

GLOBAL CAPABILITIES

An Open Source Assessment



EXECUTIVE SUMMARY



The space domain is undergoing a significant set of changes. A growing number of countries and commercial actors are getting involved in space, resulting in more innovation and benefits on Earth, but also more congestion and competition in space. From a security perspective, an increasing number of countries are looking to use space to enhance their military capabilities and national security. The growing use of, and reliance on, space for national security has also led more countries to look at developing their own counterspace capabilities that can be used to deceive, disrupt, deny, degrade, or destroy space systems.

The existence of counterspace capabilities is not new, but the circumstances surrounding them are. Today there are increased incentives for development, and potential use, of offensive counterspace capabilities. There are also greater potential consequences from their widespread use that could have global repercussions well beyond the military, as huge parts of the global economy and society are increasingly reliant on space applications.

This report compiles and assesses publicly available information on the counterspace capabilities being developed by multiple countries across five categories: co-orbital, direct-ascent, electronic warfare, directed energy, and cyber. It assesses the current and near-term future capabilities for each country, along with their potential military utility. The evidence shows significant research and development of a broad range of destructive and non-destructive counterspace capabilities in multiple countries. **However, only non-destructive capabilities are actively being used against satellites in current military operations.** The following provides a more detailed summary of each country's capabilities.

	US	RUSSIA	CHINA	INDIA	AUS.	FRANCE	GERMANY	IRAN	ISRAEL	JAPAN	N. KOREA	S. KOREA	UK
LEO Co-Orbital	■	▲	■	●	●	■	●	●	●	●	●	●	●
MEO/GEO Co-Orbital	■	■	■	●	●	■	●	●	●	●	●	●	●
LEO Direct-Ascent	▲	▲	▲	■	●	●	●	●	■	●	●	●	●
MEO/GEO Direct-Ascent	?	?	■	●	●	●	●	●	●	●	●	●	●
Directed Energy	▲	▲	■	●	●	■	●	●	●	●	●	●	●
Electronic Warfare	▲	▲	▲	■	■	■	●	▲	▲	■	▲	●	●
Space Situational Awareness	▲	▲	▲	■	■	■	■	■	■	■	■	■	■

LEGEND: NONE ● SOME ■ SIGNIFICANT ▲ UNCERTAIN ? NO DATA —

1 – THE UNITED STATES

	R&D	TESTING	OPERATIONAL	USE IN CONFLICT
LEO Direct-Ascent	▲	▲	?	●
MEO/GEO Direct-Ascent	?	—	—	●
LEO Co-Orbital	▲	?	—	●
MEO/GEO Co-Orbital	▲	?	—	●
Directed Energy	▲	■	?	●
Electronic Warfare	▲	▲	▲	▲
Space Situational Awareness	▲	▲	▲	▲

LEGEND: NONE ● SOME ■ SIGNIFICANT ▲ UNCERTAIN ? NO DATA —

The United States has conducted multiple tests of technologies for close approach and rendezvous in both LEO and GEO, along with tracking, targeting, and hit-to-kill (HTK) intercept technologies that could lead to a co-orbital anti-satellite (ASAT) capability. These tests and demonstrations were conducted for other non-offensive missions, such as missile defense, on-orbit inspections, and satellite servicing, and the United States does not have an acknowledged program to develop co-orbital capabilities. However, the United States possesses the technological capability to develop a co-orbital capability in a short period of time if it chooses to. If the United States does move ahead with its plan for a space-based interceptor layer of a proposed “Golden Dome for America,” these weapons would have co-orbital counterspace capabilities.

While the United States does not have an operational, acknowledged direct-ascent anti-satellite (DA-ASAT) program, it does have operational midcourse missile defense interceptors that have been demonstrated in an ASAT role against a low LEO satellite. The United States has developed dedicated DA-ASATs in the past, both conventional and nuclear-tipped, and likely possesses the ability to do so in the near future should it choose so.

The United States has three operational electronic warfare (EW) offensive counterspace systems: the Counter Communications System (CCS), which is deployed globally to provide uplink jamming capability against geostationary communications satellites; Meadowlands, an upgrade to CCS; and Remote Modular Terminal (RMT), an EW counterspace system that can be operated remotely. Through its Navigation Warfare program, the United States has the capability to jam and interfere with the civil signals of global navigation satellite services (GNSS) within a local area of operation to prevent their effective use by adversaries and has demonstrated doing so in several military exercises. The United States likely could jam military GNSS signals as well, although the effectiveness is difficult to assess based on publicly available information. The effectiveness of US measures to counter adversarial jamming and spoofing operations against military GPS signals is not known.

Over the past several decades, the United States has conducted significant research and development on the use of ground-based high-energy lasers for counterspace and other purposes. We assess that there are no technological roadblocks to the United States operationalizing them for counterspace applications. With its Satellite Laser Ranging (SLR) sites and defense research facilities, the United States possesses low-power laser systems with the capability to dazzle, and possibly blind, Earth observation (EO) imaging satellites. However, there is no indication that these potential high or low power capabilities have been operationalized.

There is no public evidence that the United States has a space-based directed energy weapons (DEW) capability. The Missile Defense Agency (MDA) is planning to conduct research into the feasibility of DEW for defending against ballistic missiles and the Space Force has expressed an interest in a directed energy architecture in general (not necessarily space-based). If developed, these systems may have a capability against other orbiting satellites and, depending on their target acquisition and tracking capabilities, may be considered de facto anti-satellite systems.

