

AEROSPACE AND RELATED TECHNOLOGIES UPDATE – SPRING 2020

To Our Clients and Friends:

This May 2020 edition of Gibson Dunn’s Aerospace and Related Technologies Update discusses newsworthy developments, trends, and key decisions from 2019 and early 2020, including the impact of COVID-19, that are of interest to companies in the aerospace, defense, satellite, and drone sectors as well as the financial, technological, and other institutions that support them.

This update addresses the following subjects: (1) commercial unmanned aircraft systems (“UAS”), or drones; (2) the commercial space sector; and (3) recent government contracts decisions involving companies in the aerospace and defense industry.

Table of Contents

I. Unmanned Aircraft Systems

- A. Expanding Drone Applications During a Global Pandemic
- B. UAS Integration Pilot Program (IPP) and Advancements in Drone Delivery
- C. FAA Proposes Remote Identification Requirement for Drones
- D. Continued Uncertainty Surrounding Low-Altitude Airspace
- E. Proposed Rules for Operations at Night and Over People
- F. New Regulations for Hobbyists

II. Space

- A. Space Agencies Around the World Seek Major Milestones
- B. NASA Embraces Partnerships with the Commercial Market
- C. Creation of Space Force
- D. Internet Satellites
- E. A Year of Serious Investment in Space

III. Government Contracts

- A. Armed Services Board of Contract Appeals Cases
- B. Civilian Board of Contract Appeals Cases

C. Court of Federal Claims Cases
D. Federal Circuit Court of Appeals Cases

I. Unmanned Aircraft Systems

A. Expanding Drone Applications During a Global Pandemic

As discussed below, and in prior yearly updates, many corporations have been exploring the use of drones to perform delivery services. The global COVID-19 pandemic, however, may result in an explosion of demand for drone delivery and other drone applications.

With people across the country quarantined, the concept of drone delivery of essential supplies has never been more appealing. For many, a trip to the grocery store, pharmacy, or doctor’s office can be life threatening due to the risk of contracting or spreading COVID-19. Under these circumstances, having medications delivered by drone or medical tests flown to a lab—all without the need for social interaction—could be lifesaving.

To date, however, government rules and regulations in the United States have prohibited the majority of drone deliveries other than in experimental programs. Although government approval of drone delivery progressed in 2019, the steps were incremental. We expect that the pandemic will provide new context for lawmakers and regulators to consider policy that permits and even promotes commercial drone delivery, and prompt the adoption of policies that will allow drone delivery to become an essential function.

Governments around the world are using drones amid the COVID-19 crisis in a variety of novel ways to reduce risk to their constituents and government employees. Within a quarantined society, drones are able to go places, see things, and carry items without violating a shelter-in-place order. And drones can also provide safe ways for governments to monitor citizens’ compliance with quarantine rules. COVID-19 has ushered in a new era of drone applications.

In China, drones have become an important tool in managing the pandemic. Drone mapping software and thermal sensors have been adapted to address disease detection and assist with crowd management.[1] Drones used for spraying crops have been repurposed to spray disinfectant across large areas, which allows for much faster spraying, less human risk, and coverage in locations beyond human reach. Drones have also been modified to carry loudspeakers and flood lights to enforce quarantines without putting government employees at risk. In addition, drones have transported medical equipment when traditional transportation was not practical.[2] Beyond China, other countries, including Spain, Kuwait, and the UAE, have used drones to help impose quarantines.[3]

In the United States, although drones have not yet been widely adopted in response to COVID-19 as noted above, there are several reports of their limited use. For example, the city of Elizabeth, New Jersey has been using drones equipped with sirens and speakers as a tool to enforce social distancing.[4] Unofficial drones from a self-proclaimed “Anti-COVID-19 Volunteer Drone Task Force” have been

spotted in Manhattan making announcements for people to maintain proper social distancing.[5] And in Connecticut, Draganfly and the Westport Police Department are conducting “pandemic drone” test flights with technologies reportedly capable of detecting temperature, heart and respiratory rates, as well as detecting sneezing and coughing in crowds from a distance of 190 feet.[6] Due to potential privacy concerns, the Westport Police Department said that the drones will not go into private yards and do not employ facial recognition technology.[7]

As the COVID-19 consequences extend, United States localities may increase their drone usage for managing various aspects of the crisis in line with other countries. The continued use of drones in innovative ways during the COVID-19 crisis will likely increase public support for commercial drones and may lead to more favorable regulations. In a few short years we expect that this technology will have transformed from a novelty into an essential tool for responding to pandemics and similar crises.

B. UAS Integration Pilot Program (IPP) and Advancements in Drone Delivery

The Unmanned Aircraft Systems Integration Pilot Program (“IPP”) was created in 2017 to form the basis of a new regulatory framework to safely integrate drones into the national airspace.[8] The IPP seeks to balance the “benefits of innovation” against “the need to protect national security, public safety, critical infrastructure and the [National Airspace System].”[9] The IPP operates through unique private/public partnerships at a local level, and in 2018, the Federal Aviation Administration (“FAA”) selected 10 localities to be part of the pilot program.[10]

These 10 localities achieved multiple firsts during 2019, several of which are highlighted below, leading to advancements in police use of drones as well as drone delivery.

In March 2019, the FAA granted the Chula Vista, California Police Department a Certificate of Authorization (“COA”) which allows the operation of drones beyond visual line of sight up to three miles in any direction from the launch site.[11] This was the first time that the FAA issued a COA with a “beyond visual line of sight” provision for public safety. The Chula Vista Police Department plans to use the COA as a means for enabling drones to arrive on emergency scenes to gather information prior to putting first responders in harm’s way.[12]

In addition to the IPP-enhancing applications for public safety, test data from the Virginia, North Carolina, and San Diego IPPs resulted in the FAA opening the door for certain companies to begin commercial drone deliveries.

In April 2019, Wing, the drone-delivery unit of Alphabet, secured the first Part 135 Air Carrier Certification ever issued to a drone company.[13] In reliance upon test data from its involvement in the Virginia IPP, Wing was granted approval to carry and deliver packages commercially in parts of southwest Virginia, and obtained limited approval to fly drones over people and beyond the visual line of sight. Customer deliveries in Christiansburg, Virginia began in October 2019.[14]

In June 2019, the FAA issued a Special Airworthiness Certificate to Amazon Prime Air, which allows it to research and test one of its unmanned platforms for delivery. Amazon is waiting to obtain a Part 135 certificate. Further, Uber also recently confirmed that it applied for a Part 135 Certificate for drone

delivery, and it made several test deliveries to San Diego State University as part of the San Diego IPP.[15] In October 2019, UPS, based on data from the North Carolina IPP, obtained for its subsidiary, Flight Forward, a full Part 135 Standard certification to operate a drone airline, including beyond visual line of sight.[16] UPS's first flight transported medical samples to testing labs—an application particularly useful during a global pandemic—and UPS Flight Forward is now routinely using drones to deliver medical lab material across a large medical complex.[17]

C. FAA Proposes Remote Identification Requirement for Drones

On December 31, 2019, the FAA published its long-awaited proposed rule that would create a system to track and manage every UAS flight by requiring remote identification of UAS within United States airspace.[18] The proposed rule would tie the existing registration requirements[19] to the new remote identification requirements by requiring nearly all UAS to connect to a “remote ID service” network to be managed by private companies.[20] Among the chief benefits cited by the FAA are improved situational awareness for other aircraft in the vicinity and the potential for UAS operations over people, at night, and beyond the operators' visual line of sight—operations that are not currently allowed without an exception, and for which the FAA has made clear that remote identification would be a prerequisite.[21]

Under the proposed rule, UAS operating in domestic airspace would be divided into three classifications:

- *Standard remote identification* – UAS capable of both connecting to the internet *and* broadcasting directly from the UAS.[22]
- *Limited remote identification* – UAS capable of connecting to the internet but not broadcasting directly from the UAS. These UAS will be limited to operations within the operators' visual line of sight.[23]
- *No remote identification* – UAS without remote identification equipment will be permitted to operate only in FAA-recognized identification areas and within visual line of sight of the operator. The first of these areas to be approved will likely be in locations where traditional radio-controlled model aircraft are regularly flown.[24]

The FAA envisions that the “vast majority” of UAS will be either standard or limited remote identification UAS, while the residual category will apply to amateur-built aircraft and UAS manufactured prior to the effective date of the proposed rule.[25]

Public reaction to the proposed rule has been decidedly negative, with many commenters voicing concerns about privacy and financial costs.[26] More than 52,000 public comments were submitted by the March 2, 2020 deadline.[27] One critic notes that private suppliers would be able to charge annual subscription fees and decries the fact that the proposed rule would ground thousands of UAS that are incapable of connecting to the internet.[28] As an alternative, this critic suggests that UAS utilize existing broadcast technologies for remote identification such as Wi-Fi and Bluetooth, which would arguably be just as effective, free, and cut out the need for any middlemen.[29] Another commenter notes the proposed rule would likely end his UAS mapping business.[30]

The National Business Aviation Association (“NBAA”) welcomed the proposed rule and commended the FAA for taking the initiative to require remote UAS identification.^[31] NBAA’s Doug Carr characterized the proposed rule as “a foundational document for moving forward with integrating not just UAS, but other emerging technologies, in a way that addresses our industry’s collective safety, security and other objectives.” The NBAA thanked the FAA for issuing its proposed rule and stated that it “look[s] forward to working with the FAA and other stakeholders to secure its adoption.”^[32] The Aircraft Owners and Pilots Association has withheld judgment and indicated that its analysis is ongoing and a statement of position will be forthcoming.^[33]

For its part, the FAA believes its proposal, though more costly, is also “more complete” than broadcast-only alternatives.^[34]

D. Continued Uncertainty Surrounding Low-Altitude Airspace

It has been almost four years since comprehensive regulations for drones weighing 55 pounds or less became law under Part 107 of Title 14 of the Code of Federal Regulations. Although Part 107 created a federal regulatory framework for commercial drone operations, there is still significant confusion as to what constitutes a legal flight under evolving state and local laws. Although the industry has continued to advance, little progress has been made in clarifying who controls low-altitude airspace. It remains unclear as to how much, if any, airspace is owned by private landowners and whether states and municipalities have any jurisdiction over low-altitude airspace.

