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ANNUAL AVIATION INFRASTRUCTURE REPORT: 2025

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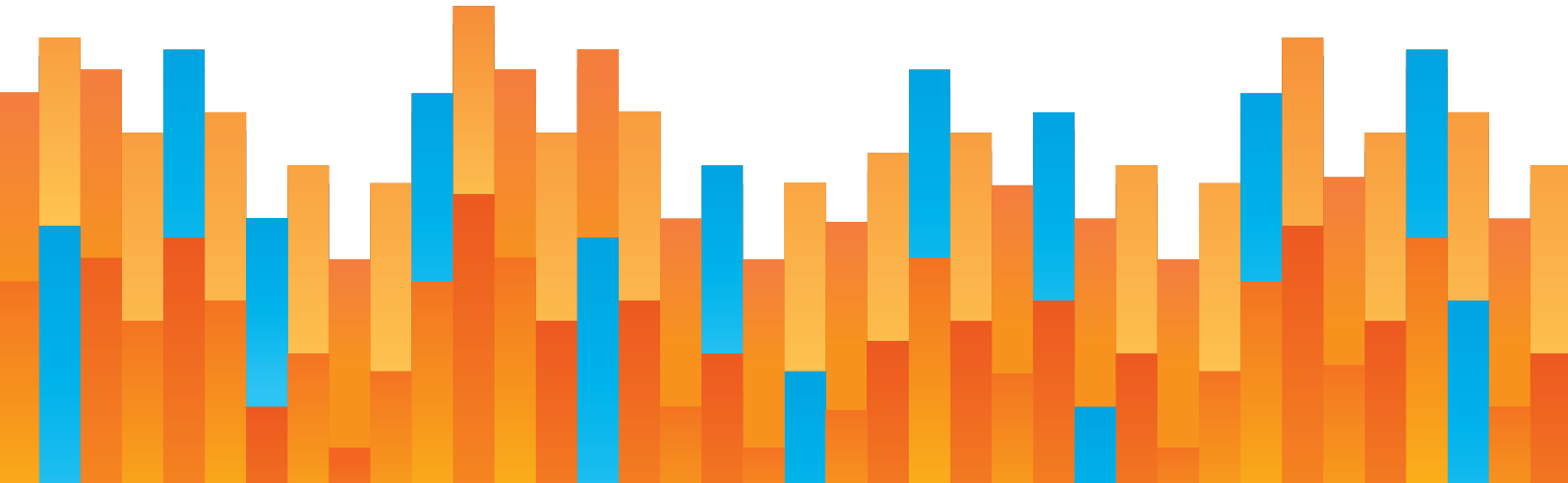

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TABLE OF CONTENTS

PART 1

INTRODUCTION

In the second half of the 20th century, the world's airports and air traffic control (ATC) systems were essentially all departments of governments. Two events in 1987 launched an ongoing wave of organizational and government reforms: the privatization of the British Airports Authority (BAA) and the corporatization of the New Zealand government's ATC functions as Airways New Zealand.

BAA was privatized as a single entity comprising the three major London airports plus several other airports in the United Kingdom. Later government policy decisions led to selling Gatwick, Stansted, and two Scottish airports to new private owners. The improved performance of the privatized airports inspired a global wave of airport privatization and long-term public-private partnerships (P3s) that has resulted in over 100 large and medium-size airports being either sold to investors or long-term leased as revenue-based P3s—in Europe, Asia, Latin America, and elsewhere. The outlier has been the United States, which has only three P3-leased airports (San Juan International, Tweed New Haven, and Avon Park Executive in Florida) and a small number of P3 arrangements for airport terminals and other individual facilities.

The corporatization of Airways New Zealand in 1987 also led to a global trend under which more than 60 countries subsequently separated their ATC systems from the government's transport ministry and set them up as self-supporting corporations, regulated for safety at arm's length from the government. Within the first decade of this trend, the leading ATC providers organized a trade association called the Civil Air Navigation Services

Organization (CANSO). Today CANSO has 93 full members (providers of ATC services) and 91 associate members (mostly supplier companies).[1] CANSO is the ATC counterpart of the global organizations for airlines (IATA) and airports (ACI).

This brief reviews developments in the United States and worldwide regarding private-sector participation in airports and air traffic control. While the United States remains an outlier when it comes to airport and ATC organization and governance, interest in airport privatization via long-term P3 leases continues.

[1] Civil Air Navigation Services Organization, "Member directory," CANSO website, https://canso.org/our-members/member-directory (last accessed 7 Feb. 2024).

PART 2

AIRPORTS

2.1 AIRPORT PRIVATIZATION OVERVIEW

The term "airport privatization" refers to several different types of changes compared to traditional 100% government ownership and operation. The most sweeping form is the sale of the airport's ownership (as in the original BAA privatization) via a public offering of shares. A more common model in most of Europe is the sale of either a majority or minority stake in the airport. In Australia, much of Asia, and Latin America, the most common model is the long-term lease as a public-private partnership (P3). Lease terms typically vary from as few as 25 years to as many as 99 years (Australia). The P3 model is also used for components of an airport, such as a new terminal (or even a new runway, as occurred in Bogotá, Colombia). In the U.S., the P3 model is permitted under federal law for entire airports as well as airport components.

In 2018, trade association Airports Council International released a policy paper on worldwide airport privatization trends.[2] Table 1 is recreated from that report and updated with 2019 passenger traffic data, the most recent available.[3] It shows that Latin America and the Caribbean led the way in the fraction of passenger traffic (77%) at airports with

[2] Airports Council International, "Policy Brief: Creating Fertile Grounds for Private Investment in Airports," Jan. 2018.

[3] Airports Council International, "Policy Brief: Modernizing Global Policy Frameworks on Airport Charges," Nov. 2021.

majority or near-majority private-sector investment, with Europe closely behind at 76%. North America was lowest, at 4% of airports. For the world overall, 45% of all passenger air traffic moves through airports with significant private investment.

TABLE 1: AIR PASSENGER TRAFFIC BY REGION AND AIRPORT OWNERSHIP, 2019

Region	Percent Private	Percent Government
Latin America & Caribbean	77%	23%
Europe	76%	24%
Asia-Pacific	46%	54%
Middle East	27%	73%
Africa	10%	90%
North America	4%	96%
World	45%	55%

Source: Airports Council International, 2021

More than three decades of growth in airport privatization have led to the emergence of global airport companies, some of which began with airports that were privatized early on, such as London Heathrow and Germany's Frankfurt. When new opportunities arise to bid on shares in airport equity or to develop a new airport or terminal via a long-term P3 agreement, these companies are generally among the bidders, sometimes in partnership with infrastructure investment funds and/or public pension funds.

Table 2 lists the largest investor-owned airport companies, ranked according to their 2023 revenue, derived from airport group financial statements. The total 2023 revenue of the investor-owned airport companies is $52.1 billion, representing 35.7% of 2023 total world airport revenue of $146 billion.[4] This reflects a significant recovery of global airport revenue from the pandemic-caused collapse in air travel, which reached a low of $66.3 billion in 2020. The 2023 revenue share of 35.7% is above the pre-pandemic share in 2019, when investor-owned airport companies collected $48.3 billion—or 26.6%—of $181.7 billion total global airport revenue.

[4] Airports Council International, "2025 Airport Economics Report," April 2025.

TABLE 2: LARGEST INVESTOR-OWNED AIRPORT COMPANIES BY REVENUE, 2023

Airport Company	HQ Country	Main Airport(s)	Privatiz. Status	2023 Revenue ($M)	2022 Revenue ($M)	2021 Revenue ($M)	2020 Revenue ($M)	2019 Revenue ($M)
Aeroports de Paris	France	Paris—DeGaulle	Partial	$6,045	$5,016	$3,166	$2,611	$5,264
Aena Aeropuertos	Spain	Madrid	Partial	$5,543	$4,475	$2,768	$2,740	$4,977
Heathrow Airport Holdings	U.K.	Heathrow	Full	$4,682	$3,525	$1,639	$1,606	$4,083
Fraport	Germany	Frankfurt, Lima	Partial	$4,400	$3,418	$2,443	$2,049	$4,150
Vinci Airports	France	Gatwick, Lisbon	Full	$4,342	$2,867	$1,354	$1,209	$2,947
Manchester Airports	U.K.	Manchester	Partial	$1,572	$1,245	$624	$256	$1,183
GAP	Mexico	Guadalajara	Full	$1,526	$1,156	$782	$474	$759
ASUR	Mexico	Cancun	Full	$1,471	$1,160	$782	$451	$826
Flughafen Zürich	Switzerland	Zürich	Partial	$1,471	$1,105	$748	$694	$1,218
Airports of Thailand	Thailand	Bangkok	Partial	$1,444	$480	$213	$1,039	$2,024
TAV Airports	Türkiye	Istanbul	Full	$1,441	$1,125	$595	$368	$856
Corporación América	Argentina	Buenos Aires	Full	$1,400	$1,379	$707	$607	$1,558
New Kansai Intl. Airport	Japan	Kansai	Full	$1,327	$759	$664	$525	$2,084
Mundys	Italy	Rome	Full	$1,311	$994	$800	$496	$1,067
Malaysia Airport Holdings	Malaysia	Kuala Lumpur	Partial	$1,032	$710	$402	$462	$1,259
Flughafen Wien	Austria	Vienna	Full	$1,025	$742	$464	$408	$961
Sydney Airport	Australia	Sydney	Full	$1,013	$700	$453	$619	$1,140
Guangzhou Baiyun	China	Guangzhou	Partial	$900	$576	$829	$800	$1,193
SEA Group	Italy	Milan	Partial	$881	$822	$398	$337	$849
GMR Airports	India	Delhi	Partial	$875	$808	$460	$494	$746
OMA	Mexico	Acapulco	Full	$867	$612	$436	$207	$401
Brussels Airport Co.	Belgium	Brussels	Full	$734	$552	$312	$249	$738
Australia Pacific Airports	Australia	Melbourne	Full	$709	$367	$248	$629	$728
Athens Intl. Airport	Greece	Athens	Partial	$664	$511	$443	$237	$581
Beijing Capital Airport	China	Beijing	Partial	$624	$323	$535	$549	$1,565
Copenhagen Airports	Denmark	Copenhagen	Partial	$569	$508	$264	$259	$652
Brisbane Airport Corp.	Australia	Brisbane	Partial	$561	$341	$326	$570	$584
Düsseldorf Airport	Germany	Düsseldorf	Partial	$453	$375	$238	$229	$530
Perth Airport	Australia	Perth	Full	$401	$247	$212	$331	$346
Auckland Intl. Airport	New Zealand	Auckland	Partial	$388	$190	$191	$407	$490
Budapest Liszt Airport	Hungary	Budapest	Full	$371	$300	$164	$142	$370
Edinburgh Airport	U.K.	Edinburgh	Full	$357	$234	$86	$93	$294
Airports Co. S. Africa	South Africa	Cape Town	Partial	$351	$354	$234	$147	$494
Aeroports de la Côte d'Azur	France	Nice	Partial	$331	$282	$195	$161	$325
Hamburg Airport	Germany	Hamburg	Partial	$285	$232	$147	$146	$308
Gruppo SAVE	Italy	Venice	Partial	$259	$273	$99	$86	$270
AGS Airports	U.K.	Glasgow	Full	$248	$201	$117	$98	$289
Birmingham Airport Holdings	U.K.	Birmingham	Partial	$193	$81	$32	$219	$214

Source: Author's analysis of individual airport company financial statements for FY 2023.