The United States currently possesses the most advanced SSA capabilities in the world, particularly for military applications. US SSA capabilities date back to the beginning of the Cold War and leverage significant infrastructure developed for missile warning and missile defense. The core of its SSA capabilities is a robust, geographically dispersed network of ground-based radars and telescopes and space-based telescopes. The United States is investing heavily in upgrading its SSA capabilities by deploying new radars and telescopes in the Southern Hemisphere, upgrading existing sensors, and signing SSA data sharing agreements with other countries and satellite operators. The United States still faces challenges in modernizing the software and computer systems used to conduct SSA analysis and is increasingly looking to leverage commercial capabilities.

The United States has had established doctrine and policy on counterspace capabilities for several decades, although not always publicly expressed. Most US presidential administrations since the 1960s have directed or authorized research and development of counterspace capabilities, and in some cases greenlit testing or operational deployment of counterspace systems. These capabilities have typically been limited in scope and designed to counter a specific military threat, rather than be used as a broad coercive or deterrent threat. The current US military doctrine includes offensive and defensive military force and is focused on suppressing adversary uses of space in an armed conflict while protecting the United States' ability to use space.

The United States recently underwent a major reorganization of its military space activities as part of a renewed focus on space as a warfighting domain. Since 2014, US policymakers have placed increased focus on space security, and have increasingly talked publicly about preparing for a potential "war in space." This rhetoric has been accompanied by a renewed focus on reorganizing national security space structures and increasing the resilience of space systems. This has culminated in the reestablishment of US Space Command (USSPACECOM) and the creation of the US Space Force (USSF), which assumed the responsibilities of US Strategic Command for space warfighting and Air Force Space Command (AFSPC) for operating, training, and equipping of space forces, respectively. To date, the missions of these new organizations are largely a continuation of previous military space missions, although some have advocated for expanding their focus to include cislunar activities and more offensive weapons. The United States has acknowledged it has also begun developing new offensive counterspace capabilities, although the United States has publicly stated it will not test destructive DA-ASAT weapons. The United States also continues to hold annual space wargames and exercises that increasingly involve close allies and commercial partners.

2 – RUSSIA

	R&D	TESTING	OPERATIONAL	USE IN CONFLICT
LEO Direct-Ascent	▲	▲	?	●
MEO/GEO Direct-Ascent	?	—	—	●
LEO Co-Orbital	▲	▲	?	●
MEO/GEO Co-Orbital	▲	—	—	●
Directed Energy	▲	■	?	●
Electronic Warfare	▲	▲	▲	▲
Space Situational Awareness	▲	▲	▲	▲

LEGEND: NONE ● SOME ■ SIGNIFICANT ▲ UNCERTAIN ? NO DATA —

There is strong evidence that Russia has embarked on a set of programs since 2010 to regain offensive counterspace capabilities it lost following the end of the Cold War. Since 2010, Russia has been testing technologies for RPO in both LEO and GEO that could lead to or support a co-orbital ASAT capability, and some of those efforts have links to a Cold War-era LEO co-orbital ASAT program. Additional evidence suggests Russia may have started a new co-orbital ASAT program called Burevestnik, potentially supported by a surveillance and tracking program called Nivelir. The technologies developed by these programs could also be used for non-aggressive applications, including surveilling and inspecting foreign satellites, and most of the on-orbit RPO activities done to date match these missions. However, Russia has deployed two “sub-satellites” at high velocity, which suggests at least some of their LEO RPO activities are of a weapons nature.

Russia has long had the potential for a DA-ASAT capability through its historical ballistic missile defense capabilities and had DA-ASAT development programs in the past that never fully became operational. In November 2021, after more than a decade of development and testing, Russia successfully demonstrated a DA-ASAT capability against a LEO satellite. It is unclear whether this system, the Nudol, will become operational soon, and it does not appear to have the capability to threaten targets beyond LEO.

Russia places a high priority on integrating electronic warfare (EW) into military operations and has been investing heavily in modernizing this capability. Most of the upgrades have focused on multifunction tactical systems whose counterspace capability is limited to jamming of user terminals within tactical ranges. Russia has a multitude of systems that can jam GPS receivers within a local area, potentially interfering with the guidance systems of unmanned aerial vehicles (UAVs), guided missiles, and precision-guided munitions (PGMs), but has no publicly known capability to interfere with the GPS satellites themselves using radio frequency interference. The Russian Army fields several types of mobile EW systems, some of which can jam specific satellite communications user terminals within tactical ranges. Russia can likely jam communications satellites uplinks over a wide area from fixed ground stations facilities. Russia has operational experience in the use of counterspace EW capabilities from current military campaigns, as well as using it within Russia for protecting strategic locations and VIPs. Russia may be developing high-powered space-based EW platforms to augment its existing ground-based platforms.

Russia has a strong technological knowledge base in directed energy physics and is developing a number of military applications for laser systems in a variety of environments. Russia has a mobile ground-based laser dazzler system, Peresvet, that is linked to protection of its road mobile intercontinental ballistic missile force. Russia may have revived a legacy program whose goal is to develop an aircraft-borne laser system for targeting the optical sensors of imagery reconnaissance satellites, although there is no indication that an operational capability has been achieved. Although not their intended purpose, Russian ground-based satellite laser ranging (SLR) facilities could be used to dazzle the sensors of optical imagery or ISR satellites. There is no indication that Russia is developing, or intending to develop, high-power space-based laser weapons.

