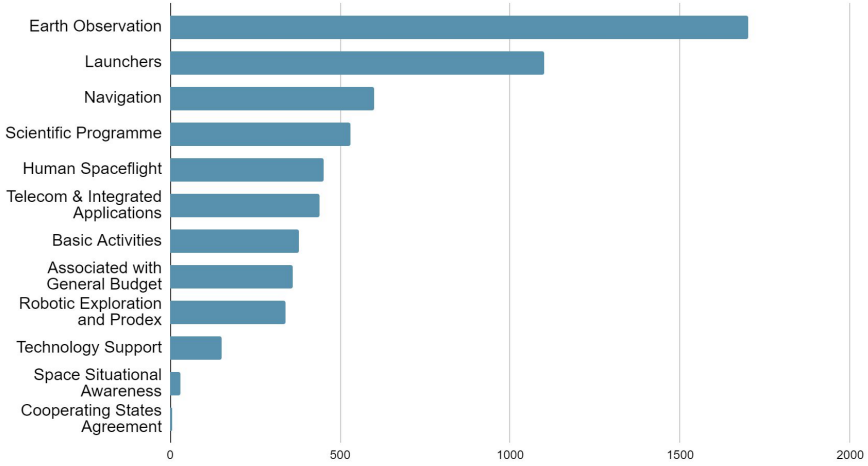
Monitoring ozone levels;

Observing polar ice caps;

Preventing the devastation that oil pollution can bring to coastal, sea and marine environments;

Its mission is to shape the development of Europe's space capability and ensure that investment in space continues to deliver benefits to the citizens of Europe and the world. The ESA's purpose shall be to promote exclusively peaceful space exploration, cooperation among European States in space research and technology, as well as their space applications, with a view of using them for scientific purposes and operational space applications systems.

Distribution of the ESA's budget (In Millions of Euro)



Sources: Space, ESA, ESA

Countries with the Most Advanced Space Programmes: European Space Agency (ESA)

By 2030 ESA is going to implement the following visions:

ESA's space weather vision

- Development a European space weather monitoring system;
- Enhancing Coordination Centre's ability to provide warnings and tailored space-weather information;
- Continuing analysing the sensitivity of European infrastructure to space-weather effects;
- Increasing space weather hazard awareness in Europe;
- Developing and testing emergency protocols with European civil authorities to improve resiliency to space weather events.

ESA's vision of planetary defence

- Rendezvous with a binary asteroid system – a little-understood class making up around 15% of all known asteroids;
- Scanning the skies for rogue rocks with Flyeye telescopes, automatically flagging any that could pose an impact risk and bringing them to the attention of human researchers;
- Deploying a new in-space satellite to detect asteroids coming from the direction of the Sun;
- ESA's Near-Earth Object Coordination Centre will continue to be the central access point to a network of European asteroid data sources and information providers.

ESA's response to space debris

- Enabling the safe operation of individual satellites and large constellations by developing and demonstrating an Automated Collision Avoidance System, free from causing damage;
- Supporting the monitoring and safe management of space traffic and the application and verification of the necessary debris mitigation measures according to internationally agreed guidelines, standards and best practices;
- Assessing, modeling and mitigating the risks associated with space debris and reentries.

Source: ESA

International Space Station

The International Space Station (ISS) is a modular space station (habitable artificial satellite) in low Earth orbit. It is a multinational collaborative project involving five participating space agencies: NASA (United States), Roscosmos (Russia), JAXA (Japan), ESA (Europe), and CSA (Canada). The ownership and use of the space station is established by intergovernmental treaties and agreements.

Orbit altitude: 408 km
Orbital speed: 7.66 km / s
Launch date: 20 Nov 1998
Launch weight: 419 700 kg
Cost: $150 billion

Purpose

The ISS was originally intended to be a laboratory, observatory, and factory while providing transportation, maintenance, and a low Earth orbit staging base for possible future missions to the Moon, Mars, and asteroids. However, not all of the uses envisioned in the initial memorandum of understanding between NASA and Roscosmos have been realised, In the 2010 United States National Space Policy, the ISS was given additional roles of serving commercial, diplomatic, and educational purposes.