The confusion stems from the FAA-deemed “myth” that the FAA does not control airspace below 400 feet in light of its position that it controls the airspace “from the ground up.”^[35] However, many state and local governments, as well as property owners, do not agree with the FAA’s interpretation. The starting point of federal airspace has many implications, and the question ultimately will be settled in the federal courts. To date, this boundary has not been directly addressed by a court in the context of drones. The closest that federal courts have come to addressing this issue was in July 2016 when U.S. District Judge Jeffrey Meyer, of the District of Connecticut, provided dicta in one opinion. In that case, Judge Meyer questioned the FAA’s position: “[T]he FAA believes it has regulatory sovereignty over every cubic inch of outdoor air in the United States [T]hat ambition may be difficult to reconcile with the terms of the FAA’s statute that refer to ‘navigable airspace.’”^[36] The dicta addressed the question of where the FAA’s authority begins, but noted that the “case does not yet require an answer to that question.”^[37] In time, a case will require such an answer. Without clarification, legal compliance and enforcement will be uncertain in most areas and may be impossible within some localities. This legal uncertainty remains one of the most significant barriers to large-scale commercial operations.

While the federal courts provide little guidance on this issue, a Michigan state court has begun to address conflicting state and local drone laws. In February 2020, the court issued an injunction that prevents a Michigan county from enforcing an ordinance restricting drone operations. The injunction stemmed from a lawsuit challenging, on grounds of state law preemption, a local law prohibiting drone use in county parks. The lawsuit, *MCDO v. Genesee County*, stems from an incident in which county officials arrested a drone operator for allegedly violating the park rules, which the county interpreted to prohibit drone operations.^[38] The county later updated the rules to specifically prohibit drone flights. Michigan’s

Unmanned Aircraft Systems Act, however, states: “Except as expressly authorized by statute, a political subdivision shall not enact or enforce an ordinance or resolution that regulates the ownership or operation of unmanned aircraft or otherwise engage in the regulation of the ownership or operation of unmanned aircraft.”^[39] Contrary to the county’s rules, Michigan’s Act expressly permits FAA-authorized drone pilots to operate within the state.

The plaintiff in *MCDO v. Genesee County* sought, in part, a declaratory judgment that the park rule is void and unenforceable as preempted by state law. After reviewing written submissions and hearing oral arguments, the court issued an interim order on November 26, 2019 in which it ordered the parties to supplement their positions and temporarily enjoined the county from enforcing any ordinance involving drones.^[40] In February 2020, the Court found that the county’s rule was improper and issued an injunction prohibiting the county from enforcing any ban on the possession, use, or operation of drones. Although this lawsuit may bring some clarity surrounding state law preemption of local laws, it does not address the issue of federal preemption or ownership of low-altitude airspace.

Similar cases will likely arise throughout various states as the drone industry continues to move forward. Beyond state law preemption issues, the courts will eventually be required to address issues concerning federal preemption of state and local airspace laws and the boundaries of low-altitude airspace over private land.

Legal clarity is essential for large-scale commercial operations. Resolution of these issues is not only relevant for many states with similar laws, but it is also vital for an industry facing many legal uncertainties.

E. Proposed Rules for Operations at Night and Over People

Part 107 of the FAA regulations covers a broad spectrum of uses for small UAS weighing less than 55 pounds.^[41] Currently, operations occurring at night and operations occurring over people each require a waiver. In an effort to mitigate safety risks while not inhibiting commercial and technological advancements, in early 2019, the FAA and the Department of Transportation shared a Notice of Proposed Rule Making (“NPRM”) proposing alterations to Part 107 to make operation of small unmanned aircrafts over people and at night legal, under certain circumstances, without a waiver.^[42] The NPRM states that this proposed rule is part of the FAA’s “incremental approach to integrat[e] [small unmanned aircraft] into the national airspace system.”^[43] Comments on the NPRM were due April 15, 2019.^[44]

The proposed rule regarding operation of drones over people separates operations into three categories.^[45] Category 1 is the most lenient category and covers UAS under 0.55 pounds. Category 1 operations can occur over people due to the fact that such light UAS “pose a low risk of injury.” Because Category 1 only covers extremely light UAS, usages in this Category will most likely be limited to photography and videography.

Categories 2 and 3 cover UAS greater than 0.55 pounds. These categories allow UAS to be flown over people only if the manufacturer has proven that a resulting injury to a person would be under a specified severity threshold. Category 2 aircraft will need to demonstrate a certain injury threshold, and Category 3 aircraft will have a higher injury threshold with additional operating limitations.^[46] To compensate for

the higher potential injury of a Category 3 flight, operations falling into Category 3 cannot occur over open-air assemblies of people, operations must take place over closed or restricted access sites, and the UAS may not hover over people. For both Category 2 and Category 3, the UAS may not have any exposed rotating parts that could result in skin laceration. The rule has not yet gone into effect, but the FAA predicts a number of operations taking place within Categories 2 and 3 will occur. These operations could include rescue and emergency response efforts, newsgathering, wildlife tracking, and filming large events.

Regarding drone operations at night, the proposed rule would allow remote pilots, with certain qualifications, to fly at night without a waiver. Specifically, pilots must take and pass an updated knowledge test or participate in a training on night operations, and pilots must equip their UAS with anti-collision lights visible for a minimum of three miles.[47]

As noted, the new rules have not been enacted. In the interim, the FAA issued its first Part 107 waiver to the Hensel Phelps Construction Company of Greeley, Colorado, which allows the company to operate a parachute-equipped drone over people.[48] The FAA stated this marked “the first time the FAA has collaborated with industry in developing a publicly available standard, worked with an applicant to ensure the testing and data collected acceptably met the standard, and issued a waiver using an industry standard as a basis to determine that a proposed [small unmanned aircraft] operation can be safely conducted under the terms and conditions of a waiver under Part 107.”[49] The FAA confirmed that this same process is “available to other applicants who propose to use the same drone and parachute combination.”[50]

F. New Regulations for Hobbyists

This past year also brought new rules for recreational “hobbyist” drone pilots. The FAA published new rules to the Federal Register in May 2019, which included two significant changes.

First, recreational pilots are now required to pass a knowledge test and carry proof of passage while flying. The test is still in development, and the details of its contents have not yet been publicly shared. Second, the previously applicable “five-mile rule” regarding hobbyist operations near airports is no longer in effect. Whereas the old rule simply required hobbyist operators to “[p]rovide prior notification to the airport and air traffic control tower, if one is present, when flying within 5 miles of an airport” (no paperwork or approval was required), the new rules require hobbyists to actually obtain airspace authorization from the FAA prior to any operations within five miles of an airport.[51]

II. Space

A. Space Agencies Around the World Seek Major Milestones

The United States is once again looking toward the Moon. As 2019 marked the 50th anniversary of the Apollo 11 moon landing, NASA announced its new Moon program: Artemis.[52] Artemis will proceed under a two-phase program: Phase 1 will land astronauts on the Moon by 2024, and Phase 2 will establish a sustained human presence on the Moon by 2028.[53]

GIBSON DUNN

In addition to announcing its lunar ambitions, NASA astronauts Christina Koch and Jessica Meir performed the first all-female spacewalk on October 18, 2019, and Koch also completed the longest ever spaceflight by a woman after spending nearly 11 months in orbit.^[54] Koch's record-setting spaceflight provides researchers the opportunity to study the effects of long-duration spaceflight on a woman in support of NASA's plans to send astronauts to the moon and Mars.^[55]

2019 also saw China successfully execute a soft landing on the far side of the Moon. China's fourth moon probe, Chang'e-4, landed on the far side of the Moon at the Von Kármán crater on January 3, 2019.^[56] Landing on the far side of the Moon is a historically difficult mission: the relative positioning of the probe, Moon, and Earth results in the Moon blocking signals between the craft and the Earth. China mitigated this challenge by first launching a relay satellite into lunar orbit which enabled the craft to maintain communications from any point on the lunar surface.^[57]

Israel and India were less successful in seeking their respective 2019 milestones. In April 2019, Israel's Beresheet spacecraft—built by SpaceIL and Israel Aerospace in a privately funded mission—crashed into the lunar surface after an apparent failure of its main engine.^[58] In September 2019, India's Vikram moon lander crashed into the lunar surface after experiencing issues with its braking rockets.^[59] India, however, still made space history in 2019 when it fired a ground-based anti-satellite missile and struck an unidentified Indian satellite in low Earth Orbit.^[60] India's March 27, 2019 test, dubbed "Mission Shakti," made India the fourth country (after the United States, Russia, and China) to test anti-satellite missile capability.^[61]