Many privatized airports on this list score highly on the annual Skytrax survey of airline passengers' airport preferences. The majority of the 38 companies in Table 2 have one or more major airports selected by Skytrax passengers as among the world's 100 best airports. Among those included in the top 25 Skytrax airports are Paris de Gaulle (#6), Zürich (#9), Istanbul (#10), Rome Fiumicino (#12), Vienna (#13), Madrid (#15), Kansai (#19), Melbourne (#19), Copenhagen (#20), London Heathrow (#21), and Guangzhou (#25). By contrast, only six U.S. airports rank in the top 50 Skytrax airports: Seattle-Tacoma (#24), Houston Hobby (#29), New York LaGuardia (#33), Houston George Bush (#38), Cincinnati/Northern Kentucky (#46), and San Francisco (#47).[5]

Skytrax respondents also gave high scores to airports in Europe and Asia that have been "corporatized," which means reorganized as a government-owned commercial entity, operating under normal accounting rules and sometimes paying taxes like any other business. Among high-scoring airports of this type were Singapore Changi (#2), Tokyo Haneda (#4), and Munich (#8).

One consequence of airport privatization has been the emergence of airport groups that manage multiple airports. A 2022 study commissioned by ACI identified 27 airport groups comprising 425 airports, which collectively handle 29% of global passenger traffic and 23% of global cargo tonnage.[6] The report found numerous ways in which the airport group model adds value, such as economies of scale, economic resilience, and increased ability to finance capital improvements.

Recent empirical research on the impact of airport privatization found far better airport performance if private infrastructure funds lead the privatization entity.[7] The research team, led by Sabrina T. Howell of New York University's Stern School of Business, began with a database consisting of 2,444 airports in 217 countries over a sample period from 1996 to 2019, of which 437 have been privatized. Since 102 of the airports have been owned at least once by a private infrastructure fund, they were able to compare the performance of airports with majority infrastructure fund ownership and those with none or only a minority stake.

5 Skytrax, "World's Top 100 Airports 2024," https://www.worldairportawards.com/worlds-top-100-airports-2024/ (2 Jan. 2025).

6 Airports Council International, ICF, and Oxford Economics, "Value creation by Airport Groups: A study on the airport group operating model and its benefits to the aviation ecosystem," ACI Study, July 2022.

7 Sabrina T. Howell et al., "All Clear for Takeoff: Evidence from Airports on the Effects of Infrastructure Privatization," National Bureau of Economic Research Working Paper 30544, March 2023, https://www.nber.org/papers/w30544.

> *Among the overall results is that airports with majority infrastructure fund ownership end up with 21% more passengers per flight.*

Among the overall results is that airports with majority infrastructure fund ownership end up with 21% more passengers per flight. Growth in passenger traffic is four times as much for those airports compared with privatized airports without majority infrastructure fund ownership, according to the study. Airports owned by infrastructure funds are more likely to have deregulated airport pricing, which leads to airlines using larger aircraft, on average. And the airport's physical capacity expands, especially the size of its terminals. And while privatized airports of both ownership types show increases in the number of airlines and routes, the increases are larger for airports owned by infrastructure funds, including a far larger increase in service by low-cost carriers. Airports operated by entities controlled by infrastructure funds are also more likely to score higher in ACI's annual Airport Service Quality awards.

After describing a number of tests of their data, the authors conclude that "privatization consistently leads to better performance only with [infrastructure fund] involvement." These companies bring knowledge of global best practices, new managers with higher-powered compensation, and capital. And this leads to new strategies, including investing in capacity expansion, service improvements, and better negotiating with airlines. The authors point out that airline passengers in many cases have options, such as an alternative airport, driving, or rail travel. Hence, service quality becomes very important to infrastructure funds.

2.2 AIRPORT INDUSTRY CHANGES IN 2024

Air travel volume has recovered much more rapidly from the COVID-19 pandemic than many had initially expected. ACI's latest traffic forecast projects global passenger volume to reach 10.1 billion passengers in 2025, 117.4% of the 2019 level.[8] While the gap continues to narrow between the 2019 "business as usual" forecast and current recovery

[8] Airports Council International, "The Trusted Source for Air Travel Demand Updates," ACI Advisory Bulletin, 19 Sept. 2024.

projections, even ACI's optimistic scenario does not erase the anticipated losses from COVID-19 by the end of its medium-term forecast in 2028.

Airport P3 transactions have also rebounded from their 2020 nadir. Data from *Infralogic* are presented in Table 3, which shows 2022 surpassing 2019 in total transaction value and number of projects reaching financial close. The projects include whole-airport projects as well as airport components. Both the number and value of projects reaching financial close in 2024 were down sharply from 2022, but 2022's volume of closed transactions reflects the multiyear process to reach financial close for new projects as well as an uptick in project refinancings driven by pandemic-related economic factors. However, last year's $32.85 billion in airport P3 deal value is still well above the $11.18 billion low point in 2020.

TABLE 3: GLOBAL AIRPORT P3 CLOSED TRANSACTIONS, 2019–2024

	2024	2023	2022	2021	2020	2019
Value ($B)	$32.85	$17.67	$65.79	$35.54	$11.18	$51.10
Projects	56	51	69	57	43	67

Source: Infralogic (2025) and author's calculations.

In addition to the projects reaching financial close, *Infralogic* data for 2024 show 10 airport P3s were launched with a total transaction value of $1.69 billion, compared to three canceled projects worth $250 million. For P3s moving within the project pipeline, 23 projects worth $18.39 billion selected their preferred proponents, signaling the beginning of procurement contract negotiations that more likely than not will lead to financial close.[9]

With respect to the type of transaction, "greenfield" projects, or newly constructed airport facilities, accounted for 44% of total projects and 26% of total transaction value in the pipeline. Privatization of existing government airport facilities accounted for 5% of transaction value and 4% of projects in 2024. In contrast, two partial nationalizations (2% of projects) in which the Danish and Hungarian governments purchased controlling stakes in their capital city airports represented 17% of total transaction value in 2024. Table 4 presents 2024 airport P3 transactions by type.

[9] Author's calculations using *Infralogic* (2025) data.

TABLE 4: GLOBAL AIRPORT P3 TRANSACTIONS BY TYPE, 2024

Type	Value ($B)	% of Total	Projects	% of Total
Greenfield	$13.72	26%	47	44%
Refinancing	$13.67	25%	24	23%
M&A	$9.62	18%	12	11%
Additional Financing	$4.86	9%	17	16%
Privatization	$2.60	5%	4	4%
Nationalization	$9.20	17%	2	2%
Total	$53.67	100%	106	100%

Source: *Infralogic* (2025) and author's calculations.

2.3 GLOBAL AIRPORT PRIVATIZATIONS AND P3 CONCESSIONS

Airport privatization and P3s sharply declined in concert with global passenger traffic in 2020. Since then, rebounding air travel has spurred recovery in worldwide airport privatization and P3 activity. *Infrastructure Investor* in July ran an article headlined, "Airports are once again a favourite."[10] It highlighted airport investors' rebalancing their global portfolios as passenger traffic began exceeding pre-pandemic levels as well as interest in new markets, such as in Malaysia.

2.3.1 EUROPE

In December, **Denmark**'s government agreed to purchase a 59.4% stake in Copenhagen Airports from the Ontario Teachers' Pension Plan and Danish pension fund ATP for approximately €4.3 billion.[11] This transaction will increase the Danish government's ownership in the company to 98%. However, once desired improvements are made, Denmark's Ministry of Finance plans to gradually reduce state ownership to 50.1%.

A winning consortium for the concession of **France**'s Beauvais Airport was announced in April.[12] The consortium is led by French infrastructure group Egis and also includes construction firm Bouygues, Mundys-controlled Aeroports de la Côte d'Azur, and infrastructure fund managers Serena Industrial Partners and TIIC. The new 30-year concession agreement replaces the previous 15-year concession and is valued at €4 billion. The government owner SMABT began talks with potential new concessionaires in August

10 Zak Bentley, "Airports are once again a favourite," *Infrastructure Investor*, 25 July 2024.

11 Brendan Malkin, "Danish state takes majority stake in Copenhagen Airports," *Infralogic*, 4 Dec. 2024

12 Antonio Fabrizio, "Serena, TIIC in winning team for Beauvais airport concession," *Infralogic*, 30 Apr. 2024.

2022 with plans to double airport capacity. The airport is located 50 miles north of Paris and in 2022 was the 10th busiest airport in France with 4.6 million passengers, primarily leisure travelers served by low-cost airlines.