Scientific research

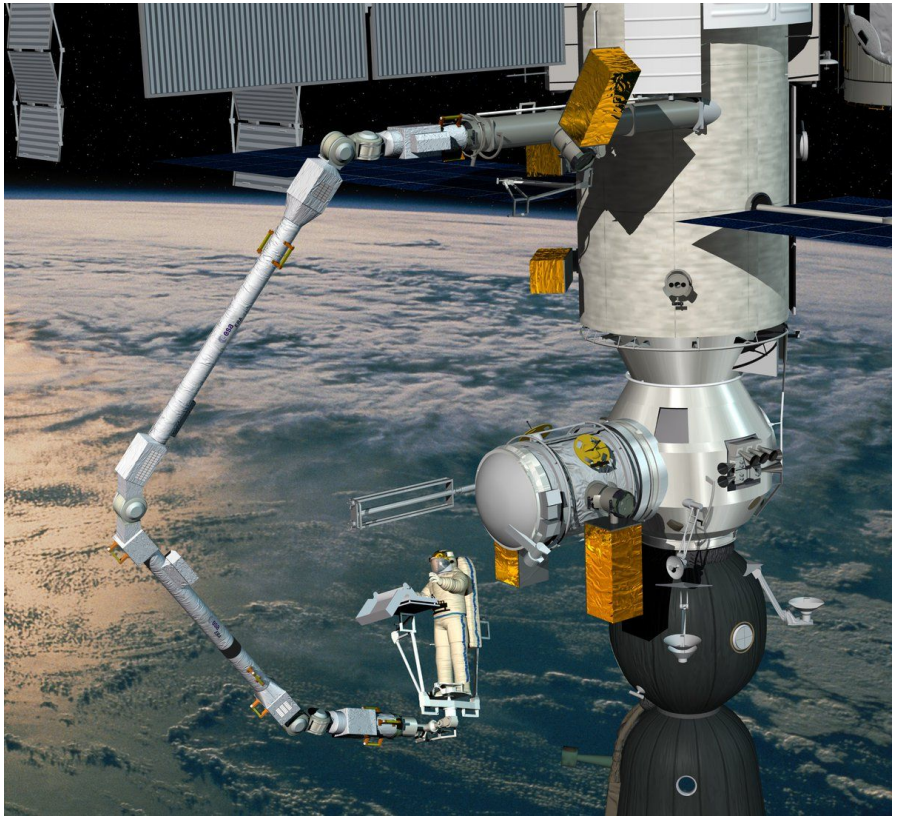
The ISS provides a platform to conduct scientific research, with power, data, cooling, and crew available to support experiments.

European Robotic Arm

The **European Robotic Arm** (**ERA**) is a robotic servicing system, which will be used to assemble and service the Russian segment of the International Space Station.

The ERA has several interesting features. Most prominent are its ability to 'walk' around the exterior of the Russian segments of the station under its own control, moving hand-over-hand between pre-fixed base points, and its ability to perform many tasks automatically or semi-automatically, thereby freeing its operators to do other work. Specific tasks of ERA include:

- **Installation and deployment of solar arrays**
- **Replacement of solar arrays**
- **Inspection of the station**
- **Handling of (external) payloads**
- **Support of astronauts during space walks**



NASA Space Apps Challenge 2020

NASA Space Apps Challenge is a world's largest global hackathon that, created in 2012, that engages thousands of people across the planet to use NASA's open data to build innovative solutions to challenges humanity faces on Earth and in space. Teams of technologists, scientists, designers and others are welcome to collaborate and to figure out the best solutions of challenges on Earth and in space with NASA's open source data in a 48-hour sprint. Last year's hackathon had over 26000 participants in 2303 teams from 150 countries. Here are the winners:

DATA
Team: Monsoon Overflow
Challenge: *A Flood of Ideas*
Location: Vallabh Vidyanagar, India

MISSION
Team: Loud and Clear
Challenge: *Can You Hear Me Now?*
Location: Perth, Australia

IMPACT
Team: Project L.L.O.C.U.S.T.
Challenge: *Automated Hazards Detection*
Location: Universal Event

SCIENCE
Team: ASPIRE
Challenge: *Scanning for Lifeforms*
Location: Tilangana, India