Japan ventured into new territory as well when its asteroid-sampling Hayabusa-2 spacecraft fired a bullet into the Ryugu asteroid's surface and "bombed" the asteroid with a plastic explosive in order to collect samples from below the surface.^[62] After spending more than a year on the asteroid, Hayabusa-2 began its long journey home in November 2019.^[63]

Most recently, Iran's Islamic Revolutionary Guard Corps claimed it put a military satellite into orbit for the first time this April.^[64] According to the Revolutionary Guard, the "Noor" satellite reached an orbit of 265 miles (425 kilometers) above the Earth's surface. The launch of Iran's "Noor" satellite has not been independently confirmed at the time of publication.^[65] If confirmed, the news will be concerning to nations that worry such space launches would enable Iran to develop intercontinental ballistic missiles.^[66]

B. NASA Embraces Partnerships with the Commercial Market

The past year marked an expansion in NASA's embrace of the commercial space industry. In 2019, NASA announced its first partnerships with commercial businesses to provide payload services in connection with the agency's Artemis lunar program.^[67] Fourteen companies have now been selected to provide these services.^[68] These companies will fly NASA's payloads, primarily scientific instruments, to designated locations on the Moon.^[69]

The first commercial transport of NASA astronauts to the International Space Station is expected this year after significant milestones were achieved in 2019. In March 2019, Elon Musk's Space Exploration Technologies Corp. ("SpaceX") launched its first unmanned demonstration flight of its Dragon

GIBSON DUNN

spacecraft, which will carry out the mission.[70] The Dragon autonomously docked with the International Space Station, becoming the first American spacecraft to successfully do so.[71] The Dragon flight is scheduled to transport its first NASA astronauts to the Space Station on May 27.[72] NASA and SpaceX have not yet announced any change in schedule due to the COVID-19 pandemic. If all goes as planned, the May flight will mark the first time that a private commercial spacecraft will transport NASA astronauts to the Space Station and additionally marks the end of NASA’s nearly decade-long reliance on Russia’s Soyuz spacecraft for transport. The process of building commercial craft for crew transport has been in the works since 2014 when NASA selected SpaceX and Boeing for the project.[73]

One of 2019’s biggest announcements in the space tourism sector also came from NASA: the agency will now allow private citizens to use the Space Station.[74] Bigelow Space Operations, the service subsidiary of Bigelow Aerospace, and Axiom Space are two companies already arranging trips for passengers.[75] These companies will have to pay NASA approximately \$35,000 a night per passenger to use the Space Station’s amenities.[76] Consumers, however, can expect to pay significantly more—seats are currently running for upwards of \$50 million.[77] While Axiom Space officials expect that a flight could take off as soon as the second half of 2021, the effect of closures and layoffs due to COVID-19 may impact these companies’ ambitions.[78]

NASA’s opening of the Space Station to private tourism is just one of several new policies designed to bring business to space. Last year, NASA began seeking proposals from private companies interested in providing a habitable commercial module to be attached to the Space Station.[79] The project was awarded to Axiom Space in February.[80] The next steps will involve Axiom Space and NASA negotiating a contract with the goal of completing the project by 2024.[81]

Other companies are also likely to take advantage of NASA’s new initiatives. Virgin Galactic and Blue Origin, LLC are two such companies that have made serious progress toward orbital and suborbital commercial flight in the past year. Last February, Virgin Galactic conducted its second successful manned space flight.[82] Company officials are optimistic that commercial flights will begin in the near future.[83] In December, Blue Origin completed its 12th unmanned test flight of its suborbital New Shepard spacecraft, but has not yet put any people aboard.[84] It has not yet announced when it would start flying passengers.[85]

C. Creation of Space Force

The United States Space Force was established on December 20, 2019 with the enactment of the National Defense Authorization Act for Fiscal Year 2020 (“NDAA”). The Space Force is now the sixth branch of the United States military, and the first new military service in more than 70 years.[86] Its duties are to “(1) protect the interests of the United States in space; (2) deter aggression in, from, and to space; and (3) conduct space operations.”[87]

The NDAA redesignated the Air Force Space Command (“AFSPC”), established in 1982, as the Space Force in an initial step to establish this new service.[88] AFSPC had a core mission of space operations focused on “missile warning, launch operations, satellite control, space surveillance and command and

GIBSON DUNN

control.”^[89] The Space Force will continue this mission and is additionally charged with safeguarding United States space systems, such as satellites.^[90]

Structurally, the Space Force is organized within the Department of the Air Force, in an arrangement similar to that of the Marine Corps within the Department of the Navy.^[91] Accordingly, the Secretary of the Air Force, currently Barbara M. Barrett, has overall responsibility for the Space Force.^[92] The Space Force’s highest-ranking military leader, Chief of Space Operations, is General John W. Raymond.^[93] Pursuant to the NDAA, in December 2020, one year after the enactment of the NDAA, the Chief of Space Operations shall become a member of the Joint Chiefs of Staff, further elevating this new position.^[94]

Congress approved \$40 million for Space Force operations and maintenance in fiscal year 2020 appropriations, about \$32 million less than the amount requested by the Trump administration.^[95] However, this diminutive amount, representing just 0.0054% of the total defense budget authorized in the NDAA, is likely far from the true cost of implementing the Space Force and not indicative of its budget at full capacity. Previously, in May 2019, the Congressional Budget Office estimated that a new space service within the Department of the Air Force would cost about \$1.3 billion annually and approximately \$1.1 billion to \$3 billion in one-time set up costs.^[96] Thus, the actual costs for the Space Force should become clearer in the coming years as the Department of Defense requests appropriations.

Congress directed the Secretary of the Air Force to implement the Space Force provisions by no later than 18 months after enactment of the NDAA.^[97] Congress also required that no later than 60 days after the enactment of the NDAA, and every 60 days thereafter until March 31, 2023, the Secretary of the Air Force and the Chief of Space Operations jointly provide briefing on the status of implementing the Space Force to congressional defense committees.^[98] In so doing, Congress seemingly recognized that the Space Force will likely take years to become fully functional.

The establishment of the Space Force represents a recognition of the value of space to the prosperity and military prowess of the United States and the broader global economy. The United States alone has 901 satellites, which support GPS, banking operations, mobile technology, meteorology, and missile detection, among other technological capabilities.^[99] These crucial instruments touch upon many aspects of daily life, and their destabilization would result in severe domestic and global ramifications. Several countries, including China and India, have already demonstrated the ability to shoot down satellites, and Russia continues to test an anti-satellite weapon.^{[100],[101]} China and Russia are also developing methods to disrupt satellite functions.^[102] As these countries, and others, enhance their abilities to launch and impede space systems, the space environment is fast becoming another area of serious geopolitical and economic import. Should armed conflict erupt in space, the task of fighting adversaries is under the purview of the United States Space Command—not the Space Force (although General Raymond is currently dual-hatted as commander of Space Command).^[103]

To address these strategic challenges, Space Force leadership is grappling with institutional questions regarding what field commands will be created, how to envelop existing structures such as the Space and Missile Systems Center, and how best to transition certain Air Force bases that predominantly run space operations, including Peterson Air Force Base in Colorado and Vandenberg Air Force Base in

California.[104] These questions must be answered with existing human resources. Pursuant to the current legislation, only Air Force personnel are allowed to transfer to the Space Force, and the Space Force cannot add any new military billets.[105] Nonetheless, due to the redesignation of AFSPC, the Space Force has been assigned 16,000 airmen and civilian employees to start.[106] Over the next 18 months, space-related Air Force personnel will transfer to the Space Force to become Space Force service members.[107]

The creation of the Space Force will likely have effects beyond the Department of the Air Force. Though currently not permitted, the Department of Defense’s long-term vision is to authorize Army and Navy elements to transfer and join the Space Force in order to consolidate space personnel across the military branches into one service.[108] Another potential military resource that may eventually be used to support the Space Force is the Space National Guard. To fill the present gap, the Air National Guard has been asked to create four offensive space control squadrons in California, Colorado, Florida and Hawaii.[109]

Due to the congressional mandate, the next year and a half will be a particularly crucial period for defining the mission, organization, and capabilities of the Space Force as Space Force leadership determines the direction of this new military branch.

D. Internet Satellites

The United Nations Telecommunication Development Sector estimated that by the end of 2019, just 53.6% of the global population—slightly more than four billion people—were internet users.[110] The Federal Communications Commission (“FCC”) estimates that there are about 14 million rural Americans who do not have access to even the slowest mobile broadband services.[111] One idea to bring internet access to all corners of the globe is the use of thousands of internet satellites circulating at low Earth orbit.

These satellites would orbit only hundreds of miles above the Earth—as opposed to the 22,000 miles at which large geosynchronous satellites presently orbit—significantly reducing the response times for internet connections.[112] Orbiting closer to the Earth also means that the satellites travel faster, therefore requiring more satellites in the system to provide continuous internet connection to its customers.[113] These satellites grouped in one network are called a “constellation,” and a network with hundreds or thousands of satellites has been nicknamed a “megaconstellation.”