Hungary's Budapest Airport concession was sold in June to a consortium led by Hungarian government-owned investment fund Corvinus.[13] The new consortium is composed of Corvinus (80%) and Vinci Airports (20%), which will also operate the airport, and will assume the remaining 55 years of the concession. The value of the transaction is €3.1 billion in equity plus net debt of €1.2 billion, for a total enterprise value of €4.3 billion. Earnings before interest, taxes, depreciation, and amortization (EBITDA) for Budapest Airport in 2023 was €211, which implies a valuation of approximately 20 times EBITDA. The previous owners were AviAlliance (55.44%), GIC (23.33%), and Caisse de dépôt et placement du Québec (CDPQ) (21.23%).

Also in June, Aeroporti di Roma (ADR), the **Italy**-based airport group owned by infrastructure giant Mundys, announced it had received a binding offer from Mediterranean Shipping Company (MSC) to buy ADR's 15% stake in Genoa Airport.[14] The other two owners of the airport are the local port authority, which holds a 60% stake, and the Genoa Chamber of Congress, which holds a 25% stake.

Montenegro's government in December published a long-awaited request for proposals for two airports, one in the capital Podgorica and the other serving the seaside resort town of Tivat.[15] The concession would entail redevelopment and management of both airports over a 30-year term and is valued at €300 million. The current bidders are Incheon Airports, Corporación América Airports, and a joint venture of Groupe ADP and TAV Airports. The two-airport concession was initially launched in 2019 and narrowed to the current three bidders in early 2020 before being put on hold due to the COVID-19 pandemic.

Also in December, the government of **Poland** canceled its plan to develop a new major airport 25 miles outside of Warsaw, Centralny Port Komunikacyjny (CPK) Airport, with an international consortium led by IFM Investors and Vinci.[16] The current government had opposed the deal entered into by the previous government and instead plans to develop the project with state-owned Polish Airports, which operates two of the four commercial

13 Antonio Fabrizio, "Vinci Airports, Hungarian state buy Budapest Airport," *Infralogic*, 6 June 2024.

14 Antonio Fabrizio, "MSC set to buy Italian airport stake," *Infralogic*, 27 June 2024.

15 Alexander MacLeod, "Montenegro issues RFPs for long-awaited airport concessions," *Infralogic*, 27 Dec. 2024.

16 Alexander MacLeod, "Poland scraps Warsaw airport stake sale to IFM, Vinci," *Infralogic*, 7 Jan. 2025.

airports in the Warsaw area. Per the now-canceled agreement, the consortium would have invested €1.8 billion for a 49% stake in the airport, with state-owned CPK retaining the remaining 51% stake. The planned new airport includes a passenger terminal and two parallel runways, with a 40 million annual passenger capacity.

In the **United Kingdom**, Ferrovial had been seeking to sell most of its 25% stake in London Heathrow Airport. But after announcing its intentions in early 2024, other Heathrow shareholders CDPQ and USS exercised their tag-along rights to sell a combined 35% stake in the airport.[17] This meant Ferrovial needed to find a buyer for the 35% stake before it could reduce its 25% stake. This led to a complex series of transactions among various parties. Under a deal completed in December, infrastructure investor Ardian and Saudi Arabia's Public Investment Fund (PIF) respectively purchased 22.6% of shares and 15%. The deal valued London Heathrow at $10.6 billion. This left Ferrovial holding just 5.25% of shares and tag-along shareholders only 4.75%. Sources told *Infralogic* that Ardian is interested in purchasing the remaining combined 10% stake held by Ferrovial, CDPQ, and USS.[18]

In other U.K. airport news, Vinci Airports in April agreed to acquire a 50.01% stake in Edinburgh Airport from Global Infrastructure Partners for $1.85 billion, or 20 times EBITDA.[19] AviAlliance in November agreed to acquire AGS (Aberdeen, Glasgow, Southampton) Airports from Ferrovial and Macquarie for $1.95 billion, or approximately 23 times EBITDA.[20] AviAlliance owns stakes in the airports of Athens, Düsseldorf, Hamburg, and San Juan, Puerto Rico. Infrastructure investment fund InfraBridge is seeking to sell its 51% stake in Newcastle International Airport.[21] It was announced in January 2025 that Saudi Arabia's PIF had been shortlisted, demonstrating the sovereign wealth fund's growing interest in the U.K. airport market.

2.3.2 CANADA, LATIN AMERICA, AND CARIBBEAN

In **Brazil**, Spanish airport company Aena agreed to invest $401 million to expand the capacity of Congonhas Airport, São Paulo's second-largest airport.[22] The four-year project

17 Alan Dron, "New Names Join London Heathrow Shareholders," *Aviation Daily*, 16 Dec. 2024.

18 Rory Gallivan, "Ardian nears deal for further Heathrow Airport stake," *Infralogic*, 12 Dec. 2024.

19 Brendan Malkin, "Vinci to buy Edinburgh Airport stake for 20x EBITDA," *Infralogic*, 17 April 2024.

20 Nick Roumpis, "AviAlliance to pay GBP 1.54bn EV for AGS Airports," *Infralogic*, 13 Nov. 2024.

21 Rory Gallivan, "Newcastle Airport sale enters final round," *Infralogic*, 20 Jan. 2025.

22 Alan Dron, "Aena Commits to Major Upgrade of São Paulo Congonhas," *Aviation Daily*, 11 April 2024.

will replace the existing terminal with one more than twice its size, increasing the airport's capacity from 17 million annual passengers to 29.5 million. The project will also upgrade the airport's runways.

A new airport development, financing, and management company was founded in **Canada**.[23] In July, Vancouver-based Centerline Airport Partners signed a contract to manage Parma Airport in Italy and is seeking to raise $100 million from investors. Centerline has partnered with Atlantico Capital to help it raise funds in the United States, Europe, Latin America, and Europe.

Chile's government in November renewed concession agreements for two regional airports, Atacama and Antofagasta. The company is a consortium of Madrid-based Sacyr Concesiones (70%) and local partner Cointer (30%). Planned upgrades will begin in 2027 with completion by 2030.

In July, Vinci Airports subsidiary Aerodom paid the **Dominican Republic** government $775 million to extend the duration of its six-airport concession to 2060 and make various facility upgrades as part of a refinancing deal.[24] The largest of the airports, Las Americas International Airport in Santo Domingo, will get a new $250 million passenger terminal, along with improvements to the existing terminal and an expansion of its solar energy facility.

The government of **Guatemala** announced in June it is planning to launch a bidding process for a P3 to manage and improve the La Aurora International Airport in Guatemala City.[25] The airport is currently managed and operated by the government's civil aviation authority.

In **Mexico**, *Infralogic* reported in August that Spain's Aena will sell its one-third stake in Aeropuertos Mexican Pacifico, the publicly traded company that owns 15% of GAP (which operates 12 commercial airports in Mexico's Pacific region).[26] They include Guadalajara, Hermosillo, Los Cabos, and Puerto Vallarta. GAP also owns a majority stake in MJB Airports Limited, which runs Montego Bay's Sangster International Airport and also holds the concession for Norman Manley International Airport in Kingston.

23 Liam Ford, "Canada airports firm raising funds, planning expansion," *Infralogic*, 17 July 2024.

24 Eva Llorens, "Aerodom closes USD 940m financing to extend airport concession," *Infralogic*, 19 July 2024.

25 Kevin Rozario, "Guatemala to Launch PPP Tender to 'Rescue' La Aurora Airport," *Airport Investor Resource*, 28 June 2024.

26 Jonathan Carmody and Eva Llorens, "AENA selling stake in Mexican airports group," *Infralogic*, 5 Aug. 2024.

Turks and Caicos Islands' planned redevelopment of Howard Hamilton International Airport is attracting significant interest in the 30-year P3 concession being offered by the government.[27] Announced bidders include major players Ferrovial, Bouygues, Vinci, Manchester Airports, and GAP. The 30-year project calls for building and operating a replacement of the existing airport at an estimated construction cost of $400 million. The airport will be designed to handle 2.5 million annual passengers.

2.3.3 ASIA AND PACIFIC

In **Australia**, KKR and local partner Skip Capital agreed in September to acquire 74.25% of Queensland Airports Limited (QAL), which valued the airport company at $2.05 billion.[28] QAL owns four regional airports—Gold Coast, Townsville, Mount Isa, and Longreach. Sellers of the 74.25% stake were The Infrastructure Fund, Australian Retirement Trust, and SAS Trustee Corp. Based on QAL's recent earnings, the EBITDA multiple of the transaction was 25.6.

In addition, *Infralogic* reported in October that the three owners of North Queensland Airports (NQA) are planning to sell the company in 2025.[29] NQA owns Cairns and Mackay airports under a 99-year concession it acquired from the Queensland government in 2008. The 25 times EBITDA valuation of QAL suggests NQA could be worth $1.75 billion.

India's Ministry of Civil Aviation in November submitted recommendations on the next phase of airport concessions as part of the country's National Monetization Pipeline.[30] The government plans to invite bids to modernize, operate, and maintain for 13 airports in the next round, whereby seven major airports may be packaged with smaller airports.

After receiving input from 25 private entities, **Japan**'s Toyama prefecture is preparing for a concession of Toyama Kitokito Airport. In February 2025, *Infralogic* reported that the government will soon release application guidelines and hopes to begin the concession in April 2026.[31] The prefecture plans to offer a 10-year concession with an option to extend the term for a maximum of 25 years.

27 Olivia Rose, "Five international companies competing for Howard Hamilton Airport redevelopment," *Turks and Caicos Weekly News*, 1 March 2024.

28 Shaun Drummond, "KKR, Skip consortium win Queensland Airports sale," *Infralogic*, 25 Sept. 2024.

29 Shaun Drummond, "North Queensland Airports auction kicks off," *Infralogic*, 21 Oct. 2024.

30 Yaruqhullah Khan, "Govt aims to start next phase of airport privatisation in 2025-26 Budget," *Moneycontrol*, 7 Nov. 2024.

31 Hiroyuki Kachi, "Japan's Toyama airport concession set for takeoff," *Infralogic*, 4 Feb. 2025.

Malaysia Airports received a formal takeover offer in November, according to an *Infralogic* report.[32] The consortium led by Khazanah Nasional and Employees Provident Fund offered $2.46 per share for the 59% of the company that it does not already own. That offer implied that the airports company is worth $4.1 billion.