TECHNOLOGY
Team: FireWay
Challenge: *Let's Connect*
Location: Dnipro, Ukraine

INSPIRATIONAL
Team: A.I. Itruistics
Challenge: *Create a Mascot*
Location: Universal Event

INSPIRATIONAL
Team: Team Twilight
Challenge: *Scanning for Lifeforms*
Location: New York, USA

Plans for Future: United States of America

Launches and Landings Scheduled by NASA in 2021

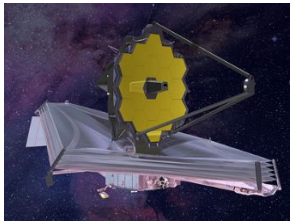
Date: No Earlier Than April
Mission: NASA, SpaceX Crew-1 Mission Splashdown
Description: Return of Crew-1 with NASA astronauts Michael Hopkins, Victor Glover and Shannon Walker, along with JAXA astronaut Soichi Noguchi

Date: No Earlier Than September
Mission: Boeing Crew Flight Test
Description: NASA astronauts Mike Fincke, Nicole Mann, and Barry "Butch" Wilmore are slated to launch aboard Boeing's CST-100 Starliner atop a United Launch Alliance Atlas V rocket.

Date: No Earlier Than April 2, 2021
Mission: Boeing Orbital Flight Test 2 (Uncrewed)
Description: For this second uncrewed flight test, Boeing's CST-100 Starliner will launch atop a United Launch Alliance Atlas V rocket.

Date: October 31, 2021
Mission: Lucy Mission
Description: Launching from Kennedy Space Center in Florida, Lucy will be the first space mission to study the Trojan asteroids associated with the planet Jupiter.

Date: No Earlier Than April 20, 2021
Mission: JNASA, SpaceX Crew-2 Mission to the International Space Station
Description: NASA's SpaceX Crew-2 mission will launch four astronauts aboard a Crew Dragon spacecraft on a Falcon 9 rocket to the space station.

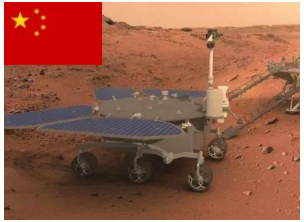


Date: No Earlier Than October 16, 2021
Mission: James Webb Space Telescope
Description: The James Webb Space Telescope will find the first galaxies that formed in the early universe and peer through dusty clouds to see stars forming planetary systems.

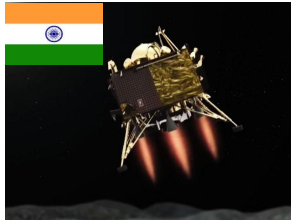
Source: NASA

Plans for Future: Other Countries

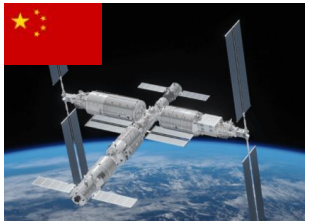
Launches and Landings Scheduled by Other Space Agencies in 2021-2022



Date: No Earlier Than May 2021
Mission: CNSA, Tianwen-1, Zhurong Rover Landing
Description: China's first Mars rover Zhurong will land on Red Planet's surface in order to study geology and look for water.



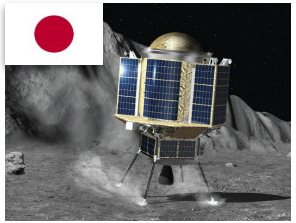
Date: 1st half of 2022
Mission: ISRO, Chandrayaan-3
Description: Chandrayaan-3 consists of a lunar lander and a rover and is a successor of Chandrayaan-2 that failed to soft land previously.



Date: 2021-2022
Mission: CNSA, Tiangong Space Station
Description: In April 2021 China launched the core module of its stationary space station to Earth orbit. The carrier rocket then went to an uncontrolled fall. The other modules will be launched in the following year.

Date: No Earlier Than May 2021
Mission: ESA, European Robotic Arm
Description: The Robotic Arm is going to be launched to the ISS and attached to the Russian Segment. The purpose of it is assembly work and maintenance

Date: No Earlier Than December 2021
Mission: ISRO, Gaganyaan
Description: Gaganyaan is a first indian vehicle capable of containing three crew members. ISRO will launch Vyomitra, humanoid robot inside in order to conduct some tests.