Russia has sophisticated SSA capabilities that are likely second only to the United States. Russian SSA capabilities date to the Cold War and leverage significant infrastructure originally developed for missile warning and missile defense. Although some of these capabilities atrophied after the fall of the Soviet Union, Russia has engaged in several modernization efforts since the early 2000s to reinvigorate them. While the government-owned and -operated SSA capabilities are limited to the geographic boundaries of the former Soviet Union, Russia is engaging in international civil and scientific cooperative efforts that likely give it access to data from SSA sensors around the globe. Today, Russia maintains a catalog of Earth-orbiting space objects in LEO that is somewhat smaller than that of the United States but a slightly more robust catalog of HEO and GEO objects.

Russian military thinkers see modern warfare as a struggle over information dominance and net-centric operations that can often take place in domains without clear boundaries and contiguous operating areas. To meet the challenge posed by the space aspect of modern warfare, Russia is pursuing goals of incorporating EW capabilities throughout its military to both protect its own space-enabled capabilities and degrade or deny those capabilities to its adversary. In space, Russia is seeking to mitigate the superiority of US space assets by fielding a number of ground-, air-, and space-based offensive capabilities. Russia has recently reorganized its military space forces into a new organization that combines space, air defense, and missile defense capabilities. Although technical challenges remain, Russian leadership has indicated that Russia will continue to seek parity with the United States in space.

3 – CHINA

	R&D	TESTING	OPERATIONAL	USE IN CONFLICT
LEO Direct-Ascent	▲	▲	▲	●
MEO/GEO Direct-Ascent	■	■	—	●
LEO Co-Orbital	▲	?	—	●
MEO/GEO Co-Orbital	▲	?	—	●
Directed Energy	▲	■	—	●
Electronic Warfare	▲	▲	▲	?
Space Situational Awareness	▲	▲	▲	?

LEGEND: NONE ● SOME ■ SIGNIFICANT ▲ UNCERTAIN ? NO DATA —

China has conducted multiple tests of technologies for close approach and rendezvous in both LEO and GEO that could lead to a co-orbital ASAT capability. However, the public evidence indicates they have not conducted an actual destructive intercept of a target, and there is no proof that these technologies are definitively being developed for counterspace use as opposed to intelligence gathering or other purposes.

China has at least one, and possibly as many as three, programs underway to develop DA-ASAT capabilities, either as dedicated counterspace systems or as midcourse missile defense systems that could provide counterspace capabilities. China has engaged in multiple, progressive tests of these capabilities since 2005, indicating a serious and sustained organizational effort. Chinese DA-ASAT capability against LEO targets is likely mature and may be operationally fielded on mobile launchers. Chinese DA-ASAT capability against deep space targets (medium Earth orbit, or MEO, and GEO) is likely still in the experimental or development phase, and there is not sufficient evidence to conclude whether it will become an operational capability in the near future.

China is likely to have significant EW counterspace capabilities against GNSS and satellite communications, although the exact nature is difficult to determine through open sources. Chinese military doctrine places a heavy emphasis on electronic warfare as part of the broader information warfare. While there is significant evidence of Chinese scientific research and development of EW capabilities for counterspace applications and some open-source evidence of Chinese EW counterspace capabilities being deployed, there is no public evidence of their active use in military operations.

China is likely to be developing DEW for counterspace use, although public details are scarce. There is strong evidence of dedicated research and development and reports of testing at five different locations, but limited details on the operational status and maturity of any fielded capabilities.

China is developing a sophisticated network of ground-based optical telescopes and radars for detecting, tracking, and characterizing space objects. Like the United States and Russia, several of the Chinese SSA radars also serve missile warning functions. While China lacks an extensive network of SSA tracking assets outside its borders, it does have a fleet of tracking ships and is developing relationships with countries that may host future sensors. Since 2010, China has deployed several satellites capable of conducting RPO on orbit, which likely aids in its ability to characterize and collect intelligence on foreign satellites.

Although official Chinese statements on space warfare and weapons have

remained consistently aligned to the peaceful purposes of outer space, unofficially they have become more nuanced. China has recently designated space as a military domain, and military writings state that the goal of space warfare and operations is to achieve space superiority using offensive and defensive means in connection with their broader strategic focus on asymmetric cost imposition, access denial, and information dominance. In 2024, China proceeded to disband its Strategic Support Force in favor of splitting up its responsibilities among three forces and putting renewed efforts into information service. China’s considerable investment in developing and testing counterspace capabilities, suggest it sees space as a domain for future conflicts, whether or not that is officially stated. That said, it is uncertain whether China would fully utilize its offensive counterspace capabilities in a future conflict or whether the goal is to use them as a deterrent against US aggression. There is no public evidence of China actively using destructive counterspace capabilities in current military operations, although it is likely China is using SSA and electronic warfare in at least some support roles.

4 – INDIA

	R&D	TESTING	OPERATIONAL	USE IN CONFLICT
LEO Direct-Ascent	■	■	—	●
MEO/GEO Direct-Ascent	—	—	—	●
LEO Co-Orbital	—	—	—	●
MEO/GEO Co-Orbital	—	—	—	●
Directed Energy	■	—	—	●
Electronic Warfare	■	■	?	?
Space Situational Awareness	■	■	?	?

LEGEND: NONE ● SOME ■ SIGNIFICANT ▲ UNCERTAIN ? NO DATA —

India has over five decades of experience with space capabilities, but most of that has been civil in focus. It is only relatively recently that India has started organizationally making way for its military to become active users of space and creating explicit military space capabilities. India demonstrated its ASAT capability in March 2019 when it destroyed one of its satellites. While India continues to insist that it is against the weaponization of space, India may be moving toward an offensive counterspace posture. India is reportedly in the early stages of working on directed energy weapons. In 2025, India successfully showcased twice its ability to maneuver civilian space assets in orbit, marking an important step toward developing rendezvous and docking technology for space assets.