Last year, the Auckland, **New Zealand** Council sold nearly half of its 18% stake in Auckland International Airport, using the proceeds to reduce the city's debt. A similar plan in Wellington, which would have sold 34% of the city's stake in Wellington International Airport, was terminated at the last minute via a 9-to-7 vote by the Wellington City Council in October.[33] The city had planned to use the proceeds to help with planned infrastructure projects. In December, the Auckland Council sold its remaining 9.71% stake in Auckland International Airport for $775 million.[34] The underwriter was UBS, which sold the shares to institutional shareholders.

In December, *Infralogic* reported that **Pakistan**'s Civil Aviation Authority had delayed a planned 15-year concession to upgrade and operate Islamabad International Airport after it received a single bid in October.[35] The scope of the project would include modernizing the apron, passenger terminal, parking decks, and cargo and maintenance facilities.

The **Philippines** Department of Transportation announced in October that it plans to privatize four additional airports in 2025.[36] Regional airports in Iloilo, Puerto Princesa, and Kalibo have been selected, and the government also expects to launch a P3 for Davao International Airport. This follows operations and maintenance concessions of Laguindingan International Airport in Northern Mindanao awarded in September and Bohol-Panglao International Airport that is nearing the award stage.

2.3.4 MIDDLE EAST AND AFRICA

In July, the government of **Iraq** launched its first airport P3 to redevelop and operate Baghdad International Airport.[37] The airport is the country's largest and served three million

32 Sonu Mohanty, "Malaysia Airports receives takeover offer," *Infralogic*, 18 Nov. 2024.

33 Lakshmi Iyer, "Wellington Airport stake sale halted," *Infralogic*, 10 Oct. 2024.

34 Sonu Mohanty, "Auckland Council sells airport stake for NZD 1.32bn," *Infralogic*, 5 Dec. 2025.

35 Rouhan Sharma, "Aviation ministry delays Islamabad airport PPP," *Infralogic*, 11 Dec. 2024.

36 Ashley Erika O. Jose, "Four more PHL airports to be privatized next year," *BusinessWorld*, 9 Oct. 2024.

37 Antonio Fabrizio, "Iraq launches first-ever airport PPP," *Infralogic*, 17 July 2024.

passengers in 2023. The Iraqi government aims to award the concession in 2025, although the capital expenditure or duration of the concession have not been disclosed.

In **Kenya**, the government was set to award India's Adani Group a 30-year concession to improve and manage Jomo Kenyatta International Airport in the capital Nairobi in a deal valued at nearly $2 billion.[38] However, the concession was canceled in November after company founder Gautam Adani was indicted by the U.S. Department of Justice for alleged bribery and associated securities law violations.

In December, **Saudi Arabia**'s aviation authority Matarat and National Center for Privatization invited expressions of interest for a 30-year concession to develop the Taif International Airport. This follows last year's announcement of a 30-year concession for another airport near Abha, which attracted expressions of interest from 100 global firms in February.

2.4 U.S. AIRPORT PRIVATIZATION AND PUBLIC-PRIVATE PARTNERSHIPS

European-type sale of government-owned airports is not legal in the United States (except for general aviation airports that serve private planes). The original 1996 federal Airport Privatization Pilot Program permitted a limited number of long-term P3 leases of commercial airports while also exempting the sponsors from certain federal requirements that would otherwise make privatization impractical. Under that law, only two airports were leased. Stewart Airport 60 miles north of New York City was leased in 2000 to a U.K. company that failed to make that airport financially viable; Stewart was subsequently acquired by the Port Authority of New York and New Jersey in 2007. The P3 lease of San Juan's Luís Muñoz Marín International Airport in 2013, however, was a success, leading to large-scale refurbishment and increased airline satisfaction.[39]

As recommended in the White House's 2018 infrastructure proposals, Congress replaced the pilot program with a new Airport Investment Partnership Program (AIPP) as part of the Federal Aviation Administration (FAA) reauthorization law enacted in October 2018. Rather than the limit of 10 airports in the pilot program, long-term P3 leases are now available to all commercial airports. In addition, the AIPP provides for planning grants of up to $750,000 for any jurisdiction that wants to make use of the program to lease its airport. But

38 Rouhan Sharma, "Kenya cancels Adani's airport and power transmission deals," *Infralogic*, 21 Nov. 2024.

39 John Tierney, "Making New York's Airports Great Again," *City Journal*, Winter 2017.

the original pilot program's provision requiring super-majority approval from an airport's incumbent airlines remains in place.

2.4.1 WHOLE-AIRPORT PRIVATIZATION AND P3 LEASES

In September 2021, the New Haven Board of Elders approved a new 43-year lease of the city's **Tweed New Haven Airport**.[40] In August 2022, the Tweed New Haven Airport Authority approved an agreement with its longtime management company, Avports, to enter into a 43-year design-build-finance-operate-maintain (DBFOM) P3 concession.[41] The FAA completed the required environmental assessment for the project in December 2023, meaning that if all mitigations are accepted, Tweed New Haven will become the first commercial airport on the U.S. mainland to operate under a long-term P3.[42] Interestingly, the Tweed New Haven Airport Authority and Avports structured the agreement so that it does not require approval under the FAA's Airport Investment Partnership Program.

Other than the San Juan, Puerto Rico airport's entry into the pilot program in 2013, only two airports have been approved to enter AIPP. **Avon Park Executive Airport** in the south-central Florida city of Avon Park is the most recent airport to receive approval to enter AIPP, with the FAA issuing its record of decision in November 2024.[43] The general aviation airport is under a 30-year P3 lease from the city to Florida Airport Management (FAM), which had previously managed the airport under contract with the city. If FAM performs well according to agreed-upon metrics, it will have the option to extend the lease by up to 19 additional years. As part of the concession, the company will complete 13 improvement projects in the airport master plan that were estimated to cost $14.3 million in 2015.

The other airport that has received approval to enter AIPP is **Airglades Airport** in south Florida. The general aviation airport received final FAA approval in October 2019 but the concession failed to reach financial close by the required October 2020 deadline, which was an explicit condition in the record of decision granting the airport's acceptance into

40 Eugene Gilligan, "Connecticut City Board Supports Airport P3," *Infralogic*, 28 Sep. 2021.

41 Liam Ford, "Board OKs First Full P3 for US Commercial Airport," *Infralogic*, 18 Aug. 2022.

42 Sophia Muce, "Feds Give Okay to Tweed Expansion with 'Finding of No Significant Impact,'" *Connecticut Examiner*, 22 Dec. 2023.

43 Airport Investment Partnership Program, *Notice of availability of the Record of Decision for the participation of Avon Park Executive Airport, Highlands County, Avon Park, Florida, in the Airport Investment Partnership Program (AIPP)*, Federal Aviation Administration, 89 Fed. Reg. 89690 (13 Nov. 2024).

AIPP.[44] The Airglades sponsors were granted an extension by FAA but failed to meet the new July 2021 deadline. In 2024, Airglades hired Goldman Sachs as financial advisor and Clyde and Co. as legal advisors, both experienced firms in airport P3 transactions, suggesting there is still strong interest in realizing the Airglades "logistics city" concept.[45]

> *Aside from long-term leases of existing airports under AIPP, there is also potential for new commercial airports to be developed under P3s.*

Aside from long-term leases of existing airports under AIPP, there is also potential for new commercial airports to be developed under P3s. In August, the Illinois Department of Transportation (IDOT) issued a request for qualifications (RFQ) for what could become the long-anticipated third Chicago airport, known as **South Suburban Airport**.[46] Responses are due in July 2025. IDOT had spent years acquiring 4,500 acres adjacent to Bult Field, a small general aviation airport located southeast of Chicago in fast-growing Will County. IDOT's RFQ focuses on the Inaugural Airport Program, which would be procured under a DBFOM P3 and include a 9,500-foot runway with a full-length taxiway, passenger terminal, cargo facilities, and additional general aviation infrastructure. IDOT has hired KPMG as financial advisor, but it remains to be seen what level of investor interest exists for the project.

There is continued speculation about why the United States is such an outlier compared with most of the rest of the world on airport privatization and long-term P3s. The Congressional Research Service released a report on the subject in early 2021. After comparing the global trend with the very limited use of the recent and current federal program, CRS analysts suggested that unequal tax treatment of revenue bonds (tax-exempt municipal bonds for existing airports versus taxable revenue bonds for private partners) could be a causal factor.[47]

44 Airport Investment Partnership Program, *Notice of availability of the record of decision for the participation of Airglades Airport, Hendry County, Clewiston, Florida in the Airport Investment Partnership Program*, Federal Aviation Administration, 84 Fed, Reg, 53808 (8 Oct. 2019).

45 Jonathan Carmody and Eugene Gilligan, "Goldman Sachs helping private Florida airport develop 'logistics city,'" *Infralogic*, 13 Aug. 2024.

46 Liam Ford, "Illinois issues South Suburban Airport P3 RFQ," *Infralogic*, 19 Aug. 2024.

47 Congressional Research Service, "Airport Privatization: Issues and Options for Congress," Report R43545, 11 March 2021.

A more optimistic outlook was offered in a report from PJ Solomon investment advisors. Their 2021 report found that U.S. airport managers are unable to operate efficiently "due to inefficient procurement policies, lack of flexibility in credit raising, and the bureaucracies that often come from a system with a large and not-always-directly-aligned set of stakeholders."[48] They suggest that the interests of risk-averse municipal bondholders generally prevail over those of airlines, who will be at risk for ensuring airports' financial viability. Hence, they suggest that it is in the interest of airlines to support private capital investment in airports via mechanisms such as AIPP. This is in addition to this program being "the only mechanism for an airport sponsor to realize substantial financial benefits that may be used outside the airport environment."

A study released by Reason Foundation in August 2021 suggests there is good cause for continued investor interest.