Date: No Earlier Than January 2022
Mission: JAXA, SLIM Lunar Lander
Description: Smart Lander for Investigating Moon is designed to demonstrate innovative landing techniques, that will highly improve the accuracy of landing.

Conclusions

May 2021

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Conclusions

USA with its NASA is leading the SpaceTech industry by margin, especially making use of the cooperation with SpaceX. They have groundbreaking projects on the subject of Mars and Jupiter exploration and also the launching of an innovative telescope. There are at least six significant launches planned for 2021, part of which has already been executed. Russia and China are fiercely competing with US, but that doesn't rule out the possibility of cooperations between those three.

Such agencies as japanese JAXA and european ESA are on the way of "peaceful use of outer space", which means that those strive not for superiority, but for the progress in technology and science and so the cooperation is made easy and advantageous. Both agencies are focusing on the ecologically positive ways to conduct space missions, meaning reducing the amount of space debris and acquiring info about different factors of pollution and ways to fix them.

Arab and Indian programmes are continuously developing their way to becoming the strong players in the space tech industry. These programmes are showing the fastest results among the newly established space agencies.

The bullet-point conclusions are:

- The number of governmental space agencies is increasing. There are 11 new agencies that are expected to emerge in the following years.
- The development of the governmental agencies has accelerated during last 10 years.
- The analysis revealed a trend of cooperation between various agencies, including private companies (NASA and SpaceX; Artemis and Boeing).
- Overall output of the space programmes is expected to be increasing.
- Some of the agencies are now able to have a number of significant launches on their own in a single year, compared to a relatively low efficiency in the past.
- Russian space programme slowly loses momentum of development.
- China is developing its programme with a huge effort, however there are some major failures in its recent past.
- UAE and India are developing space technologies rapidly.
- ESA and JAXA are working their "green" way to science.

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New Era in Big Data Analytics for SpaceTech Industry

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1000+ SpaceTech Leaders

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Companies & Investors

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- Funding Rounds
- Leading Companies & Investors

SpaceTech Mindmap

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Dashboard Parameters

COMPANIES	INVESTORS	HUBS AND R&D
10000+	5000	280
INDUSTRY SECTORS	**PARAMETERS**	**DATA POINTS**
20+	100+	399993+

List of Companies

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Industry Overview

- International Collaborations
- Small Satellites
- Technical Issues and Solutions

Other Assessments

- Space Medicine Industry
- Space Law & Economics
- Unidentified Aerial Phenomena