6 – AUSTRALIA

	R&D	TESTING	OPERATIONAL	USE IN CONFLICT
LEO Direct-Ascent	—	—	—	●
MEO/GEO Direct-Ascent	—	—	—	●
LEO Co-Orbital	—	—	—	●
MEO/GEO Co-Orbital	—	—	—	●
Directed Energy	■	—	—	●
Electronic Warfare	■	—	—	—
Space Situational Awareness	■	■	■	?

LEGEND: NONE ● SOME ■ SIGNIFICANT ▲ UNCERTAIN ? NO DATA —

Australia is a relative newcomer in space, although it has long played a support role by hosting ground infrastructure for satellite communications and command and control. Recently, however, Australia has created the groundwork for more indigenous space capabilities, including within its military. Australia has recently started a military space organization, is building out a policy framework for its military space priorities, is putting concerted efforts and resources into building its own SSA capabilities, is examining an EW capability for its Department of Defence, and is looking into non-destructive ways in which to interfere with enemy satellites.

7 – FRANCE

	R&D	TESTING	OPERATIONAL	USE IN CONFLICT
LEO Direct-Ascent	—	—	—	●
MEO/GEO Direct-Ascent	—	—	—	●
LEO Co-Orbital	■	—	—	●
MEO/GEO Co-Orbital	■	—	—	●
Directed Energy	■	?	—	●
Electronic Warfare	?	?	?	?
Space Situational Awareness	■	■	■	?

LEGEND: NONE ● SOME ■ SIGNIFICANT ▲ UNCERTAIN ? NO DATA —

While France has long had a space program, as well as military satellites, it was not until recently that France had an explicit focus on offensive and defensive counterspace activities. The major change occurred in July 2019 with the release of the first French Space Defense Strategy, which elevated French military space efforts and control of French military satellites. While some French officials suggested machine guns on satellites, the actual plan calls for ground-based lasers for dazzling and satellites equipped for on-orbit inspections and also with lasers used for what has been described as self-defense, but could suggest potential for enabling counterspace capability. Subsequently, new demonstration assets are slated for deployment, including patrol-guard satellites and lasers. Since 2021, France has carried out annual military exercises, codenamed “ASTERX,” in outer space, testing the capabilities of its Space Command, as part of France’s evolving goal to be the world’s third-largest spatial power. France and the United States conducted two RPO engagements in 2025.

8 – GERMANY

	R&D	TESTING	OPERATIONAL	USE IN CONFLICT
LEO Direct-Ascent	?	–	–	●
MEO/GEO Direct-Ascent	–	–	–	●
LEO Co-Orbital	?	–	–	●
MEO/GEO Co-Orbital	–	–	–	●
Directed Energy	?	–	–	●
Electronic Warfare	■	–	–	–
Space Situational Awareness	▲	▲	▲	?

LEGEND: NONE ● SOME ■ SIGNIFICANT ▲ UNCERTAIN ? NO DATA –

Germany historically has had a civil focus to its space program. However, its military, the Bundeswehr, is working to expand its presence in orbit. The combination of a significant planned investment in space and defense systems over the next five years, a new space strategy, and growing engagement in space surveillance points to an increase in German abilities to develop the necessary capabilities to potentially carry out attacks against space systems, should it choose to do so. Germany is changing rapidly from having no offensive counterspace capabilities, to soon having several options available to it.

9 – IRAN

	R&D	TESTING	OPERATIONAL	USE IN CONFLICT
LEO Direct-Ascent	–	–	–	●
MEO/GEO Direct-Ascent	–	–	–	●
LEO Co-Orbital	–	–	–	●
MEO/GEO Co-Orbital	–	–	–	●
Directed Energy	–	–	–	●
Electronic Warfare	▲	▲	▲	▲
Space Situational Awareness	■	■	?	?

LEGEND: NONE ● SOME ■ SIGNIFICANT ▲ UNCERTAIN ? NO DATA –

Iran has a nascent space program, building and launching small satellites that have limited capability. Technologically, it is unlikely Iran has the capacity to build on-orbit or direct-ascent anti-satellite capabilities, and little military motivation for doing so at this point. Iran's military has an independent ability to launch satellites, separate from Iran's civil space program. Iran has not demonstrated any ability to build homing kinetic kill vehicles, and its ability to build nuclear devices is still constrained. Iran has demonstrated an electronic warfare capability to persistently interfere with the broadcast of commercial satellite signals and Starlink ground terminals, although its capacity to interfere with military signals is difficult to ascertain.

10 – ISRAEL

	R&D	TESTING	OPERATIONAL	USE IN CONFLICT
LEO Direct-Ascent	?	—	—	—
MEO/GEO Direct-Ascent	—	—	—	—
LEO Co-Orbital	—	—	—	—
MEO/GEO Co-Orbital	—	—	—	—
Directed Energy	■	■	—	—
Electronic Warfare	▲	▲	▲	▲
Space Situational Awareness	■	■	?	?

LEGEND: NONE ● SOME ■ SIGNIFICANT ▲ UNCERTAIN ? NO DATA —

In 1988, Israel became the eighth country to be able to launch its own satellite into orbit. It has maintained a space program that has largely been civil in nature and co-developed a missile defense system that has been until recently strictly for endoatmospheric interception of rockets. However, in recent years Israel has moved to expand its military space program and launched a Space Directorate Unit within the Israel Defense Forces. Moreover, there is evidence it has developed counterspace capabilities. These include the recent demonstration of an exoatmospheric missile defense intercept capability and use of electronic warfare in active military conflicts.