A study released by Reason Foundation in August 2021 suggests there is good cause for continued investor interest.[49] The study used valuations from the sale and lease of airports worldwide in recent decades to estimate the potential market value of major U.S. airports owned by city, county, and state governments. It estimated the potential market value of 31 large and medium U.S. airports at $131 billion, including Los Angeles International ($17.8 billion), San Francisco International ($11.9 billion), Dallas/Ft. Worth International ($11.9 billion), and Atlanta's Hartsfield-Jackson ($9.2 billion). And these estimates are possibly too conservative. The report's high-end valuations are based on 20 times earnings before interest, taxes, depreciation, and amortization (EBITDA), a widely used measure of annual cash flow. Following the COVID-19 pandemic, several major airport transactions outside the United States have seen valuations that exceed 20 times EBITDA.

2.4.2 P3S FOR INDIVIDUAL AIRPORT PROJECTS

While whole-airport P3 leases have not become a U.S. phenomenon, recent years continue to see projects that use long-term DBFOM agreements to add large, costly facilities to

48 Tim Bath and Shawn Kinder, "Unlocking Value in the Airport-Airline Ecosystem," PJ Solomon, Jan. 2021.

49 Robert Poole, "Should Governments Lease Their Airports?" Reason Foundation Policy Study, Aug. 2021.

airports. Among these are new or expanded terminals, parking facilities, consolidated rental car centers, and in one case, an automated people mover. These projects are financed in one of two ways. If there is an ongoing revenue stream generated by the project itself, the airport owner can base the P3 financing, in whole or in part, on that revenue stream, generally with the P3 company at risk if the revenue comes in below forecast. If there is not such a revenue stream (as in the case of an automated people mover), then the project can be financed by a guaranteed stream of payments from the owner to the P3 entity over the life of the agreement. This kind of DBFOM is typically called an "availability-payment" structure, since the payments are generally somewhat variable based on the facility's uptime.

If there is an ongoing revenue stream generated by the project itself, the airport owner can base the P3 financing, in whole or in part, on that revenue stream.

New Terminals

Long-term P3s for new airport terminals have a several-decade U.S. history. Among the earliest are the passenger terminals at Orlando Sanford Airport and Terminal 4 at Kennedy International in New York City. More-recent projects include the $8.9 billion Terminal One project and $4.2 billion Terminal 7 project at JFK, both of which reached financial close in 2022. The replacement of the outdated central terminal at New York's LaGuardia Airport opened to great fanfare in December 2021 and won the 2021 UNESCO's best new airport facility competition, as well as being featured in a glowing profile of "the team that fixed LaGuardia" in an October 2022 article in *The Wall Street Journal*.[50] These projects are generally financed based on revenues generated by the terminal, so they are considered revenue-risk DBFOM P3s.

In October, the Port Authority of New York and New Jersey adopted a resolution to fund planning for the development of a new Terminal B at Newark Liberty International.[51] The

[50] Ben Cohen, "LaGuardia Airport Is No Longer the Worst. This Team Fixed It." *The Wall Street Journal*, 15 Sep. 2022.

[51] Eugene Gilligan, "Port Authority authorizes spending for possible airport terminal P3," *Infralogic*, 24 Oct. 2024.

resolution explicitly provides for consideration of private and P3 financing. This followed continued advocacy by infrastructure investment funds for the use of a P3 to upgrade Terminal B, similar to the long-term DBFOM P3s used for new terminals at LaGuardia Airport and John F. Kennedy International. The Port Authority expects to launch a two-to-three-year planning process in 2025.

> *Smaller-scale terminal P3s are also showing promise.*

Smaller-scale terminal P3s are also showing promise. In March, the Virgin Islands Port Authority selected VIports for a 40-year P3 concession to modernize and operate the terminals at King and Rohlson Airports.[52] The concession company is a 50/50 joint venture of Aecon as developer and Tikehau Star Infra as equity partner. The consortium will be known as SkyCity. Financial close and the start of construction are in 2025.

Consolidated Rental Car Facilities

In May, the Conrac Solutions division of Meridiam reached financial close for a new ground transportation center at Reno-Tahoe International Airport.[53] It includes a consolidated rental car center (ConRAC) and other facilities. This project will bring CS's ConRACs to 18. Meridiam acquired CS in May 2023.

In October, *Infralogic* reported that Denver International Airport is beginning a procurement process for a ConRAC.[54] It appears likely to be privately financed, with a customer facility charge as the revenue stream. This would be similar to the approach used for Newark Airport's ConRAC project. Denver Internationals' first step is to hire a program management team for the project.

52 Eva Llorens, "Consortium creates SkyCity for US Virgin Islands airports' redevelopment," *Infralogic*, 4 Oct. 2024.

53 "Meridiam's Conrac Solutions reaches Reno airport P3 financial close," *Infralogic*, 7 May 2024.

54 Eugene Gilligan, "Denver airport to launch procurement for ConRAC management team," *Infralogic*, 22 Oct. 2024.

In December, the Sacramento County Department of Airports issued an RFQ for a new ConRAC at Sacramento International.[55] Responses are due in March 2025. Shortlisted teams will receive the RFP for the project in the second quarter of 2025, with a deadline to submit proposals in the third quarter. The planned multi-level facility is expected to cost $390 million. The agency plans a "hybrid private financing approach" for the project. Customer facility charges will be the revenue source for the project's financing.

Contract Management

Separate from whole-airport P3 leases is contracting out airport operations and management. This approach has been used for decades, with FAA's blessing, most often for general-aviation airports but also for small to medium-size air carrier airports such as Albany, New York and Burbank, California.

Separate from whole-airport P3 leases is contracting out airport operations and management.

Puerto Rico's Public-Private Partnership Authority announced in early 2021 that it plans to seek a contract operator or operators for its nine regional airports.[56] The P3 Authority has had great success with its 40-year P3 lease of San Juan International, which included a large up-front payment and annual lease payments plus revenue-sharing. The regional airports are far smaller, so Puerto Rico initially sought only operating contracts. The Puerto Rico Ports Authority later expressed interest in a revenue-sharing concession instead due to concern about committing to $10 million in annual management fees.

In response, mayors from 14 southern cities urged the creation of a local airport authority to take over and contract out management for one of the nine, Mercedita Airport in Ponce.[57] This local political opposition ultimately led to the Ports Authority abandoning its attempt

55 Eugene Gilligan, "California airport unveils procurement timeline for new rental car facility," *Infralogic*, 9 Jan. 2025.

56 "Puerto Rico P3 Authority Searches for Airport Operator," *Infralogic*, 11 Feb. 2021.

57 Eva Llorens, "Puerto Rico Mayors Pitch Alternative for Mercedita Airport," *Infralogic*, 13 Sep. 2021.

at a concession for the nine airports in September 2022.[58] In August 2023, the P3 Authority announced it was undertaking a feasibility study of a possible concession of the same nine regional airports.[59] In April, the P3 Authority abandoned the concession plan after the feasibility study found the case for P3s to improve and operate the airports did not pencil out.[60]

58 Eva Llorens, "Government Drops Proposed PPP for Nine Regional Airports," *Infralogic*, 19 Sep. 2022.

59 José Orlando Delgado Rivera, "El plan de privatización de aeropuertos regionales debe estar listo para fin de año," *El Nuevo Dia*, 2 Aug. 2023.

60 Maricarmen Rivera Sanchez, "The list of Public Private Partnerships in the pipeline is getting smaller," *El Nuevo Dia*, 8 April 2024.

PART 3

AIR TRAFFIC CONTROL

3.1 AIR NAVIGATION SERVICE PROVIDERS (ANSPS)

Historically, most of the world's governments provided air traffic control (ATC) services as part of the transport ministry, whose aviation division served as both the aviation safety regulator and the operator of the ATC system. That remains the organizational form in the United States, with the FAA providing both of those functions, as part of the U.S. Department of Transportation (DOT).

That model has undergone major change since 1987 outside of the U.S., starting when the reformist government of New Zealand removed its ATC system from the transport ministry by "corporatizing" it as Airways New Zealand, a self-supporting government corporation. Within 10 years, more than a dozen other countries had done likewise, and the fledgling industry created a trade association, the Civil Air Navigation Services Organization (CANSO) as its counterpart to the global organizations representing airlines (IATA) and airports (ACI). CANSO introduced a new term to describe these providers: air navigation service provider (ANSP), which has become standard terminology worldwide.

The revenue source for ANSPs is globally accepted ATC user fees, based on the airport and ATC charging principles promulgated by the International Civil Aviation Organization (ICAO), a United Nations agency. Prior to ATC corporatization, those revenues were nearly always paid by airlines and other airspace users to the respective national governments. In most cases, once an ANSP has been corporatized, the user-fee revenue flows directly to the

ANSP as its primary source of revenue. This makes it possible for the corporatized ANSPs to issue revenue bonds based on their projected revenue streams, just as airports and toll roads do.[61]

Table 5 provides a list of all full member ANSPs of CANSO, separated into organizational categories. The first four are the ones outside of government. Nav Canada is a nonprofit private corporation to which the Canadian government has delegated all ATC responsibilities for both domestic and oceanic airspace. ENAV is the partly privatized ANSP of Italy, with 49% of its shares traded on stock markets. Serco is an investor-owned U.K. company that provides ATC services to governments on a contractual basis. And NATS is the partly privatized ANSP of the U.K., with 42% of its shares owned by airlines and pension funds, 4% by Heathrow Airport, and 5% owned by employees—with the balance of 49% owned by the government.

TABLE 5: AIR NAVIGATION SERVICE PROVIDERS, BY TYPE OF ORGANIZATION

Country	ANSP	Organization Type	Notes
Canada	Nav Canada	Nonprofit corporation	
Italy	ENAV	Part investor-owned	
UK	NATS	Part investor-owned	
UK	Serco	Shareholder-owned	Contract provider
Albania	ALBCONTROL	State-owned company	
Algeria	ENNA	State-owned company	
Argentina	EANA	State-owned company	
Armenia	ARMATS	State-owned company	
Australia	Airservices Australia	State-owned company	
Austria	Austro Control	State-owned company	Also regulates
Belgium	Skeyes	State-owned company	
Bosnia & Herzegovina	BHANSA	State-owned company	
Botswana	CAAB	State-owned company	
Bulgaria	BULATSA	State-owned company	
Cabo Verde	ASA	State-owned company	
Cambodia	CATS	State-owned company	
Croatia	Croatia Control	State-owned company	
Cuba	ECNA	State-owned company	
Curaçao	DC-ANSP	State-owned company	
Czech Republic	ANS CR	State-owned company	
Denmark	Naviair	State-owned company	

[61] Robert Poole, "Air Traffic Control as a Quasi-Private Corporation," eds. Robert Clark and Simon Hakim, *Public-Private Partnerships*, Springer: 2019.