National Space Programms

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Space Travel Industry

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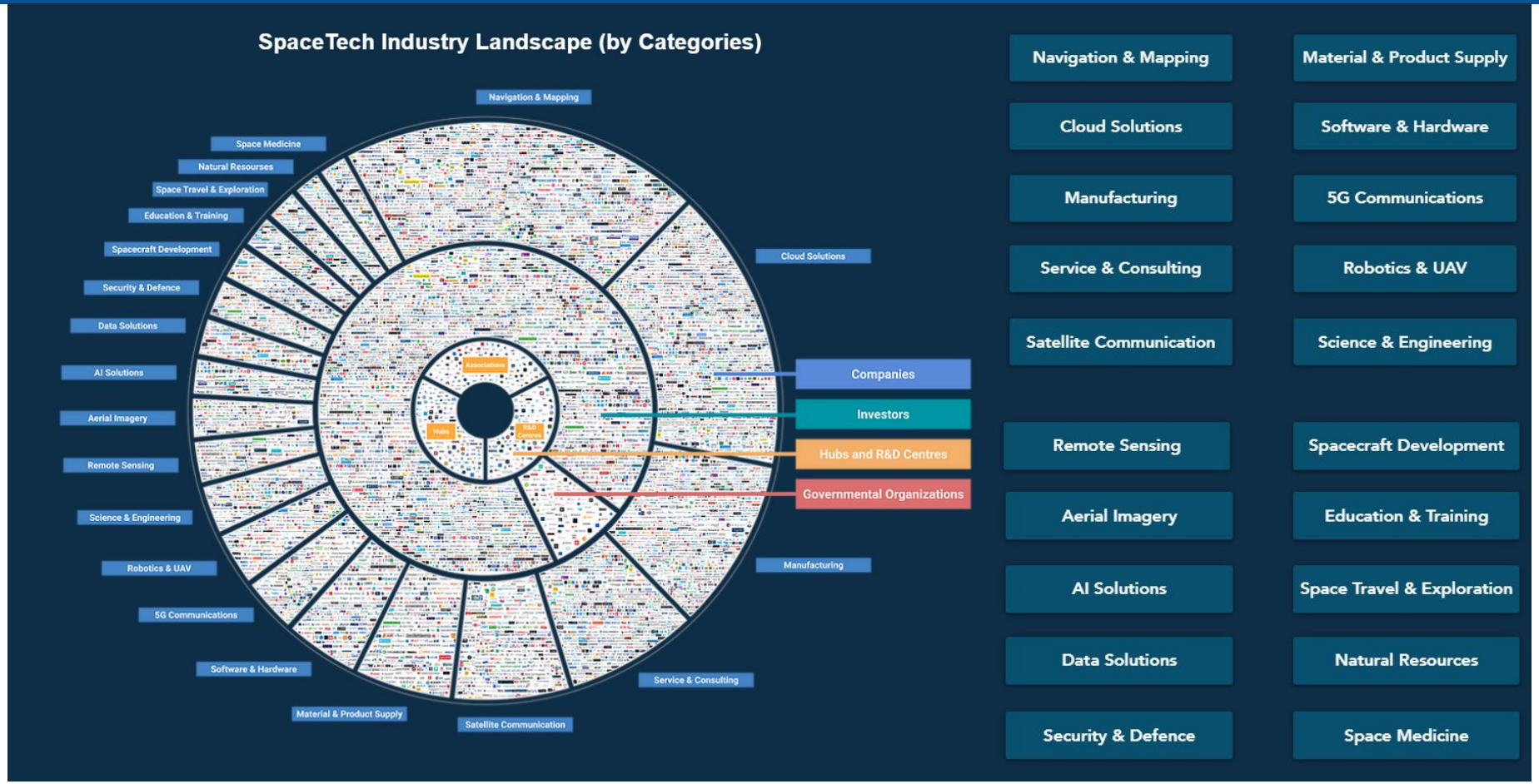
Landscape Overview Documents