Morgan Stanley estimates the space economy, which includes the consumer broadband sector, will grow to more than \$1 trillion over the next 20 years.[114] In light of this potential opportunity, several commercial entities have received permission to launch and operate constellations, including SpaceX, Amazon, Telesat, and OneWeb. These four companies have announced their intention to launch as many as 46,100 satellites combined in the near future, dwarfing the present number of satellites in orbit—about 2,000.[115]

These ventures will have to adhere to launch requirements in order to retain their full rights in space, due to regulations implemented by the United Nations International Telecommunication Union (“ITU”) in November 2019. After a seven-year window from their spectrum request, constellation operators must

launch 10% of their satellites in two years, 50% in five years, and 100% in seven years.[116] Failure to launch in accordance with these milestones will subject the operators to proportional limits on their spectrum rights.[117]

SpaceX is one such venture that plans to operate a megaconstellation. SpaceX's initial Starlink plan called for a constellation of 12,000.[118] SpaceX has since filed for permission from the ITU to launch another 30,000 satellites.[119] Elon Musk, SpaceX's founder and chief executive, estimates that Starlink would be economically viable at 1,000 satellites, and that the annual internet revenue from the Starlink system, if successful, would be \$30 billion.[120]

In its first Starlink launch in May 2019, SpaceX sent 60 internet communications satellites into orbit.[121] According to Mark Juncosa, vice president for vehicle engineering at SpaceX, a further 24 launches would put enough satellites into orbit to provide internet coverage to most populated areas and 30 launches would result in satellite coverage for the entire world.[122] To date, SpaceX has launched about 350 Starlink satellites.[123]

SpaceX intends to compete directly with traditional internet service providers and plans to begin offering services for consumers in the United States in mid-2020.[124] With potentially thousands more satellites in orbit than needed for global coverage, Starlink could also serve specialized needs. For example, the U.S. Air Force is testing Starlink's technology for encrypted military communications in military aircraft as part of a SpaceX contract with the Pentagon.[125]

Amazon and Telesat have not yet launched a satellite but have announced plans to move forward with their planned constellations.[126] Project Kuiper is Amazon's internet satellite venture that aims to operate a system of 3,236 satellites.[127] Amazon has yet to announce a timetable for its launches, and it is currently seeking expedited FCC approval for the launch and operation of the Kuiper satellites.[128] Morgan Stanley believes Project Kuiper could represent a \$100 billion opportunity for Amazon.[129]

Canadian corporation Telesat has partnered with the Canadian government to provide internet access across rural and remote areas of Canada.[130] Telesat envisions a smaller constellation of about 300 satellites, with a goal of providing regional coverage in 2022 and global service in 2023.[131]

Notwithstanding the considerable revenue projections, the commercial internet satellite industry still faces challenges. One of the leading competitors, OneWeb, a London-based company, filed for Chapter 11 bankruptcy in late March 2020.[132] To date, OneWeb has successfully launched 74 satellites.[133] OneWeb had intended to begin coverage in 2021, selling its services first to governments and corporate customers, then to consumer internet providers.[134]

E. A Year of Serious Investment in Space

2019 was a year of serious space investment. Increased private funding, technological advancement, and growing public interest fueled serious investment in the space industry. Market pundits estimate the industry may nearly *triple* its revenue generation to \$1 trillion by 2040. This growth appears driven by two key trends—a broad spectrum investor pool and increased diversity in investment opportunities.

One of the biggest industry moves of the year was Virgin Galactic's October IPO. On October 25, Virgin Galactic announced the completion of a merger with Social Capital Hedosophia, creating Virgin Galactic Holdings, Inc., the first publicly traded commercial human spaceflight company.^[135] The IPO reflects a larger market trend: the space industry as a viable investment for the public.^[136] Indeed, 2019 saw the pool of investors investing in the space industry expand to even the most traditionally risk averse of investors—pension funds—with the Ontario Teachers' Pension Plan, a fund with over \$190 billion in managed assets, investing an undisclosed amount in SpaceX this past June.^[137]

Also contributing to the investment surge is the diversity of the current commercial opportunities in the space sector. Opportunities were traditionally limited to military contracts and large-scale communications satellites. Now, however, opportunities exist in private spaceflight, satellite broadband, and imagery and data analysis.^[138] And these developing sub-industries are likely to generate work for a second tier of companies providing technology and components to these end service providers.

Recent moves by the government, the traditional investor in the domestic space industry, have also fed into this diversification. In 2019, NASA announced several initiatives that will open up the Space Station for commercial use, creating new opportunities for private businesses. These initiatives come on top of NASA's aforementioned partnership with Boeing and SpaceX to develop commercial craft for shuttling astronauts to the Space Station. Additionally, the new U.S. Space Force is expected to generate additional investment and innovation opportunities for existing and emerging businesses in the space industry.^[139]

These positive investment trends continued through the first months of 2020. In February, the Trump administration announced that it would be boosting NASA's budget by 12%, bringing it to \$25.2 billion.^[140] But the COVID-19 pandemic has since cast a shadow on the industry. Furloughs, temporary closures, bankruptcies, delays, and lack of investor funding are just part of the impact felt by the space industry.^[141] As discussed above, satellite company OneWeb appears to be the first casualty of the pandemic, filing for Chapter 11 relief.^[142] According to OneWeb, the "financial impact and market turbulence related to the spread of COVID-19" prevented the company from obtaining the financing that it needed to fully fund its operations.^[143]

Government investment remains largely consistent. The Department of Defense is taking steps to keep its contractors, including those supplying the U.S. Space Force, at work by easing cash flow to contractors and ensuring timely payment.^[144] The government has also continued investing in NASA, earmarking \$60 million under the Coronavirus Aid, Relief, and Economic Security Act to support the agency.^[145]

III. Government Contracts

In this update, we summarize select recent government contracts decisions that involve companies in the aerospace and defense industry, as well as decisions that may be of interest to them. These cases address a wide range of issues with which government contractors in the aerospace and defense industry should be familiar.

A. Armed Services Board of Contract Appeals Cases

Aero Tech Services Associates, Inc., ASBCA No. 61682 (Mar. 30, 2020)

Aero Tech Services Associates, Inc. (“ATSA”) performed logistical maintenance services for two E-9A aircraft at Tyndall Air Force Base. As part of this contract, ATSA provided “over and above” tasks, engineering services, test and FAA certification of modifications, installation of modifications, and depot maintenance support. Under the contract, “over and above” charges were Government-directed tasks within the scope of the contract but not specifically forecasted. For the first six years of performance, the parties operated under a prior contract that fully reimbursed over and above subcontractor work; in contrast, the follow-on contract at issue in this case limited subcontractor over and above reimbursements to a fixed price.

In the course of an “over and above” task, ATSA requested that a team from another government contractor evaluate the severity of corrosion in an engine pursuant to a subcontract agreement. That contractor then charged ATSA a total price for the work. ATSA characterized the contractor as a “vendor,” claimed that the fixed hourly rate applicable to subcontractors for “over and above” tasks did not apply to “vendors,” and therefore argued that it should have been reimbursed for the contractor’s labor associated with “over and above” work as a material cost for which it was entitled to full reimbursement. The Government argued that the costs at issue are for subcontractor labor, which is only reimbursable up to a particular fixed hourly rate.

The Board rejected ATSA’s argument, holding that the plain language of the contract was unambiguous and did not support ATSA’s interpretation that the contractor did not qualify as a “subcontractor” for purposes of determining the over and above payment.

CLC Construction Company, ASBCA No. 59110 (Apr. 17, 2020)

CLC Construction Co. (“CLC”) was awarded a contract in 2011 to build a courthouse in Afghanistan. The Government initially terminated the contract for convenience, but later rescinded the termination for convenience and terminated the contract for default instead, alleging that the CLC violated the Procurement Integrity Act, (“PIA”) 41 U.S.C. §§ 2101-07. Specifically, the government alleged that CLC’s then-CEO improperly received the dollar amount of the lowest cost proposal and a copy of the Government’s independent estimate for the project before contract proposals were due. CLC appealed the contract termination, and the Government sought summary judgment. The Government argued that because CLC allegedly engaged in illegal conduct, the contract was void *ab initio*, and there was therefore no basis for the appeal.

The Board first rejected the government’s contention that CLC’s appeal was untimely. The contracting officer in this case had issued two final decisions—the first decided that CLC had engaged in illicit or improper activity prior to the contract’s award, and the second asserted a new legal theory based on the same facts to justify the contract’s termination. Although CLC appealed the first decision, it failed to appeal the second final decision. The Board found that CLC’s initial appeal of the first final decision was sufficient because, in that appeal, CLC denied all the facts applicable to both final decisions. The Board then denied summary judgment because the Government did not sufficiently demonstrate that

CLC had violated the PIA. The Government did not show, for example, that CLC received the information in exchange for something of value, such as payment, or to gain a competitive advantage. The Board also noted the Government's failure to show that the information CLC possessed constituted prohibited information under the PIA because the independent government estimate did not fit within the definition of "source selection information" set forth in the PIA.