11 – JAPAN

	R&D	TESTING	OPERATIONAL	USE IN CONFLICT
LEO Direct-Ascent	?	—	—	●
MEO/GEO Direct-Ascent	—	—	—	●
LEO Co-Orbital	—	—	—	●
MEO/GEO Co-Orbital	—	—	—	●
Directed Energy	?	—	—	●
Electronic Warfare	■	—	—	—
Space Situational Awareness	■	■	■	—

LEGEND: NONE ● SOME ■ SIGNIFICANT ▲ UNCERTAIN ? NO DATA —

Japan has long been a well-established space actor and its space activities have historically been non-military in nature. In 2008, Japan released a Basic Space Law that allowed for national security-related activities in space and since then, government officials have begun to publicly speak about developing various counterspace capabilities and military SSA capacity. Japan is currently undergoing a major reorganization of its military space activities and the development of enhanced SSA capabilities to support military and civil applications. While Japan does not have any acknowledged offensive counterspace capabilities, it is exploring whether to develop them. Japan recently published guidelines for space domain defense that call for “bodyguard” satellites. Japan has a latent DA-ASAT capability via its missile defense system but has never tested it in that capacity.

12 – NORTH KOREA

	R&D	TESTING	OPERATIONAL	USE IN CONFLICT
LEO Direct-Ascent	—	—	—	●
MEO/GEO Direct-Ascent	—	—	—	●
LEO Co-Orbital	—	—	—	●
MEO/GEO Co-Orbital	—	—	—	●
Directed Energy	—	—	—	●
Electronic Warfare	▲	▲	▲	?
Space Situational Awareness	?	?	?	—

LEGEND: NONE ● SOME ■ SIGNIFICANT ▲ UNCERTAIN ? NO DATA —

North Korea has no demonstrated capability to mount kinetic attacks on space assets. North Korea does not appear highly motivated to develop kinetic counterspace capabilities, though certain capabilities in its ballistic missile program could eventually be evolved for such a purpose. North Korea has exhibited the capability to jam civilian and military GPS signals within a limited geographical area. There has been no demonstrated ability of North Korea to interfere with satellite communications, although its technical capability remains unknown.

13 – SOUTH KOREA

	R&D	TESTING	OPERATIONAL	USE IN CONFLICT
LEO Direct-Ascent	—	—	—	●
MEO/GEO Direct-Ascent	—	—	—	●
LEO Co-Orbital	—	—	—	●
MEO/GEO Co-Orbital	—	—	—	●
Directed Energy	?	—	—	●
Electronic Warfare	■	—	—	—
Space Situational Awareness	■	■	■	?

LEGEND: NONE ● SOME ■ SIGNIFICANT ▲ UNCERTAIN ? NO DATA —

Over the last several years, South Korea has increased its focus on military space capabilities. South Korea is working to enhance the space capabilities of the Republic of Korea Air Force through the establishment of the Korea Space Operations Center, cooperating with the United States on sharing SSA capabilities, and the creation of a Space Operations Squadron in charge of informing and supporting the entire military on space threats. South Korea is developing its own space launch vehicles; it also has expressed interest in developing its own reversible counterspace capabilities.

14 – THE UNITED KINGDOM

	R&D	TESTING	OPERATIONAL	USE IN CONFLICT
LEO Direct-Ascent	—	—	—	●
MEO/GEO Direct-Ascent	—	—	—	●
LEO Co-Orbital	—	—	—	●
MEO/GEO Co-Orbital	—	—	—	●
Directed Energy	—	—	—	●
Electronic Warfare	—	—	—	●
Space Situational Awareness	■	■	■	?

LEGEND: NONE ● SOME ■ SIGNIFICANT ▲ UNCERTAIN ? NO DATA —

The United Kingdom has long played a supporting role in military space activities through its participation in NATO and its bilateral relationship with the United States. Over the past few years, the United Kingdom has begun to add additional elements to increase its indigenous military space capabilities, primarily in SSA and policy, organization, and doctrine. The United Kingdom and the United States conducted an RPO. While the United Kingdom has not publicly announced any specific plans to develop offensive counterspace capabilities, its recently published Strategic Defence Review does include a focus on space control.

15 – CYBER CAPABILITIES

Multiple countries possess cyber capabilities that could be used against space systems; however, actual evidence of cyberattacks in the public domain is limited. The United States, Russia, China, France, Iran, Israel, and North Korea have all demonstrated the ability and willingness to engage in offensive cyberattacks against non-space targets. Additionally, a growing number of non-state actors are actively probing commercial satellite systems and discovering cyber vulnerabilities that are similar to those found in non-space systems. This indicates that manufacturers and developers of space systems may not yet have reached the same level of cyber hardness as other sectors. But to date, there have only been a few publicly-disclosed cyberattacks directly targeting space systems and nearly all have gone after the end user segment and not satellites themselves. The largest was a cyberattack by Russia against the user segment of Viasat’s commercial satellite broadband service in Europe, which coincided with the first day Russian forces entered Ukraine in February 2022.

There is a clear trend toward lower barriers to access, and widespread vulnerabilities, coupled with reliance on relatively unsecured commercial space systems, create the potential for non-state actors to carry out some counterspace cyber operations without state assistance. However, while this threat deserves attention and will likely grow in severity over the next decade, there remains a stark difference at present between the cyberattack capabilities of leading nation-states and other actors.

2026 ADDITIONS

V

The following are brief summaries of the major additions for the 2026 edition of this report, broken down by country, along with a page reference to their location in the text. Individual minor changes or the impact of changes on summaries and assessments have been integrated into the text.