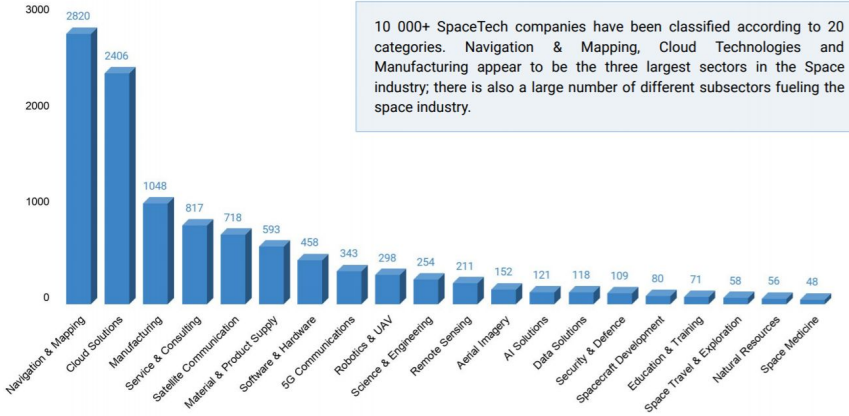
- Teaser
- One Pager
- Press Realese

SpaceTech Interactive Mindmap



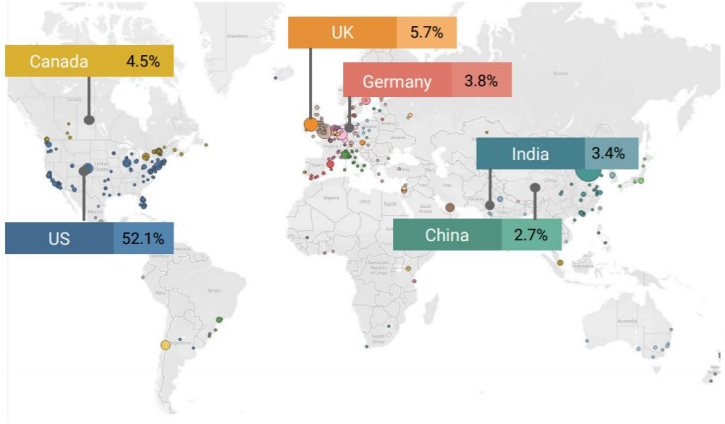
SpaceTech Interactive Mindmap

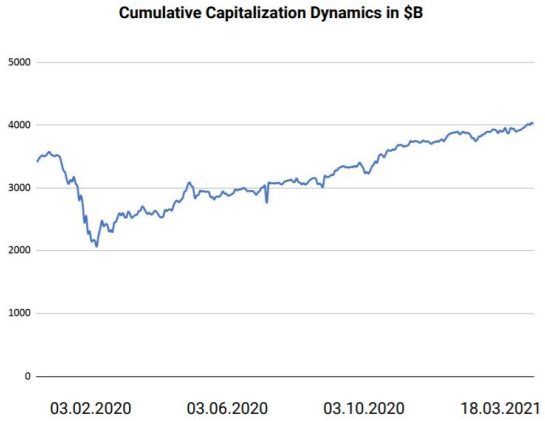
SpaceTech Sectors in 2021 (by Number of Companies)



10 000+ SpaceTech companies have been classified according to 20 categories. Navigation & Mapping, Cloud Technologies and Manufacturing appear to be the three largest sectors in the Space industry; there is also a large number of different subsectors fueling the space industry.

Company Regional Distribution (by Number of Companies) in 2021





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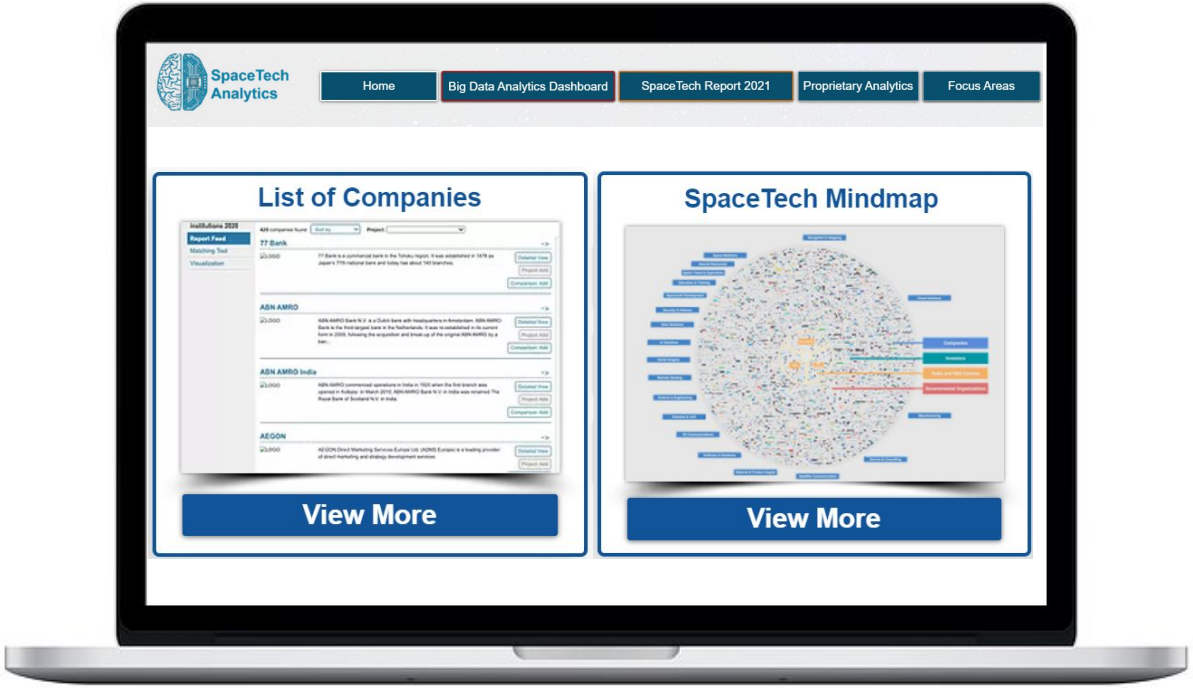