B. Civilian Board of Contract Appeals Cases

Pernix Serka Joint Venture v. Dep't of State, CBCA No. 5683 (Apr. 22, 2020)

Pernix Serka Joint Venture ("Pernix") was performing a firm fixed price contract to construct a rainwater capture and storage system in Sierra Leone when the region was disrupted by the Ebola virus. Although Pernix sought guidance from the Department of State ("DOS") about how to respond to the outbreak, DOS did not provide the requested guidance. Pernix took several actions, including demobilizing and remobilizing and later contracting for additional medical services for its employees. Pernix requested an equitable adjustment for these increased costs, which DOS denied. Pernix appealed under several theories, including cardinal change, constructive change, and breach of implied duty to cooperate. The Government moved for summary judgment, arguing that because Pernix had a firm fixed price contract, Pernix assumed the risks of any unexpected costs not attributable to the Government.

In granting the summary judgment, the Board rejected Pernix's argument that there had been a "cardinal change," because the DOS never changed the description of work expected from Pernix under the contract. The Board also rejected Pernix's argument that a constructive change had occurred, because the Government did not direct Pernix to demobilize or remobilize its employees. Ultimately, the Board ruled that summary judgment was appropriate because Pernix did not identify any basis to shift the risk under its fixed price contract to the Government.

CSI Aviation, Inc. v. Dep't of Homeland Security and Gen'l Svcs. Administration, CBCA Nos. 6581, 6582 (Feb. 21, 2020).

In an interesting case raising the issue of the proper Government agency respondent, the CBCA recently deferred ruling on the jurisdictional question of whether an agency's contracting officer has the authority to deny a contractor certified claim. CSI Aviation, Inc. ("CSI") sells air transportation services to federal agencies under a GSA Schedule contract. U.S. Immigration and Customs Enforcement ("ICE"), which placed orders under the GSA Schedule contract, failed to pay two invoices related to chartered flights, and CSI submitted a certified claim to both the ICE contracting officer and the GSA Schedule contracting officer. CSI requested that the ICE contracting officer refer the claim to the GSA Schedule contracting officer, but the ICE contracting officer did not do so and denied the claim on the basis that the schedule contract did not apply to the task orders at issue.

In response, CSI filed two appeals with the Board: CBCA 6581 appealed the ICE contracting officer's denial, and CBCA 6582 protectively appealed the "deemed denial" of its claim by GSA. CSI moved to stay CBCA 6581, in which ICE is the respondent, and encouraged the Board to move forward with CBCA 6582, in which GSA was the respondent. GSA moved to dismiss CBCA 6582 for lack of jurisdiction. CSI then moved for the Board to consolidate the two appeals and designate GSA as the

“lead respondent” because the ICE contracting officer did not have the authority to render his final decision. In short, both GSA and ICE wanted the Board to proceed only with CBCA 6581 involving DHS/ICE, whereas CSI wanted the Board to proceed with CBCA 6582 but keep CBCA 6581 on the docket until CBCA 6582 was resolved.

The Board granted CSI’s motion to consolidate because both appeals were borne from the exact same facts and raised the same question of law: whether the ICE contracting officer had the authority to issue a denial or whether the claim required an interpretation of the schedule contract and thus must be decided by GSA. The Board noted that this case was difficult because the jurisdictional question is essentially the same as the merits question, but determined that it need not immediately decide which agency should have adjudicated CSI’s claim because CSI sent the claim to both agencies and both agencies are currently before the Board.

In a separate appeal, *CSI Aviation, Inc. v. General Services Administration*, CBCA No. 6543 (Mar. 10, 2020), the Board denied ICE’s motion to intervene to “assert defenses against CSI’s contract claims” because “ICE’s legal and financial interests may be at variance with GSA’s interests” in this case. The Board rejected ICE’s contention that it could have interests “at variance” to GSA where “a respondent agency appears before us on behalf of and in the interests of *the United States* and not of the agency alone” (emphasis added). In denying ICE’s motion to intervene, the Board clarified that ICE is free to aid GSA in their case and communicate with GSA if ICE is dissatisfied with GSA’s conduct as the respondent.

C. Court of Federal Claims Cases

***Raytheon Co. v. U.S.*, No. 19-883C (Fed. Cl. Jan. 14, 2020)**

Raytheon Company (“Raytheon”) contracts with the United States Army to supply engineering services supporting the Patriot weapon system. Raytheon placed certain proprietary markings on vendor lists that Raytheon was contractually obligated to supply to the Army. The contracting officer (“CO”) directed Raytheon to remove the proprietary marks from the vendor lists and to replace them with the legend used for technical data in which the government holds “government purpose rights” under DFARS 252.227-7013.

Raytheon filed suit, arguing *inter alia* that the CO’s final decision directing Raytheon to affix the government purpose rights legend was invalid because Raytheon did not receive certain statutorily-required procedural protections in the CO’s decision-making process; that the Army breached the contract by failing to follow procedures for challenge restrictive markings; and that Raytheon’s vendor lists are not technical data as defined in the DFARS. The Government moved to dismiss Raytheon’s complaint for lack of subject-matter jurisdiction and failure to state a claim.

Specifically, the Government argued that the Court did not have jurisdiction to hear the claims under the Tucker Act, 18 U.S.C. § 1491(a)(1), because Raytheon sought only declaratory relief and no monetary damages. The Court agreed that it did not have jurisdiction under the Tucker Act but held that it *did* properly have jurisdiction under the Contract Disputes Act. The Court explained that Raytheon’s request for declaratory judgment constitutes a claim concerning any “nonmonetary dispute[] on which a decision

of the contracting officer has been issued” under the CDA. A “claim” is defined by FAR 2.101 as a demand by any party seeking, among other things, “relief arising under or relating to the contract.”

The Court held that it has the power to decide whether Raytheon is compelled to comply with the CO’s decision in light of the alleged procedural deficiencies in the CO’s process and denied the government’s motion to dismiss.

D. Federal Circuit Court of Appeals Cases

***Northrop Grumman Corp. v. Sec’y of Defense*, Nos. 2018-1945, 2018-1990 (Fed. Cir. Nov. 15, 2019)**

The FAR permits contractors such as Northrop Grumman Corporation (“NGC”) to seek reimbursement for post-retirement benefit costs (“PRB costs”), such as those related to post-retirement health care, life insurance, and disability benefits. Only “allowable” PRB costs are reimbursable. Prior to a 1995 amendment, the FAR did not require contractors to use any specific accounting standard in measuring PRB costs each year, and NGC used the “DEFRA” method, established by the Deficit Reduction Act of 1984. In 1995, the FAR was amended to require that government contractors comply with the Financial Accounting Standards (“FAS”) 106 to determine allowable PRB costs. Despite this FAR amendment, NGC continued using the DEFRA method to account for its PRB costs, even though DEFRA does not comply with FAS 106.

NGC disclosed its use of the DEFRA method, which resulted in lower costs to the government, and the government did not object. NGC switched to the FAS method in 2006 and amended its PRB plans at the same time. The amended PRB plans reduced NGC’s PRB cost obligations by \$307 million, which NGC subtracted from its transition obligation as required by FAS 106. The Defense Contract Management Agency (“DCMA”) disallowed \$253 million of NGC’s PRB costs after 2006 on the basis that NGC had not used the FAS 106 method from 1995–2006. NGC appealed to the ASBCA, which determined that NGC has and never will claim reimbursement for the \$253 million in disputed costs because those costs were not incurred between 1995–2006.

The Court upheld the ASBCA’s determination that NGC never claimed and will never claim any of the disputed retirement benefits. The Court also upheld the ASBCA’s holding that NGC’s PRB plan amendment effectively eliminated NGC’s transition obligation, so the government’s disallowance of the disputed funds was improper.

[1] Yujing Liu, *China Adapts Surveying, Mapping, Delivery Drones to Enforce World’s Biggest Quarantine and Contain Coronavirus Outbreak*, South China Morning Post (Mar. 5, 2020), available at <https://www.scmp.com/business/china-business/article/3064986/china-adapts-surveying-mapping-delivery-drones-task>.

[2] *Id.*

GIBSON DUNN

[3] Jed Pressgrove, *Do Drones Have a Realistic Place in the COVID-19 Fight?*, Gov't Tech. (Mar. 20, 2020), available at <https://www.govtech.com/products/Do-Drones-Have-a-Realistic-Place-in-the-COVID-19-Fight.html>.

[4] *NJ Town Resorts to Talking Drones to Enforce Social Distancing*, NBC New York (Apr. 9, 2020), available at <https://www.nbcnewyork.com/news/local/nj-town-resorts-to-talking-drones-to-enforce-social-distancing/2364912/>.

[5] Ben Yakas, *FAA Investigating “Anti-COVID-19 Volunteer Drone” Filmed Admonishing People in NYC*, Gothamist (Apr. 2, 2020), available at <https://gothamist.com/news/faa-investigating-anti-covid-19-volunteer-drone-filmed-admonishing-people-nyc>.

[6] Draganfly, Inc., *Draganfly’s ‘Pandemic Drone’ Technology Conducts Initial Flights Near New York City to Detect COVID-19 Symptoms and Identify Social Distancing*, GlobeNewswire (Apr. 21, 2020), available at <https://www.globenewswire.com/news-release/2020/04/21/2019221/0/en/Draganfly-s-Pandemic-Drone-technology-Conducts-Initial-Flights-Near-New-York-City-to-Detect-COVID-19-Symptoms-and-Identify-Social-Distancing.html>.