Country	ANSP	Organization Type	Notes
Egypt	NANSC	State-owned company	
Estonia	EANS	State-owned company	
Fiji	Fiji Airports	State-owned company	
Finland	Fintraffic	State-owned company	
Georgia	Sakaeronavigatsia	State-owned company	
Germany	DFS	State-owned company	
Hungary	HungaroControl	State-owned company	Also regulates
Iceland	Isavia ANS	State-owned company	
India	Airports Authority of India	State-owned company	
Indonesia	AirNav Indonesia	State-owned company	
Iran	Iran Airports Company	State-owned company	
Ireland	AirNav Ireland	State-owned company	
Israel	Israel Airports Authority	State-owned company	
Kazakhstan	Kazaeronavigatsia	State-owned company	
Latvia	LGS	State-owned company	
Lithuania	Oro Navigacija	State-owned company	
Maldives	Maldives Airports Co.	State-owned company	
Malta	MATS	State-owned company	
Moldova	MoldATSA	State-owned company	
Morocco	ONDA	State-owned company	
Mozambique	Aeroportos de Moçambique	State-owned company	
New Zealand	Airways New Zealand	State-owned company	
Nigeria	NAMA	State-owned company	
North Macedonia	M-NAV	State-owned company	
Norway	Avinor	State-owned company	
Papua New Guinea	NiuSky Pacific	State-owned company	
Peru	CORPAC	State-owned company	
Portugal	Nav Portugal	State-owned company	
Romania	ROMATSA	State-owned company	
Russia	State ATM Corporation	State-owned company	Also regulates
Saudi Arabia	SANS	State-owned company	
Serbia & Montenegro	SMATSA	State-owned company	
Slovakia	LPS SR	State-owned company	
Slovenia	Slovenia Control	State-owned company	
South Africa	ATNS	State-owned company	
Spain	ENAIRE	State-owned company	
Sri Lanka	AASL	State-owned company	
Sweden	LFV	State-owned company	
Switzerland	Skyguide	State-owned company	
Tajikistan	Tajikaeronavigatsiya	State-owned company	
Thailand	AEROTHAI	State-owned company	
Türkiye	DHMI	State-owned company	

Country	ANSP	Organization Type	Notes
Uganda	UCAA	State-owned company	
Ukraine	UkSATS	State-owned company	
Uzbekistan	Uzaeronavigation	State-owned company	
Vietnam	VATM	State-owned company	
Zambia	NACL	State-owned company	
Bahamas	CAA-B	Civil aviation authority	
Bangladesh	CAAB	Civil aviation authority	Financially autonomous
China	CAAC/ATMB	Civil aviation authority	
Cyprus	DCA Cyprus	Civil aviation authority	
Dominican Republic	IDAC	Civil aviation authority	
Ghana	Ghana CAA	Civil aviation authority	
Jamaica	JCAA	Civil aviation authority	
Japan	JCAB	Civil aviation authority	
Jordan	CARC	Civil aviation authority	Financially autonomous
Kenya	Kenya CAA	Civil aviation authority	
Mongolia	CAA of Mongolia	Civil aviation authority	
Myanmar	DCA Myanmar	Civil aviation authority	
Nepal	CAAN	Civil aviation authority	
Oman	CAA of Oman	Civil aviation authority	
Philippines	CAA Philippines	Civil aviation authority	
Singapore	CAAS	Civil aviation authority	
Swaziland	ESWACAA	Civil aviation authority	
Taiwan	CAA	Civil aviation authority	
Tanzania	TCAA	Civil aviation authority	
Trinidad & Tobago	Trinidad & Tobago CAA	Civil aviation authority	
Tunisia	OACA	Civil aviation authority	
United Arab Emirates	GCAA	Civil aviation authority	
United States	FAA	Civil aviation authority	
Venezuela	INAC	Civil aviation authority	
Azerbaijan	AZANS	Government department	
Brazil	DECEA	Government department	
France	DSNA	Government department	
Greece	HASP	Government department	
Kosovo	ANSA	Government department	
Mexico	SENEAM	Government department	
Netherlands	LVNL	Government department	Financially autonomous
Poland	PANSA	Government department	
United States	DOD PBFA	Government department	Military
Belgium	MUAC	Intergovernmental	
Honduras	COCESNA	Intergovernmental	6 countries
Liberia	Roberts FIR	Intergovernmental	3 countries
Senegal	ASECNA	Intergovernmental	17 countries

Country	ANSP	Organization Type	Notes
Angola	ENANA-EP	uncategorized	
Haiti	OFNAC	uncategorized	
Luxembourg	ANA	uncategorized	
Sudan	Sudan ANS	uncategorized	
Dubai	DANS	uncategorized	
Hong Kong	CAD Hong Kong	uncategorized	

Source: Civil Air Navigation Services Organization (2024) plus author analysis

Next in the table are 64 ANSPs that are wholly owned government corporations, such as Airservices Australia, Germany's DFS, and the pioneering Airways New Zealand. Four of these corporations also have aviation regulatory responsibilities, which conflicts with ICAO's 2001 recommendation that calls for the organizational separation of ATC provision and aviation safety regulation.[62]

Next in the table are 24 of the old-style civil aviation authorities, usually part of the transport ministry and with aviation safety regulation in the same entity as provision of ATC services. These are nearly all developing countries such as Bangladesh, Kenya, Myanmar, and Swaziland. But also included are several developed countries that have not corporatized ATC, including Japan, Singapore, and the United States. Another nine are self-described as government departments, the largest of which are in Brazil and France. The last six in the table were not categorized.

In addition to those are four intergovernmental entities that operate as multi-jurisdictional ANSPs for specific airspaces. Roberts Flight Information Region (FIR) provides air navigation services for Guinea, Liberia, and Sierra Leone in those countries' combined airspace above 3,000 feet. Maastricht Upper Airspace Control Center (MUAC) provides ATC services at altitudes above 24,500 feet for Belgium, Luxembourg, the Netherlands, and northwestern Germany. COCESNA provides ATC services for six Central American countries. And ASECNA provides ATC services for 17 countries in Africa and two overseas departments and regions of France, Réunion, and Mayotte. All four charge ICAO-based user fees and operate as corporatized ANSPs.

Table 5 answers the question: How many ANSPs operate as corporations funded by user fees? The usual answer is 72, consisting of the non-governmental first four, the 64 government corporations, and the four intergovernmental ANSPs. In terms of *countries*

[62] ICAO, *Safety Oversight Manual: Part A*, Doc. 9734, 3rd edition, Paragraph 3.3.4.2, 2017.

served by such ANSPs, however, the total is higher; adding the three countries served by Roberts FIR, the six served by COCESNA, and the 17 countries served by ASECNA brings the net total to 98.

3.2 GLOBAL SPACE-BASED ATC SURVEILLANCE

A basic function of an ATC system is surveillance—keeping track of where planes are in real time. Historically, air traffic control over most populated countries has, since World War II, relied largely on radar, later supplemented by transponders that report altitude and other basic information in real time. But there is no radar in the oceans, in mountainous terrain, and in polar regions, all of which are traversed by aircraft, including airliners. Surveillance there has long been carried out by "procedural" methods, which means periodic reports from pilots to ATC of their estimated positions based on the plane's inertial navigation system. Since those updates are both imprecise and only periodic, ATC protocols require very large spacing between oceanic flight tracks and between planes flying the same flight track.

A basic function of an ATC system is surveillance—keeping track of where planes are in real time.

This began to change in 2019, when an investor-owned company—Aireon—started offering near-real-time global surveillance via satellite. The company contracted with satellite company Iridium to place its transponders on all 66 satellites in its new Iridium-Next constellation that was launched mostly in 2018. Since most ANSPs are now implementing ground-based surveillance using a system called ADS-B (automatic dependent surveillance-broadcast), business jets and airliners flying oceanic, mountainous, and polar routes are generally equipped with ADS-B transponders that broadcast the plane's identity, GPS position, speed, and other data every three seconds. That signal is detected by the new satellites and retransmitted to domestic ANSP control centers that subscribe to Aireon's services. The space-based information then shows up on controllers' screens, just as do ADS-B transmissions in domestic airspace.

Aireon's service, which went live in March 2019, can now offer radar-like surveillance to the 70% of the globe where this has been lacking.

Aireon's service, which went live in March 2019, can now offer radar-like surveillance to the 70% of the globe where this has been lacking. But it is only available to ANSPs that subscribe to the service. With the addition of the Port Moresby Flight Information Region of Pacific airspace in March 2021, Aireon reported that its system is in use in over 248 million sq. km. of the earth's service—nearly 49% of the total.[63] Subsequent additions brought Aireon's subscriber coverage to more than half of the world's airspace as of March 2024.[64] Subscribers include the ANSPs of Azerbaijan, Canada, Denmark, the Dutch Caribbean, France, Hong Kong, Iceland, India, Ireland, the Philippines, Portugal, Singapore, South Africa, the U.K. and three multi-country providers: Eurocontrol's MUAC, the six COCESNA countries of Central America, and the 17 African countries of ASECNA.

Aireon is a joint venture of Iridium and five ANSPs: ENAV, AirNav Ireland, NATS, Nav Canada, and Naviair (Denmark). The first to implement oceanic ADS-B service were Nav Canada and NATS across the North Atlantic. While that was technically a trial, ICAO agreed that the two ANSPs could reduce the lateral spacing (between tracks) and longitudinal spacing (nose to tail on a given track) for the period of the trial, with further reductions likely once performance has been measured and analyzed. Results during 2019 showed significant savings in time and fuel (and hence CO_2 emissions), as well as safety benefits from controllers able to quickly identify deviations from assigned tracks or assigned altitudes. Significantly reduced traffic levels during 2020 enabled NATS and Nav Canada to experiment with "free route airspace" rather than restricting traffic to the traditional North Atlantic Organized Track Structure (OTS). In 2021, the two ANSPs operated without OTS for 20 days, on which airlines submitted their preferred flight tracks for approval.[65] The next step is to eliminate OTS completely.