100,000+ Data Points

10,000 Companies

20 Industry Sectors

100+ Parameters

1000+ SpaceTech Leaders

SpaceTech Industry in Figures

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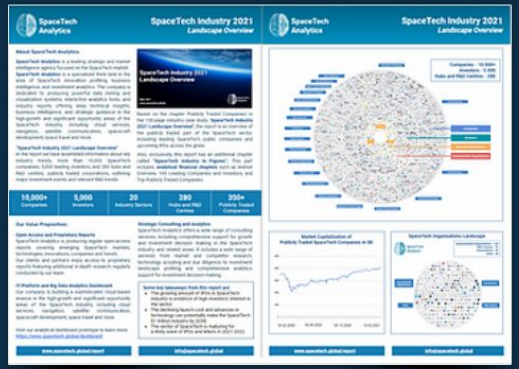
SpaceTech Landscape Overview 2021

One Pager



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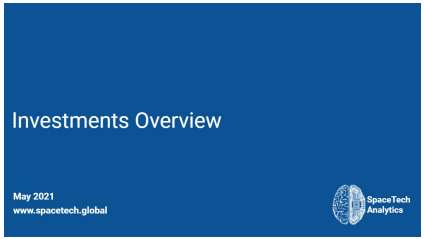
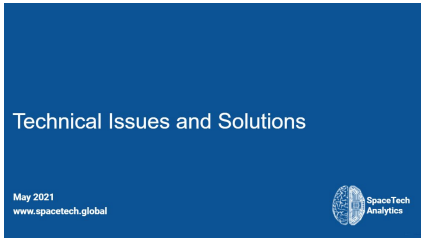
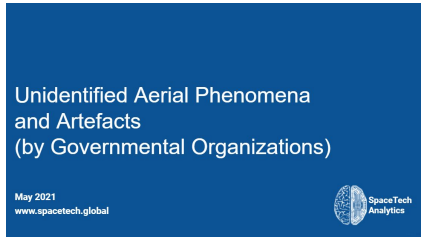
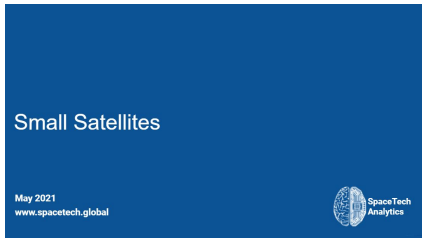
SpaceTech Analytics: Report

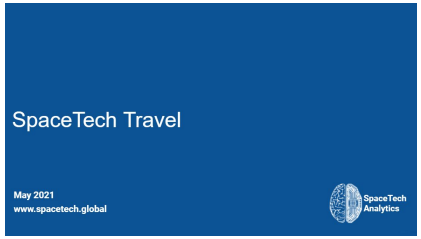
The main aim of this series of reports is to provide a comprehensive overview of the industry landscape. This overview highlights SpaceTech cooperation trends in a form of informative mindmaps and infographics as well as benchmarks the performance of key players that form the space and relations within the industry. This is an overview analysis to help the reader understand what is happening in the industry nowadays and possibly give an idea of what is waiting for it in the nearest future.











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Deep Knowledge Group
Overview

OUR CONSORTIUM

Deep Knowledge Group is a consortium of commercial and non-profit organizations active on many fronts in the realm of DeepTech and Frontier Technologies (AI, Longevity, FinTech, GovTech, InvestTech), ranging from scientific research to investment, entrepreneurship, analytics, media, philanthropy and more.

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- Aging Analytics Agency
- Deep Knowledge Analytics
- Deep Pharma Intelligence
- NeuroTech Analytics
- GovTech E-Governance Analytics
- COVID-19 Analytics
- Innovation Eye
- Interactive MindMaps

For Profit & Non-Profit Activities

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- Longevity Capital Fund
- Longevity FinTech
- Notable Acknowledgements
- Biogerontology Research Foundation
- Longevity International UK
- Longevity Book
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