[7] Westport Police Department, Public Facebook Statement (Apr. 21, 2020), available at <https://www.facebook.com/westportctpolice/posts/1621495744664486>.

[8] Fed. Aviation Admin., *UAS Integration Pilot Program* (Dec. 10, 2019), available at https://www.faa.gov/uas/programs_partnerships/integration_pilot_program/.

[9] Fed. Aviation Admin., *Integration of Civil Unmanned Aircraft Systems (UAS) in the National Airspace System (NAS) Roadmap, Second Edition* 32 (July 2018), available at https://www.faa.gov/uas/resources/policy_library/media/Second_Edition_Integration_of_Civil_UAS_NAS_Roadmap_July%202018.pdf.

[10] U.S. Dep’t of Transp., *UAS Integration Pilot Program Selection Announcement* (May 9, 2018), available at <https://www.transportation.gov/briefing-room/uas-integration-pilot-program-selection-announcement>.

[11] Gustavo Solis, *FAA Allows Chula Vista to Expand Police Drone Program*, The San Diego Union Tribune (Mar. 22, 2019), available at <https://www.sandiegouniontribune.com/communities/south-county/sd-se-chula-vista-drones-20190319-story.html>.

[12] Chula Vista Police Dep’t, *UAS Drone Program*, available at <https://www.chulavistaca.gov/departments/police-department/programs/uas-drone-program> (last visited Apr. 17, 2020).

[13] Mihir Zaveri, *Wing, Owned by Google’s Parent Company, Gets First Approval for Drone Deliveries in U.S.*, N.Y. Times (Apr. 23, 2019), available at <https://www.nytimes.com/2019/04/23/technology/drone-deliveries-google-wing.html>.

GIBSON DUNN

[14] Wing Medium, *Wing Unveils Plans for First-of-its-Kind Trial with FedEx and Walgreens*, Medium (Sept. 19, 2019), available at <https://medium.com/wing-aviation/wing-unveils-plans-for-first-of-its-kind-trial-with-fedex-and-walgreens-7f17350daa09>.

[15] Brian Garrett-Glaser, *FAA Releases Policy Proposal for Type Certifying Drones*, Aviation Today (Feb. 5, 2019), available at <https://www.aviationtoday.com/2020/02/05/faa-releases-policy-proposal-type-certifying-drones/>.

[16] *UPS Flight Forward Attains FAA's First Full Approval For Drone Airline*, UPS Press Release (Oct. 1, 2019), available at <https://pressroom.ups.com/pressroom/ContentDetailsViewer.page?ConceptType=PressReleases&id=1569933965476-404>.

[17] Fed. Aviation Admin., *Fact Sheet - UAS Integration Pilot Program* (Mar. 31, 2020), available at https://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=23574.

[18] Fed. Aviation Admin., *Notice of Proposed Rulemaking on Remote Identification of Unmanned Aircraft Systems* (Dec. 31, 2019), available at <https://www.federalregister.gov/documents/2019/12/31/2019-28100/remote-identification-of-unmanned-aircraft-systems>.

[19] 49 C.F.R. §§ 44101–06, 44110–13 (2019); see also Fed. Aviation Admin., *FAADroneZone*, available at <https://faadronezone.faa.gov> (last visited Apr. 17, 2020).

[20] See Brendan Schulman, *We Strongly Support Drone Remote ID. But Not Like This*, DJI (Jan. 14, 2020), available at <https://content.dji.com/we-strongly-support-drone-remote-id-but-not-like-this/>.

[21] Jim Moore, *FAA Gets Early Earful on Drone ID*, Aircraft Owners and Pilots Ass'n (Jan. 9, 2020), available at <https://www.aopa.org/news-and-media/all-news/2020/january/09/faa-gets-early-earful-on-drone-id>.

[22] Fed. Aviation Admin., *supra*, note 18.

[23] *Id.*

[24] Jim Moore, *supra*, note 21.

[25] Fed. Aviation Admin., *supra*, note 18.

[26] Jim Moore, *supra*, note 21; Public Submissions, *Remote Identification of Unmanned Aircraft Systems*, regulations.gov, available at <https://www.regulations.gov/docketBrowser?rpp=50&so=DESC&sb=postedDate&po=0&dct=PS&D=FAA-2019-1100> (last visited Apr. 17, 2020).

GIBSON DUNN

[27] Public Submissions, *Remote Identification of Unmanned Aircraft Systems*, regulations.gov, available at <https://www.regulations.gov/docketBrowser?rpp=50&so=DESC&sb=postedDate&po=0&dct=PS&D=FAA-2019-1100> (last visited Apr. 17, 2020).

[28] Brendan Schulman, *We Strongly Support Drone Remote ID. But Not Like This*, DJI (Jan. 14, 2020), available at <https://content.dji.com/we-strongly-support-drone-remote-id-but-not-like-this/>.

[29] *Id.*

[30] Ryan Hawkins, Public Comment (Mar. 5, 2020), available at <https://www.regulations.gov/document?D=FAA-2019-1100-52820>.

[31] Dan Hubbard, *NBAA Welcomes FAA Call for Comment on Drone Identification Rule*, National Business Aviation Ass'n (Dec. 27, 2019), available at <https://nbaa.org/press-releases/nbaa-welcomes-faa-call-comment-drone-identification-rule/>.

[32] *Id.*

[33] Jim Moore, *supra*, note 21.

[34] Fed. Aviation Admin., *supra*, note 18.

[35] Fed. Aviation Admin., *Busting Myths about the FAA and Unmanned Aircraft* (Mar. 7, 2014), available at <https://www.faa.gov/news/updates/?newsId=76240>.

[36] *Huerta v. Haughwout*, No. 3:16-cv-358, Dkt. No. 30 (D. Conn. July 18, 2016).

[37] *Id.*

[38] Complaint, *Michigan Coalition of Drone Operators, Inc. v. Genesee County Park Commission, et al.*, No. 2019-113058-CZ (7th. Jud. Dist. Ct. Genesee Div., Mich. 2020).

[39] Public Act 436 of 2016, Section 259.305.

[40] *Michigan Coalition of Drone Operators, Inc. v. Genesee County Park Commission, et al.*, No. 2019-113058-CZ (7th. Jud. Dist. Ct. Genesee Div., Mich. 2019).

[41] Fed. Aviation Admin., *Press Release – DOT and FAA Finalize Rules for Small Unmanned Aircraft Systems* (June 21, 2016), available at https://www.faa.gov/news/press_releases/news_story.cfm?newsId=20515.

[42] *Id.*

[43] *Id.*

GIBSON DUNN

- [44] Fed. Aviation Admin., *Recently Published Rulemaking Documents*, available at https://www.faa.gov/regulations_policies/rulemaking/recently_published/ (last visited Apr. 17, 2020).
- [45] Dep't of Transp., *Operation of Small Unmanned Aircraft Systems over People* (June 21, 2019) https://www.faa.gov/uas/programs_partnerships/DOT_initiatives/media/2120-AK85_NPRM_Operations_of_Small_UAS_Over_People.pdf.
- [46] *Id.*
- [47] *Id.*
- [48] Fed. Aviation Admin., *FAA Issues Waiver to Fly Drones With Parachutes* (June 5, 2019), available at <https://www.faa.gov/news/updates/?newsId=93846>.
- [49] *Id.*
- [50] *Id.*
- [51] Fed. Aviation Admin., *Recreational Flyers & Modeler Community-Based Organizations* (Feb. 18, 2020), available at https://www.faa.gov/uas/recreational_fliers/.
- [52] “Artemis was the twin sister of Apollo and goddess of the Moon in Greek Mythology.” *What is Artemis?*, NASA (July 25, 2019), available at <https://www.nasa.gov/what-is-artemis>.
- [53] *Id.*
- [54] *Friday’s All-Woman Spacewalk: The Basics*, NASA (Oct. 17, 2019), available at <https://www.nasa.gov/feature/fridays-all-woman-spacewalk-the-basics>.
- [55] *Id.*; *Media Invited to Speak with Record-Breaking NASA Astronaut Christina Koch*, NASA (Feb. 7, 2020), available at <https://www.nasa.gov/press-release/media-invited-to-speak-with-record-breaking-nasa-astronaut-christina-koch>.
- [56] Andrew Jones, *China’s Chang’e 4 Returns First Images from Moon’s Farside Following Historic Landing*, Space.com (Jan. 03, 2020), available at <https://www.space.com/42884-china-change-e-4-first-images-moon-far-side.html>.
- [57] Adam Mann, *China’s Chang’e Program: Missions to the Moon*, Space.com (Feb. 1, 2020), available at <https://www.space.com/43199-chang-e-program.html>.
- [58] Rebecca Morelle, *Israel’s Beresheet Spacecraft Crashes on Moon*, BBC News (Apr. 11, 2019), available at <https://www.bbc.com/news/science-environment-47879538>.
- [59] Government of India, Department of Space, *Lok Sabha Unstarred Question No. 588* (Nov. 20, 2019), available at <http://164.100.24.220/loksabhaquestions/annex/172/AU588.pdf>.

GIBSON DUNN

[60] Jeff Foust, *India Tests Anti-Satellite Weapon*, Space.com (Mar. 27, 2020), available at <https://www.space.com/india-tests-anti-satellite-weapon.html>.