01 – The United States /

- Added information about the end of the X-37B mission OTV-7, the beginning of OTV-8, and updated the table tracking flights of the X-37B (01-07)
- Added Clio, thought to be part of the Nemesis series moving around the GEO belt (01-10)
- Updated the number of GSSAPs on orbit with the launch of GSSAPs 7 and 8 (01-11)
- Added information about GSSAPs conducting close approaches of China's TJS-15, TJS-16, and TJS-17 (01-13)
- Added the follow-on program to GSSAP, RG-XX (01-13)
- Added information about US/French and US/UK RPOs during 2025 (01-14)
- Updated the table of recent US RPOs (01-15)
- Added information about LDPE-3A conducting close approaches with China's SJ-23 in October 2024 (01-16)
- Added information about LDPE 2 releasing satellites in January 2023, August 2024, and June 2025 (01-16)
- Updated the status of Victus Haze, corrected the mission of Victus Sugo, and added the contract for Victus Sol (01-16)
- Created a section on Golden Dome, tracking what is known about its timeline and architecture, as well as what it may cost (01-17)
- Added information from the 2025 American Physical Society about boost phase intercept (01-19)
- Updated the number of Aegis BMD-capable ships the MDA is planning to have (01-25)

- Added details about the CCS jamming systems' customers and how its follow-on, Meadowlands, is supposed to be an improvement; also added information about the fielding of Meadowlands and how it has been approved to be sold to close US allies (01-29)
- Added the USSF announcement that it is fielding a tactical EW center (01-30)
- Updated the state of the OCX system (01-32)
- Added information about US work on a space-based chemical laser, the Zenith system, during the SDIO era (01-36)
- Added information about the Ground-based Optical Sensors (GBOSS) system (01-40)
- Updated the current state of the DARC radar program (01-41)
- Added information about the follow-on program to SILENT BARKER (01-42)
- Added JCO's reorganization (01-44)
- Discussed President Trump's December 2025 executive order, "Ensuring Space Superiority" (01-46)
- Added the USSF's capstone operations document, Space Force Doctrine Document (SFDD)-1 (01-53)
- Added the USSF's Warfighting Framework (01-53)
- Added the USSF's International Partnership Strategy (01-53)
- Added a GAO report on difficulties DoD has been having in working with partners and allies in space (01-54)
- Added the USSF's "Vector 2025" guidance (01-54)
- Added the USSF's new taxonomy for its systems (01-54)
- Discussed what is known about the USSF's "Objective Force 2025" roadmap (01-54)
- Added President Trump's decision to move SPACECOM's headquarters to Huntsville, Alabama (01-56)
- Added the standing up of US Space Forces Southern and US Space Forces Northern (01-56)
- Updated Operation Olympic Defender's name to reflect it is now called Multi-National Force-OOD (01-57)
- Updated the number of Guardians in the USSF (01-57)
- Discussed the current state of Space Futures Command (01-58)
- Added the launch of a satellite for live training by the USSF and the increase in budget for its testing program (01-58)
- Added the creation of the Space Intelligence Production Center (01-59)
- Tracked changes to the possibility of a Space National Guard (01-60)
- Added the Army's addition of a space career track for enlisted soldiers and work on a space policy (01-60)
- Added information on counterspace budget requests and OMB reportedly holding back some funding relevant to military space (01-62)
- Updated information on the annual Schriever wargame and added Global Sentinel and Resolute Space (01-62)

02 – Russia /

- Updated amount of debris created by historical Russian co-orbital tests and corrected information about three of the tests (02-03)
- Added information about Cosmos 2558 and Object C conducting RPOs in the summer of 2025 (02-11)
- Added information about the launch of Cosmos 2581, Cosmos 2582, and Cosmos 2583; the release of Object F; and the RPOs conducted by this group with each other throughout 2025 (02-12)
- Added information about Luch's close approach in spring 2019 to TJS-3 and its apogee kick motor (02-13)
- Detailed the end of Luch's life (02-13)
- Updated the table of recent Russian RPOs (02-15)
- Added information about Cosmos 2588 and how it is thought to possibly be part of Russia's Nivelir program (02-16)
- Added information about Cosmos 2589, its release of Cosmos 2590, and their RPOs during the second half of 2025 (02-17)
- Updated the status of the S-500 (02-25)
- Updated incidents of GNSS interference thought to originate in Russia and added information about the resolution the ICAO passed censuring Russia for doing so (02-30)
- Added a Russian submission to the ITU that it believed Western satellites being used by the Ukrainian military to be "legitimate targets" (02-30)
- Added how the GPS jamming over Ukraine may be affecting some satellites (02-30)
- Added how a "mass AIS interference event" occurred in the Baltic in November (02-31)
- Added Russian possible use of Starlink for communications and efforts taken by Ukraine and SpaceX to prevent that from happening (02-31)
- Added information about Russia's Murmansk-BN jammer (02-32)
- Discussed incidents where broadcasting satellites were having their transmissions jammed from Russian territory (02-32)
- Added details about Russia's Krasukha-4 mobile electronic warfare system (02-33)
- Added details about Russia's Airborne Laser ASAT System and how Ukrainian drones attacked a Russian airbase and very likely destroyed an aircraft from that program (02-36)
- Added details about the one flight of Russia's space-based laser system (02-38)
- Moved the discussion of Russia's possible nuclear ASAT into the DEW section and updated information about tumbling of Cosmos 2553, thought to be related to this program, as well as a discussion of the possible effects and military utility of a nuclear ASAT (02-39)
- Added information about Ukrainian drones destroying the RT-70 radio telescope (02-42)
- Added information about Russian drones using GLONASS for navigation and targeting (02-45)
- Updated Russian thinking about conflict in space (02-46)