63 Press Release, "NiuSky Pacific Begins Operational Usage of Aireon Data," Aireon, 20 March 2021.

64 Emily Feliz, "Aireon to Begin Development of Space-Based VHF Communications Services to Augment its Industry-Leading Surveillance System," Aireon, 7 March 2024.

65 Tony Osborne, "ANSPs Start Scaling Back North Atlantic Organized Track Structure," *Aviation Daily*, 9 Feb. 2022.

Aireon's competition until recently has come from Inmarsat, which operates a communications mechanism known as ADS-C. Among other communications services, it has long provided airlines with position reporting at 10- to 14-minute intervals, by contract (the C in ADS-C). Inmarsat has proposed an "enhanced" version that would transmit reports every 3.2 minutes (compared with every three *seconds* for space-based ADS-B).[66] Inmarsat was originally an international satellite communications agency, but its commercial services were privatized in 1999, and it was listed on the London Stock Exchange in 2005. In 2019, it was acquired by a joint venture of infrastructure investment funds: Apax Partners and Warburg Pincus plus two Canadian pension funds, CPPIB and OTPP.[67] In 2023, Inmarsat was sold to U.S. satellite communications company Viasat.[68]

"The competitive landscape may be changing. Canberra-based Skykraft reached an agreement with Airservices Australia to launch and operate a 200-satellite constellation to improve ADS-B coverage in Australia and its oceanic airspace."

The competitive landscape may be changing. Canberra-based Skykraft reached an agreement with Airservices Australia to launch and operate a 200-satellite constellation to improve ADS-B coverage in Australia and its oceanic airspace. The first five satellites were launched via a SpaceX Falcon 9 launch vehicle from Cape Canaveral in January 2023 and were successfully activated in LEO later that month.[69] Skykraft launched a second batch of satellites on a Falcon 9 from California's Vandenberg Space Force Base in June 2023, bringing the total to 10.[70] Subsequent launches to complete the initial 60-satellite constellation are scheduled for 2025, with space-based ADS-B service to go live in 2026.[71]

66 GAO-19-532, "FAA's Analysis of Costs and Benefits Drove It Plans to Improve Surveillance in U.S. Oceanic Airspace," Government Accountability Office, July 2019.

67 "Inmarsat Acquired by Private Equity Consortium for $3.4bn." *Air Traffic Management*, 25 March 2019.

68 Kerry Reals, "Viasat completes Inmarsat acquisition," *FlightGlobal*, 5 June 2023.

69 Press Release, "Australia's largest ever satellite constellation now active," Skykraft, 12 Jan. 2023.

70 Press Release, "Skykraft lifts off with another Air Traffic Management satellite stack for 2023," Skykraft, 13 June 2023.

71 Press Release, "Skykraft Satellite Filings Published for 2976-Satellite Air Traffic Management Constellation," Skykraft, 18 March 2024.

The service will include controller-pilot VHF communications in addition to ADS-B surveillance. In August, Skykraft announced an agreement with Niusky Pacific to offer its space-based ADS-B and VHF services throughout Papua New Guinea's domestic and oceanic airspace.[72] Niusky is a current subscriber to Aireon's space-based ADS-B service. In December, Aireon also announced plans for a new satellite constellation that will provide subscribers with both ADS-B data and VHF communications worldwide, especially in oceanic and remote airspace.[73]

In addition, it was announced in May 2021 that Spain's ANSP Enaire had teamed with Spanish technology and defense contractor Indra in creating a new company called Startical, whose aim is to develop a space-based system to provide both ADS-B surveillance and VHF communications between pilots and controllers.[74] The plan would make use of a constellation comprising at least 270 satellites in low-Earth orbit. The company announced in February 2025 that it is conducting final testing of its demonstrator satellite and plans to launch it in mid-2025.[75]

In 2019, the FAA signed a research agreement with Aireon aimed initially at exploring the use of its ADS-B data in the Caribbean. This focused on using a modified version of the En Route Automation Modernization (ERAM) system at Miami Center to control traffic between Miami and San Juan, but the FAA also modified the Advanced Technologies and Oceanic Procedures (ATOP) software used in its New York, Oakland, and Anchorage Oceanic Centers for experimental use in their oceanic airspaces. In January 2020 *Aviation Daily* reported that the FAA was developing a one- to three-year roadmap to expand its use of space-based ADS-B. And in November 2020, FAA and Aireon announced an agreement under which the agency will use the company's ADS-B data to analyze possible uses in managing both domestic and oceanic air services.[76] FAA has so far declined to subscribe to Aireon's space-based ADS-B service.

72 Press Release, "Skykraft and Niusky Pacific to transform Papua New Guinea's airspace using space-enabled technology," Skykraft, 14 Aug. 2024.

73 Emily Feliz, "Aireon Achieves Major Milestone to Bring Space-Based VHF to Aviation Marketplace," Aireon, 10 Dec. 2024.

74 Graham Warwick, "Spain Plans Space-Based Surveillance Communications Constellation," *Aviation Daily*, 2 June 2021.

75 Press Release, "Startical unveils its IOD-2 satellite, a key advancement in air communication and surveillance from space," CANSO, 11 Feb. 2025.

76 Robert Poole, "FAA to Use Aireon Space-Based ADS-B Data," *Aviation Policy News*, Nov. 2020.

3.3 DIGITAL REMOTE AIR TRAFFIC CONTROL TOWERS

In 2007, the FAA research center in Atlantic City, New Jersey, conducted a demonstration project on a new kind of airport control tower. Instead of a tall building with a staffed control cab on top, the FAA evaluated carrying out tower functions using cameras and other sensing devices at various airport locations, with the control cab and large display screens on the ground. Besides saving the cost of constructing and maintaining the tall building, the demonstration showed that controllers would have increased visibility (especially at night and in rain or fog when infrared cameras provided better views) and decreased workload.[77] Despite these very positive results, the FAA declined to pursue remote tower deployments.

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Drawing on these findings, technology companies and corporatized ANSPs overseas began developing and testing remote tower concepts. LFV in Sweden and Avinor in Norway were among the first to implement remote tower programs, and the first remote tower to be certified for operational use was developed for LFV by Saab-Sensis Corporation and became operational in 2015. In the years since then, remote towers have been planned or implemented in Australia, Brazil, Denmark, Germany, Hungary, Romania, and the U.K., among others. Germany, Sweden, and Norway have subsequently implemented remote tower *centers* in which controllers can manage air traffic at a number of airports from a single location, providing additional cost savings. Such centers are already in operation in Germany, Norway, and Sweden and are in the planning stages in other countries. An August 2023 market forecast from Kings Research projected the global remote tower market to grow from $129 million in 2022 to $1.3 billion by 2030.[78]

[77] Daniel Hannon, et al., "Feasibility Evaluation of a Staffed Virtual Tower," *Journal of Air Traffic Control*, Vol. 50, No. 1, Winter 2008.

[78] "Remote Towers Market: Global Industry Analysis and Forecast 2023-2030," Kings Research, Aug. 2023.

During the past year, there were several new remote and digital tower developments in Asia, Europe, and North America.

- In February, remote/digital tower developer Frequentis signed a memorandum of understanding with Singapore's ST Engineering to cooperate on remote/digital tower projects in Singapore and Southeast Asia.[79] The project will focus on both civil and military use cases for such facilities.
- In April, Belgium's ANSP Skeyes launched its Digital Tower Test Center in Steenokkerzeel.[80] It is a prototype for the digital control center being set up by Skeyes and the Walloon airport operator in Namur. By 2026, air traffic at both Charleroi and Liege airports will be managed by the new center in Namur. The digital tower center will be responsible for air and ground traffic at both airports.
- In May, the Estonian Transport Administration approved the startup of remote operations of Kuressaare Airport from the Estonian Air Navigation Services (EANS) remote tower center in Tallinn, the country's second remote/digital tower.[81] The remote/digital tower facilities were developed and installed by Adacel. EANS has announced its intention for Estonia to become the world's first country in which all the regional airport tower services are provided remotely.
- In June, Kongsberg announced an agreement with Nav Canada to provide "digital tower solutions" for the world's second-largest (by traffic) ANSP.[82] The initial facilities will be installed at Kingston Airport (in Ontario) and at a test facility in Ottawa, according to Nav Canada CEO Raymond Bohn.
- In July, Kongsberg signed a contract with Norwegian ANSP Avinor to add three more digital towers at small airports managed from Avinor's digital tower center in Bodo, bringing its total to 14 airports managed from that location.[83] The contract also calls for Kongsberg to expand and upgrade the Bodo center so that it can add seven additional small airports, planned to be in operation by 2027.

79 Press Release, "Deployable digital tower solutions to receive a boost in Singapore through FREQUENTIS and ST Engineering," Frequentis, 20 Feb. 2024.

80 Press Release, "Launch of Digital Tower Test Centre by skeyes," Skeyes, 25 April 2024.

81 Press Release, "Adacel and EANS second digital tower operational at Kuressaare Airport," Adacel, 22 May 2024.

82 Press Release, "KONGSBERG to deliver remote air traffic services for NAV CANADA," Kongsberg, 24 June 2024.

83 Press Release, "KONGSBERG to deliver remote towers to seven new Norwegian airports," Kongsberg, 3 July 2024.

- In October, Belgium's South Charleroi Airport deployed its remote/digital tower camera mast.[84] At 37 meters high, it exceeds the height of the airport's conventional tower and allows better views of all aircraft movements on the ground and during arrivals and departures. The imagery will be displayed on screens at Belgium's new remote tower center near Brussels Airport in Steenokkerzeel, where imagery from both airports will be viewable when the remote tower center becomes operational by the end of 2026.
- In December, Frequentis announced an agreement with Avinor to modernize Norway's airspace management.[85] The centerpiece of the deal is an integrated system at Oslo Airport that will replace the current Advanced Surface Movement Guidance & Control System and its Electronic Flight Strips system with an integrated system that combines flight data, air and ground routing data, departure management and safety tools into integrated controller workstations. A second phase will include remote/digital tower services for 14 regional airports.
- Also in December, Frequentis was awarded a contract to provide a digital tower for Greenland's new Qaqortoq Airport.[86] This decision avoids the larger expense of constructing a conventional control tower for a greenfield airport, as well as providing superior performance under low-visibility conditions.