[61] *Id.*

[62] Paul Rincon, *Hayabusa-2: Japanese Probe Likely to Have ‘Bombed’ an Asteroid*, BBC News (Apr. 5, 2019), available at <https://www.bbc.com/news/science-environment-47818460>; *Hayabusa-2: Japan Spacecraft Leaves Asteroid to Head Home*, BBC News (Apr. 11, 2019), available at <https://www.bbc.com/news/world-asia-50403272>.

[63] Meghan Bartels, *Farewell, Ryugu! Japan’s Hayabusa2 Probe Leaves Asteroid for Journey Home*, Space.com (Nov. 13, 2019), available at <https://www.space.com/hayabusa2-spacecraft-leaves-asteroid-ryugu.html>.

[64] *Iran’s Revolutionary Guards ‘Successfully Launch Military Satellite’*, BBC News (Apr. 22, 2020), available at <https://www.bbc.com/news/world-middle-east-52380507>.

[65] The Associated Press, *Iran Says It Launched a Military Satellite Into Orbit*, N.Y. Times (Apr. 22, 2020), available at <https://www.nytimes.com/2020/04/22/world/middleeast/iran-satellite-launch.html>.

[66] *Id.*

[67] *NASA Selects First Commercial Moon Landing Services for Artemis Program*, NASA (May 31, 2019), available at <https://www.nasa.gov/press-release/nasa-selects-first-commercial-moon-landing-services-for-artemis-program>.

[68] *NASA Award Contract to Deliver Science Tech to Moon Ahead of Human Missions*, NASA (Apr. 8, 2020), available at <https://www.nasa.gov/press-release/nasa-awards-contract-to-deliver-science-tech-to-moon-ahead-of-human-missions>.

[69] *Id.*

[70] *Dragon*, SpaceX, available at <https://www.spacex.com/dragon> (last visited Feb. 3, 2020).

[71] *Id.*

[72] Reuters, *NASA Sets Launch Date for SpaceX U.S. Manned Mission to Space Station*, N.Y. Times (Apr. 20, 2020), available at <https://www.nytimes.com/reuters/2020/04/20/world/europe/20reuters-space-exploration-spacex-launch.html>.

[73] Christian Davenport, *After Botched Test Flight, Boeing Will Refly its Starliner Spacecraft for NASA*, Washington Post (Apr. 6, 2020), available at <https://www.washingtonpost.com/technology/2020/04/06/boeing-starliner-test-repeat/>.

GIBSON DUNN

[74] Kenneth Chang, *Want to Buy a Ticket the Space Station? NASA Says Soon You Can*, N.Y. Times (June 7, 2019), available at <https://www.nytimes.com/2019/06/07/science/space-station-nasa.html>.

[75] *Id.*

[76] *Id.*

[77] Kenneth Chang, *There Are 2 Seats Left for This Trip to the International Space Station*, N.Y. Times (Mar. 5, 2020), available at <https://www.nytimes.com/2020/03/05/science/axiom-space-station.html>.

[78] *Id.*; Jonathan O’Callaghan, *The Coronavirus Is Starting To Have A Serious Impact On The Space Industry*, Forbes (Mar. 25, 2020), available at <https://www.forbes.com/sites/jonathanoallaghan/2020/03/25/the-coronavirus-is-starting-to-have-a-serious-impact-on-the-space-industry/#7e0b851c4cba>.

[79] *NASA Selects First Commercial Destination Module for International Space Station*, NASA (Jan. 27, 2020), available at <https://www.nasa.gov/press-release/nasa-selects-first-commercial-destination-module-for-international-space-station>.

[80] *Id.*

[81] *Id.*

[82] *Virgin Galactic Makes Space for Second Time in Ten Weeks with Three on Board, Reaching Higher Altitudes and Faster Speeds, as Flight Test Program Continues*, Virgin Galactic (Feb. 22, 2019), available at <https://www.virgingalactic.com/articles/virgin-galactic-makes-space-for-second-time-in-ten-weeks-with-three-on-board/>.

[83] Michael Sheetz, *New Virgin Galactic Chairman Chamath Palihapitiya Says Tourism Spaceflights to Begin Within a Year*, CNBC (July 9, 2019), available at <https://www.cnbc.com/2019/07/09/virgin-galactic-says-space-tourism-flights-to-begin-in-a-year-company-will-be-profitable-in-2021.html>.

[84] Loren Grush, *Blue Origin Successfully Launches and Lands its New Shepard Rocket During 12th Overall Test Flight*, The Verge (Dec. 11, 2019), available at <https://www.theverge.com/2019/12/10/21003756/blue-origin-new-shepard-rocket-test-launch-science-research-watch-live>.

[85] *Id.*

[86] Sec’y of the Air Force Public Affairs, *With the Stroke of a Pen, U.S. Space Force Becomes a Reality* (Dec. 20, 2019), available at <https://www.spaceforce.mil/News/Article/2046055/with-the-stroke-of-a-pen-us-space-force-becomes-a-reality>.

GIBSON DUNN

[87] National Defense Authorization Act for Fiscal Year 2020, S. 1790, 116th Cong. § 952 b(4) (as passed by Senate, June 27, 2019), *available at* <https://www.congress.gov/116/bills/s1790/BILLS-116s1790enr.pdf>.

[88] H.R. Rep. No. 116-333, at 903 (2019) (Conf. Rep.).

[89] U.S. Space Force, *U.S. Space Force Fact Sheet* (Mar. 31, 2020), *available at* <https://www.spaceforce.mil/About-Us/Fact-Sheet>.

[90] Merrit Kennedy, *Trump Created The Space Force. Here's What It Will Actually Do*, NPR (Dec. 21, 2019), *available at* <https://www.npr.org/2019/12/21/790492010/trump-created-the-space-force-heres-what-it-will-do>.

[91] Marina Korn, *The U.S. Space Force Is Not a Joke*, The Atlantic (Jan. 15, 2020), *available at* <https://www.theatlantic.com/science/archive/2020/01/space-force-trump/604951/>.

[92] U.S. Space Force, *U.S. Space Force Fact Sheet* (Mar. 31, 2020), *available at* <https://www.spaceforce.mil/About-Us/Fact-Sheet>.

[93] Sec'y of the Air Force Public Affairs, *Raymond sworn in as first Chief of Space Operations at White House event* (Jan. 14, 2020), *available at* <https://www.spaceforce.mil/News/Article/2057219/raymond-sworn-in-as-first-chief-of-space-operations-at-white-house-event>.

[94] H.R. Rep. No. 116-333, at 907-908 (2019) (Conf. Rep.), *available at* <https://docs.house.gov/billsthisweek/20191209/CRPT-116hrpt333.pdf>.

[95] Sandra Erwin, *Trump Signs Defense Bill Establishing U.S. Space Force: What Comes Next*, Space News (Dec. 20, 2019), *available at* <https://spacenews.com/trump-signs-defense-bill-establishing-u-s-space-force-what-comes-next/>.

[96] U.S. Cong. Budget Office, *The Personnel Requirements and Costs of New Military Space Organizations* (May 2019), *available at* <https://www.cbo.gov/system/files/2019-05/55178-SpaceForce.pdf>.

[97] National Defense Authorization Act for Fiscal Year 2020, S. 1790, 116th Cong. § 961(a) (as passed by Senate, June 27, 2019).

[98] S. 1790, § 961(b).

[99] David Montgomery, *Trump's Excellent Space Force Adventure*, The Washington Post Magazine (Dec. 3, 2019), *available at* <https://www.washingtonpost.com/magazine/2019/12/03/trumps-proposal-space-force-was-widely-mocked-could-it-be-stroke-stable-genius-that-makes-america-safe-again/>.

[100] *Id.*

[101] Mike Wall, *Don't panic about Russia's recent anti-satellite test, experts say*, SPACE.com (Apr. 30, 2020), available at <https://www.space.com/russia-anti-satellite-weapon-fears-overblown.html>.

[102] *Id.*

[103] Kennedy, *supra*, note 90.

[104] Sandra Erwin, *U.S. Space Force Begins to Organize Pentagon Staff and Field Operations*, Space News (Jan. 16, 2020), available at <https://spacenews.com/u-s-space-force-begins-to-organize-pentagon-staff-and-field-operations/>.

[105] Valerie Insinna, *May The Space Force Be with You. Here's What We Know About The US Military's Newest Service*, Defense News (Dec. 20, 2019), available at <https://www.defensenews.com/breaking-news/2019/12/21/may-the-space-force-be-with-you-heres-what-we-know-about-the-us-militarys-newest-service/>; National Defense Authorization Act for Fiscal Year 2020, S. 1790, 116th Cong. § 952(d)(2) (as passed by Senate, June 27, 2019).

[106] Jim Garamone, *Trump Signs Law Establishing U.S. Space Force*, DoD News (Dec. 20, 2019), available at <https://www.defense.gov/explore/story/Article/2046035/trump-signs-law-establishing-us-space-force/>.

[107] U.S. Space Force, *U.S. Space Force Fact Sheet* (Mar. 31, 2020), available at <https://www.spaceforce.mil/About-Us/Fact-Sheet>.

[108] Insinna, *supra*, note 105.

[109] The Associated Press, *Hawaii Air National Guard to Create Space Control Squadron*, Air Force Times (Jan. 12, 2020), available at <https://www.airforcetimes.com/news/your-air-force/2020/01/12/hawaii-air-national-guard-to-create-space-force-squadron/>.