03 – China /

- Added information about SJ-6 05A and SJ-6 05 conducting RPOs in 2022 (03-05)
- Added Kristin Burke’s analysis of the SJ-6 series’ RPOs in 2024 and how they were more of an expansion of activities than new capabilities (03-05)
- Changed the reference to the Chinese spaceplane from the Shenlong to the Chinese Reusable Experimental Spacecraft (03-06)
- Added information about Chinese perceptions about the X-37B (03-06)
- Added information about the only known photo of the Chinese spaceplane (03-06)
- Added information about transmissions from an object from the first flight of the Chinese Reusable Experimental Spacecraft (03-06)
- Added information about the length of time between the flights of the Chinese Reusable Experimental Spacecraft (03-08)
- Added the 4th flight of the Chinese Reusable Experimental Spacecraft and a table comparing all the flights (03-08)
- Added details about the SY-12 02 conducting an RPO with USA 336 in September 2025 (03-12)
- Tracked the RPOs, docking, and un-docking of SJ-21 and SJ-25 throughout 2025 (03-12)
- Added the launches of TJS-15 and TJS-17 and how each appeared to have released an apogee kick motor (03-14)
- Added the launches of SY32-01, SY32-02, and SY32-03, and how SY32-02 released Object E (03-14)
- Updated the table of recent Chinese RPOs (03-14)
- Discussed the military utility of China’s possible refueling exercise (03-17)
- Added China’s new missile interceptor that is thought to possibly have ASAT capabilities, the HQ-29 (03-22)
- Added a Chinese research paper that discussed how airborne platforms might be used to jam Starlink (03-24)
- Discussed a GNSS interference event that Nanjing, China, experienced in December 2025 (03-24)
- Added information about USSF assessments of China’s timeline to develop ground-based lasers that could harm satellites (03-27)
- Added a paper published by Chinese researchers about how a near-space nuclear detonation could impact satellites (03-27)
- Added USSF statement that implies China may have space-based DEW (03-28)
- Added information about how Chinese researchers reported they were able to make a driver for a high powered microwave (HPM) weapon (03-28)
- Updated information about China’s ship- and ground-based TT&C (03-30)
- Added information about two new space-based SSA constellations (03-32)
- Discussed the white paper the Chinese Foreign Ministry released on arms control, disarmament, and non-proliferation (03-34)
- Added a paper analyzing Chinese thinking on the use of force in space (03-36)
- Added information about the PLA shuffling around responsibilities for information support and mission assurance (03-37)

- Added a statement by a US official about China positioning its ASAT capabilities while running exercises (03-38)

04 – India /

- Added information about new facility for testing landing gear of the Pushpak (04-01)
- Added information on ISRO docking demonstration (04-01)
- Added information on Indian government's potential development of "bodyguard" satellites (04-01)
- Updated information on Indian Ballistic Missile Defense System, specifically Phase-III (04-03)
- Updated timeline information on India buying S-400 Triumf surface-to-air missile systems from Russia (04-03)
- Updated information on the development of the Satish Dhawan Space Centre and the scheduled opening of the Kulasekarapattinam Spaceport in Tamil Nadu (04-05)
- Added information on GNSS interference occurring in the India-Pakistani border region and around various Indian airports (04-05)
- Added information about various military DEW (none that can range space targets) (04-06)
- Added information about the DURGA Mk-II (A) test in April 2025 (04-06)
- Added information regarding ISRO's new radar facility and other SSA investments (04-07)
- Added information about Memoranda of Understanding signed between DDRO and DST (04-07)
- Added information about the release of India's Joint Military Space Doctrine (04-09)
- Updated the status of the NavIC system (04-09)
- Updated information about Indian participation in Global Sentinel (04-09)

05 – Orbital Debris Created by ASAT Testing in Space /

- Updated the amount of debris created and still in orbit from ASAT testing in space (05-01)

06 – Australia /

- Added information on Australian attitudes towards expanding AUKUS pillars to include space technology (06-01)
- Added information on Australian Defence Force's Exercise Pitch Black 24 (06-02)
- Added details on the Space Threat Analysis and Response System (06-02)
- Updated status of Deep Space Advanced Radar Capability program (06-02)
- Updated information on changes the Australian Department of Defence made to align with its Defence Strategic Review (06-05)

- Added information about the update of the National Defence Strategy and how it has been taken off-line in the process (06-05)
- Added information on what is known about the Australian space operations framework, SELENE (06-05)
- Added information about Australia's participation in Global Sentinel (06-05)
- Added information on increase in space oriented roles within the Australian Defence Force (06-05)

07 – France /

- Added President Macron's statement that France will deploy "patrol" satellites in 2027, to be complemented by space-based lasers and jammers (07-02)
- Updated that Dark, the company that had been slated to work France's Salazar study, has closed (07-02)
- Added information about interest in and planned French spaceplane programs (07-03)
- Added information about two French-United States RPO missions (07-03)
- Added details about work on ground-based lasers that could potentially reach space systems (07-04)
- Added information about France's participation in and hosting of NATO's Space Centre of Excellence in Toulouse (07-05)
- Added information on Infinite Orbits winning a contract to create a GEO inspection and monitoring service for the French Space Command (07-07)
- Added information about the LEO space surveillance radar system, AURORE (07-07)
- Discussed France's National Space Strategy, released in November 2025 (07-09)
- Added President Macron's €4.2 billion pledge towards military space activities (07-10)
- Updated details on the ASTERX exercise (07-10)
- Added information on French participation in the 17th iteration of the Schriever Wargame in August 2025 (07-11)
- Added French participation in US Space Command's Global Sentinel 2025 (07-11)
- Added information on collaboration between France and South Korea on defensive space cooperation (07-11)
- Added information about the DGA's Space Pact (07-11)