By contrast, remote tower progress in the United States has been very slow. In the 2018 FAA reauthorization, Congress authorized a pilot program under which the agency would develop and test five remote towers at five different locations, but did not provide funding. Two U.S. remote tower projects have begun the FAA certification process, one in Leesburg, Virginia, and the other at Loveland, Colorado, near Fort Collins. They have been funded by a combination of state funds and private investment, not by the FAA.[87]

In addition to these two projects, two others are in preliminary planning stages.

In Selma, Alabama, local officials have proposed a remote tower center at Craig Field, a former Air Force base. If approved, this would be the first remote tower center in the U.S.[88]

84 David Kaminski-Morrow, "Digital-tower mast installed at Brussels Charleroi airport," FlightGlobal, 23 Oct. 2024.

85 Press Release, "FREQUENTIS and Avinor to advance automated tower operations across Norway," Frequentis, 17 Dec. 2024.

86 Press Release, "FREQUENTIS supplies Digital Tower solution in Greenland," Frequentis, 19 Dec. 2024.

87 Robert Poole, "Remote Towers: Europe Many, U.S. Zero," *Aviation Policy News*, 21 May 2021.

88 Robert Poole, "More Remote Towers Coming to the United States," *Aviation Policy News*, 27 June 2022.

The Selma Economic Development Authority has reached agreements with Advanced ATC, Inc., a firm founded by former FAA air traffic control managers, and Spain's Indra, which has developed and deployed remote/digital towers in Europe.

In North Carolina, the city of Concord signed a P3 agreement with Norwegian technology provider Kongsberg in April 2022 to replace the aging conventional control tower at Concord-Padgett Regional Airport with a modern remote tower.[89] Kongsberg stated that it planned to begin the FAA certification process in 2023.

In November 2021, the FAA issued an "operational viability decision" on the Saab Remote Tower System at Leesburg, authorizing it to continue managing traffic without a backup mobile tower.[90] This was not official certification, but it did trigger the type certification process between Saab and the FAA, which would allow the Leesburg remote tower to be approved as a non-federal system within the National Airspace System. Congress included $4.9 million in FY 2022 appropriations to fund contract controllers for type certification at Leesburg, as well as fund operational viability testing at Fort Collins.[91]

However, in February 2023, the FAA announced it would terminate the operations of the Leesburg remote tower on June 14.[92] Saab had sent a letter to the FAA in 2022 announcing that it was pulling out of the project after nine years. The company told *The Washington Post* that it "determined there is no reasonable path for approval" under the FAA's shifting certification requirements.[93] The FAA's primary internal advocate of the technology, its former vice president of air traffic services, had also been reassigned to another role within the agency in 2022.

Following the news out of Leesburg, it was reported that the Fort Collins remote tower project was "on life support."[94] Vendor Searidge pulled out of the Colorado tower project in October 2023. The local project sponsors have brought in Frequentis and Raytheon in an

89 Press Release, "Kongsberg and the City of Concord Complete First Milestone Toward Air Traffic Management Modernization," Kongsberg Gruppen, 20 Apr. 2022.

90 Robert Poole, "More on FAA and Remote Towers," *Aviation Policy News*, 22 Nov. 2021.

91 Consolidated Appropriations Act, 2022, H.R. 2471, Division L Explanatory Statement, 15 March 2022.

92 Robert Poole, "Is FAA Giving Up on Remote Towers?" *Aviation Policy News*, 23 March 2023.

93 Lori Aratani, "This air traffic control system helped to grow flights. Now it's being shut down." *The Washington Post*, 11 Apr. 2023.

94 David Hughes, "Colorado Airport's Remote Tower on Life Support," *Aviation International News*, 11 Apr. 2023.

attempt to salvage progress made to date and complete system design approval, but FAA is no longer supporting the project.[95]

While less advanced than Leesburg or Fort Collins, Friedman Memorial Airport in Hailey, Idaho also reconsidered a remote tower after running into problems at FAA. The board of Friedman Memorial announced in April 2021 that it planned to develop a request for proposals for a digital remote tower and seek FAA approval to enter its pilot program. In January 2022, Friedman Airport selected a Frequentis/Raytheon partnership as the main technology vendor. But the airport ultimately decided to pursue a conventional brick-and-mortar tower, citing FAA's costly requirement to obtain certification at the Tech Center in Atlantic City and federal funding made available only to conventional tower projects.[96]

> *These latest setbacks suggest the FAA bureaucracy is resistant to remote and digital tower technology.*

These latest setbacks suggest the FAA bureaucracy is resistant to remote and digital tower technology. The FAA Reauthorization Act of 2024 included provisions in Section 621 aimed at breaking the FAA logjam on remote/digital towers.[97]

First, the law requires FAA to create a clearly defined system design and operational approval process, and to publish milestones for achieving testing and deployment approval within 180 days of enactment on May 16, 2024. The lack of clear formal standards and FAA's ad hoc approach to system design approval bedeviled airport sponsors and technology vendors, and deterred interest in remote/digital towers in the United States. This provision also requires FAA to "assess the safety benefits of a remote tower against the lack of an existing tower," which will hopefully help the agency better understand the risks and costs that arise from inaction.

95 Bill Carey, "Colorado Advances Digital Tower Effort Dropped by FAA," *Aviation Week*, 6 March 2024.

96 Emily Jones, "Friedman reports 'very healthy' revenues ahead of major capital projects," *Idaho Mountain Express*, 17 Jan. 2024.

97 Marc Scribner, "FAA Reauthorization Boosts U.S Remote Towers," *Aviation Policy News*, 19 June 2024.

Second, Sec. 621 partially reverses a 2022 FAA decision to force vendors to install their systems at the FAA Technical Center in Atlantic City, New Jersey for evaluation rather than allow those systems to be evaluated at the airports at which they would be operated, a costly deviation from international best practices. Specifically, the law requires that FAA expand system design approval to at least three locations outside the Tech Center by the end of 2024.

Third, despite the many setbacks, the new law recognizes the significant progress made toward achieving system design approval by Northern Colorado's project, and that forcing them to restart from square-one under the new mandated process would be cost-prohibitive. To that end, Sec. 621 states that FAA should not interpret anything in the new law as invalidating prior system design approval activity and that existing work toward this goal should be preserved.

Fourth, to allow for better congressional oversight of FAA's efforts to implement the new remote tower law, Sec. 621 requires the FAA to brief legislators within 180 days of enactment and every six months thereafter through Sept. 2028. These regular briefings should help bring needed transparency to FAA's work on remote towers, where opaqueness was a common complaint among external stakeholders.

> *…the law amends the FAA Contract Tower Program's and Contract Tower Cost Share Program's enabling statutes to explicitly add eligibility for remote towers. This aims to level the playing field between conventional brick-and-mortar towers and remote towers.*

Finally, the law amends the FAA Contract Tower Program's and Contract Tower Cost Share Program's enabling statutes to explicitly add eligibility for remote towers. This aims to level the playing field between conventional brick-and-mortar towers and remote towers. These changes should both increase the ability of small airports to add tower service and reduce per-airport expenses through lower-cost remote towers. Sec. 621 also orders FAA to prioritize testing and deployment of remote towers at those airports that currently lack air

traffic control towers, wish to provide small and rural community air service, or are new entrants into the Contract Tower Program.

To date, the FAA has made minimal progress at implementing the remote/digital tower provisions contained in the 2024 reauthorization. Ensuring this law is carried out as intended will likely require significant and aggressive oversight by Congress.

3.4 U.S. AIR TRAFFIC CONTROL REFORM

Efforts to have the United States corporatize its ATC system, joining the global trend, began in earnest during the Clinton administration. The idea was proposed by Vice President Al Gore's National Partnership for Reinventing Government, and then studied in depth by a task force in the Office of the Secretary of Transportation. That effort failed due to lukewarm support from airlines, strong opposition from the private plane community, and the lack of a champion in Congress. Various partial reforms were attempted during the George W. Bush administration, but they got no further.

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In 2012 the Business Roundtable organized an ATC reform group to develop a business plan for a nonprofit, user-funded, stakeholder-governed ATC corporation, similar to Nav Canada (the world's second largest ANSP, after FAA's Air Traffic Services division).[98] That effort found a congressional champion in Rep. Bill Shuster (R, PA), then chairman of the House Transportation & Infrastructure Committee. The committee held hearings on the subject in 2014, with strong support from Airlines for America and the National Air Traffic Controllers Association. The bill drafted by the Republican majority was approved by the committee in 2016, but it was strongly opposed by private-plane groups Aircraft Owners and Pilots Association (AOPA) and National Business Aviation Association (NBAA), as well as all federal employee unions except the air traffic controllers.

98 Robert Poole, "Air Traffic Control as a Public Utility," Reason Foundation Policy Study, 15 June 2023.

The bill was revised in 2017 to address concerns raised by small airports and private plane groups, and it was approved by the T&I Committee in 2018. But House Republican leadership did not bring it to the floor, lacking the votes to ensure passage, due in part to an unfulfilled White House commitment to lobby wavering Republican members.[99] There was also no companion ATC provision in the Senate bill, due to intense lobbying of rural-state senators by the anti-corporatization coalition led by private-plane groups AOPA and NBAA. FAA reauthorization was enacted later in 2018 with no ATC reform title. ATC governance reform was also not included in Congress' 2024 reauthorization of the FAA.

[99] Lauren Gardner, "How ATC Got Grounded," *Politico*, 2 April 2018.

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