[110] Int'l Telecomm. Union, *United Nations Telecommunication Development Sector Statistics*, available at <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx> (last visited Apr. 17, 2020).

[111] Michael Sheetz and Magdalena Petrova, *Why in the Next Decade Companies Will Launch Thousands More Satellites Than in all of History*, CNBC (Dec. 15, 2019), available at <https://www.cnbc.com/2019/12/14/spacex-oneweb-and-amazon-to-launch-thousands-more-satellites-in-2020s.html>.

[112] Daniel Oberhaus, *SpaceX is Banking on Satellite Internet. Maybe It Shouldn't*, Wired (May 15, 2019), available at <https://www.wired.com/story/spacex-starlink-satellite-internet/>.

GIBSON DUNN

[113] Kenneth Chang, *SpaceX Launches 60 Starlink Internet Satellites Into Orbit*, N.Y. Times (May 23, 2019), available at <https://www.nytimes.com/2019/05/23/science/spacex-launch.html>.

[114] Michael Sheetz, *This New Business from Amazon Represents a '\$100 Billion Opportunity,' Morgan Stanley Says*, CNBC (July 15, 2019), available at <https://www.cnbc.com/2019/07/15/morgan-stanley-amazon-project-kuiper-could-be-a-100-billion-business.html>.

[115] Sheetz and Petrova, *supra*, note 111; Chris Baraniuk, *How Internet That's Beamed from Space Could Create New Jobs*, BBC Worklife (Aug. 19, 2019), available at <https://www.bbc.com/worklife/article/20190816-how-satellites-could-revolutionise-the-internet>.

[116] Caleb Henry, *ITU Sets Milestones for Megaconstellations*, Space News (Nov. 21, 2019), available at <https://spacenews.com/itu-sets-milestones-for-megaconstellations/>.

[117] *Id.*

[118] Tariq Malik, *SpaceX's Starlink Broadband Service Will Begin in 2020: Report*, Space.com (Oct. 24, 2019), available at <https://www.space.com/spacex-starlink-satellite-internet-service-2020.html>.

[119] *Id.*

[120] Caleb Henry, *SpaceX Becomes Operator of World's Largest Commercial Satellite Constellation with Starlink Launch*, Space News (Jan. 6, 2020), available at <https://spacenews.com/spacex-becomes-operator-of-worlds-largest-commercial-satellite-constellation-with-starlink-launch/>; Malik, *supra*, note 118.

[121] Kenneth Chang, *SpaceX Launches 60 Starlink Internet Satellites into Orbit*, N.Y. Times (May 23, 2019), available at <https://www.nytimes.com/2019/05/23/science/spacex-launch.html>.

[122] *Id.*

[123] Jackie Wattles, *Amid Pandemic, SpaceX Launches Another Batch of Starlink Satellites*, CNN Business (Mar. 18, 2020), available at <https://edition.cnn.com/2020/03/18/tech/spacex-launch-starlink-coronavirus-scn/index.html>.

[124] Jackie Wattles, *The Race for Space-Based Broadband: OneWeb Launches 34 More Internet Satellites*, CNN Business (Feb. 7, 2020), available at <https://edition.cnn.com/2020/02/06/tech/oneweb-satellite-internet-launch-scn/index.html>; Sandra Erwin, *SpaceX Plans to Start Offering Starlink Broadband Services in 2020*, Space News (Oct. 22, 2019), available at <https://spacenews.com/spacex-plans-to-start-offering-starlink-broadband-services-in-2020/>.

[125] Malik, *supra*, note 118.

[126] Sheetz and Petrova, *supra*, note 111.

GIBSON DUNN

[127] Michael Sheetz, *This New Business from Amazon Represents a ‘\$100 Billion Opportunity,’ Morgan Stanley Says*, CNBC (July 15, 2019), available at <https://www.cnbc.com/2019/07/15/morgan-stanley-amazon-project-kuiper-could-be-a-100-billion-business.html>.

[128] Alan Boyle, *Amazon Asks FCC to Give Swift Approval to Project Kuiper Satellite Network Despite SpaceX Opposition*, GeekWire (Jan. 27, 2020), available at <https://www.geekwire.com/2020/amazon-asks-fcc-give-swift-approval-project-kuiper-satellite-network-despite-spacex-opposition/>.

[129] Sheetz, *supra*, note 114.

[130] Telesat, *The Government of Canada and Telesat Partner to Bridge Canada’s Digital Divide through Low Earth Orbit (LEO) Satellite Technology, Over \$1 Billion in Revenue for Telesat Expected* (July 24, 2019), available at <https://www.telesat.com/news-events/government-canada-and-telesat-partner-bridge-canadas-digital-divide-through-low-earth>.

[131] Sheetz and Petrova, *supra*, note 111.

[132] OneWeb, *OneWeb Files for Chapter 11 Restructuring to Execute Sale Process* (Mar. 27, 2020), available at <https://www.oneweb.world/media-center/oneweb-files-for-chapter-11-restructuring-to-execute-sale-process>.

[133] *Id.*

[134] Wattles, *supra*, note 124.

[135] *Virgin Galactic Completes Merger with Social Capital Hedosophia, Creating the World’s First and Only Publicly Traded Commercial Human Spaceflight Company*, Virgin Galactic (Oct. 25, 2019), available at <https://www.virgingalactic.com/articles/virgin-galactic-completes-merger-with-social-capital-hedosophia-creating-the-worlds-first-and-only-publicly-traded-commercial-human-spaceflight-company/>.

[136] *Id.*

[137] Victor Ferreira, *From Space Tourism to Robo-Surgeries: Investors Are Betting on The Future Like There’s No Tomorrow*, Financial Post (Dec. 27, 2019), available at <https://business.financialpost.com/investing/investing-for-the-future>.

[138] Michael Sheetz, *An Investor’s Guide to Space, Wall Street’s Next Trillion-Dollar Industry*, CNBC (Nov. 9, 2019), available at <https://www.cnbc.com/2019/11/09/how-to-invest-in-space-companies-complete-guide-to-rockets-satellites-and-more.html>; *Space: Investing in the Final Frontier*, Morgan Stanley (July 2, 2019), available at <https://www.morganstanley.com/ideas/investing-in-space>.

[139] *See infra* § II.A.

GIBSON DUNN

[140] Andy Pasztor, *Trump's NASA Budget Will Earmark 12% Boost for Agency in 2021*, Wall Street Journal (Feb. 7, 2020), available at <https://www.wsj.com/articles/trumps-nasa-budget-will-earmark-12-boost-for-agency-in-2021-11581071402>.

[141] *SmallSat Alliance COVID-19 White Paper*, SmallSat Alliance (Apr. 21, 2020), available at <https://cdn2.hubspot.net/hubfs/4653168/SmallSat%20Alliance%20COVID-19%20White%20Paper.pdf>.

[142] OneWeb, *supra*, note 132.

[143] *Id.*

[144] Sandra Erwin, *Space and Missile Systems Center Taking Action to Help Contractors During Pandemic*, Space News (Mar. 25, 2020), available at <https://spacenews.com/space-and-missile-systems-center-taking-action-to-help-contractors-during-pandemic/>.

[145] *\$340 Billion Surge in Emergency Funding to Combat Coronavirus Outbreak*, Senate Appropriations Committee, available at https://www.appropriations.senate.gov/imo/media/doc/Coronavirus%20Supplemental%20Appropriations%20Summary_FINAL.pdf (last visited Apr. 22, 2020).



The following Gibson Dunn lawyers assisted in preparing this client update: Karen Manos, David Wilf, Perlette Jura, Dhananjay Manthripragada, Jared Greenberg, Lindsay Paulin, Andrew Hazlett, Alisha Mahalingam, Ciara Davis, Afia Bonner, Chris Connelly, Sarah Scharf and Casper Yen.

Gibson Dunn lawyers are available to assist in addressing any questions you may have regarding the issues discussed above. Please contact the Gibson Dunn lawyer with whom you usually work, any of the following in the Aerospace and Related Technologies practice group:

Washington, D.C.

Karen L. Manos - Co-Chair (+1 202-955-8536, kmanos@gibsondunn.com)

Lindsay M. Paulin (+1 202-887-3701, lpaulin@gibsondunn.com)

Christopher T. Timura (+1 202-887-3690, ctimura@gibsondunn.com)

Los Angeles

William J. Peters (+1 213-229-7515, wpeters@gibsondunn.com)

David A. Battaglia (+1 213-229-7380, dbattaglia@gibsondunn.com)

Perlette M. Jura (+1 213-229-7121, pjura@gibsondunn.com)

Dhananjay S. Manthripragada (+1 213-229-7366, dmanthripragada@gibsondunn.com)

Denver

Jared Greenberg (+1 303-298-5707, jgreenberg@gibsondunn.com)

GIBSON DUNN

New York

David M. Wilf - Co-Chair (+1 212-351-4027, dwilf@gibsondunn.com)

London

Mitri J. Najjar (+44 (0)20 7071 4262, mnajjar@gibsondunn.com)

Paris

Ahmed Baladi (+33 (0)1 56 43 13 00, abaladi@gibsondunn.com)

© 2020 Gibson, Dunn & Crutcher LLP

Attorney Advertising: The enclosed materials have been prepared for general informational purposes only and are not intended as legal advice.