08 – Germany /

- All new content (08-01)

09 – Iran /

- Added the test history of the Safir launch vehicle (09-02)
- Added information on launch failures Iran had in January and February 2019 (09-02)
- Added information about the July 2025 sub-orbital test of the Qassed (09-04)

- Added information about Russian launches of satellites for Iran (09-05)
- Added information about Iran possibly having the Russian Krasukha-4 and Murmansk-BN EW jamming systems and details about Iran's Cobra-V8 EW jammer (09-07)
- Detailed Iran's GNSS jamming areas over Tehran in June 2025 and the effects on ships going through the Strait of Hormuz (09-08)
- Added information about Iran spoofing Starlink terminals in January 2026 (09-08)
- Added information about hacktivist spoofing of the Iranian state broadcaster in January 2026 (09-08)
- Added information about Iran's participation in APOSOS (09-09)
- Added a statement by President Pezeshkian about Iran's space program (09-09)

10 – Israel /

- Added details about potential engagement of Israel in US Golden Dome program (10-01)
- Added information on aircraft navigation interference in the Mediterranean, reportedly by Israeli EW systems (10-01)
- Added information from ITU Meeting on harmful interference reports by Israel's GNSS interference (10-02)
- Added information on the deployment of high-power laser by the Israeli Air Force Aerial Defense Array (10-03)
- Updated information on Iron Beam Laser Air Defense System, which was declared operational in late 2025 (10-03)
- Added information on Israel's engagement in Global Sentinel (10-04)
- Added information about Israel's current position on the development of space-based capabilities against Iran (10-04)

11 – Japan /

- Added information about Japan's defense space budget request and the publication by the Ministry of Defense of guidelines for space domain defense (11-01)
- Added information on a program to develop "bodyguard satellites" (11-01)
- Added information about the SAKURA SSA analysis system (11-02)
- Added information about the cancelled launch of the second QZSS payload (11-03)
- Added updates on ASDF Space Operations Group mission (11-04)
- Added information about participation in Global Sentinel (11-04)

12 – North Korea /

- Added information on a near collision between a Malaysian satellite and North Korean satellite (12-02)
- Added details on GPS disruptions and interferences reported by South Korean civil and military entities (12-06)

- Added ICAO Assembly condemnation of GNSS interference originating from North Korea (12-06)
- Added information on revisions to Space Development Law and associated military space policy initiatives (12-07)
- Updated information on the expansion and modernization of the Sohae launch complex and Thaesong Machine Factory (12-08)

13 – South Korea /

- Updated information on US launches of a synthetic aperture radar satellite series for South Korea (13-02)
- Added information about South Korean military space spending (13-04)
- Added information about participation in Global Sentinel and Polaris Hammer - Korea exercises (13-04)

14 – The United Kingdom /

- Added information on the United States-United Kingdom RPO maneuver in September 2025 (14-01)
- Added two images of United States-United Kingdom RPO maneuver in September 2025 (14-01)
- Added information on UK's Cross-Government Space Domain Awareness Requirements of 2024 (14-03)
- Updated information on Deep Space Advanced Radar Capability program (14-03)
- Added information about UKSA-MoD meetings on threats to space systems in 2024 (14-05)
- Added information regarding United Kingdom participation in Global Sentinel (14-05)
- Added information on the United Kingdom's space posture in its 2025 Strategic Defense Review (14-05)

15 – Cyber /

- Added US Department of Defense confirmation of interconnected nature between military space and the commercial sector, in the context of cyberattacks and the Defense Industrial Base (15-02)
- Updated discussion of importance of cyberspace capabilities, adding that the "number one concern is cyber" from a military perspective (15-02)
- Added information about how AI can help and hinder space cybersecurity (15-03)
- Added research on how many GEO satellites are not encrypting their data (15-03)
- Added details about hacking cases interfering with NASA satellites between 2007 and 2011 (15-04)
- Added information on a GAO report highlighting NASA's failure to fully implement all steps of its cybersecurity risk management program (15-05)
- Added details about the Polish Space Agency's detection of unauthorized access within its IT infrastructure (15-05)

- Added information on cyberattacks targeting the European Space Agency between 2024 through 2026 (15-06)
- Updated information on timing of deployment of malware by Russia in Ukraine (15-06)
- Added information on SpaceX's "bug bounty" program, created in 2022 (15-07)
- Updated information on Ukrainian involvement in Dozor-Teleport cyberattack (15-08)
- Added research regarding use of open source software to attack in-orbit satellites with ransomware (15-10)
- Added information on "Orbitshade" malware's potential to directly interfere with satellite on-board systems (15-10)
- Added details about US Cyber Command's cyberattack during the first Trump administration against the Wagner Group (15-10)
- Added research concluding that 161 cyber operations had been aimed at space between 2022 and 2025, in the context of the Russian-Ukrainian War (15-11)
- Added more details of a CIA document that says China is working to develop cyber capabilities against satellites (15-12)
- Added information on North Korean view that cyber capabilities can provide it with an asymmetric advantage (15-12)
- Added details of North Korean "Lazarus Group" conducting cyber operations against aerospace and defense companies (15-13)