



Making airport operations more secure, agile and profitable

A case for multi-airport AOS deployments



Multi-airport AOS deployments elevate airport operations

Traditionally, an owner or operator of an airport network would have installed a stand-alone Airport Operations Systems (AOS) at each and every airport to enable effective and efficient flight turnaround operations. That is now in the past.

A truly multi-airport capable AOS means that multiple airports throughout an entire network of stations can all be managed from a single multi-airport AOS deployment, and elevate the entire airport operations ecosystem.

A multi-airport AOS deployment offers an **agile environment for safe, innovative and customer-centric airport operations** while **enabling potential for collaborative decision-making through optimized processes and aligned systems**. It can gear a back-end IT setup to support the holistic, cross-functional, data-driven way of working that underpins a profitable multi-airport network; even more so when a number of the outstations are small setups and thus able to leverage economies of scale.

Four reasons to consider a multi-airport AOS

ADB SAFEGATE Airport Systems has rich experience in deploying and supporting multi-site AOS deployments over the past 15 years. As partners to leading airport and airline networks - Delta Air Lines FIDS (22 sites), Panama AOS (4 sites), ONDA Morocco AOS (23 sites), ACSA South Africa (4 sites) and ASECNA Africa (17 sites), we have gained some insight into what value drivers and benefits can be attained by the airport operator from a multi-airport AOS deployment.





More modular, more flexible

A multi-airport AOS allows you to deploy and use selected modules from the solution to match the scale of each airport in the network to support:

- Greater flexibility as smaller sites may only need FIDS (Flight Information Display System) and AS-VISION, 'ops center in your pocket' real-time mobile device capability, from a centrally managed multi-airport AODB (Airport Operational Database)
- Central planning of all flight operations, associated resources and allocations across multiple airports
- A common, centralized system that minimizes the risk of staff single point of knowledge dependencies typical of a small airport in a network
- A faster setup that's operational more quickly with fewer resources needed at each individual airport to set up, operate and maintain the AOS



Central setup improves cybersecurity

- Retaining control on IT governance centrally and not allowing local sites to overturn/override centrally defined implementation structures ensures better cybersecurity and resilience
- This lowers the overall cyber attack surface, and minimizes risks as there are fewer cyber threat attack vectors to be managed



Lower costs boost profitability

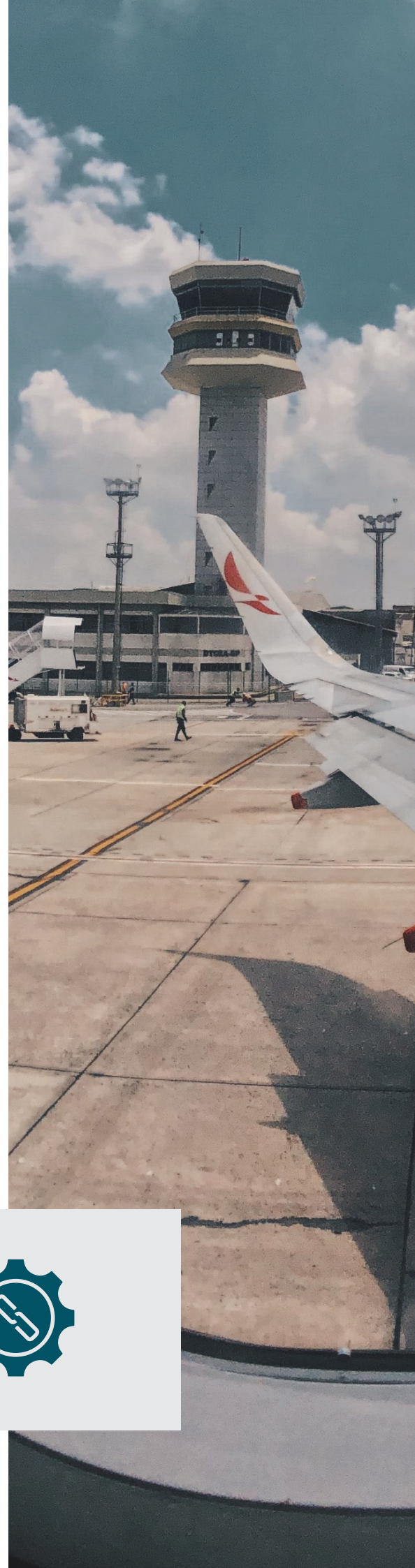
- There is no need to deploy physical server infrastructure at each airport – just a network connection to connect to the display screens and mobile device or thin client workstation based to remotely access the AOS system
- Simpler back office infrastructure management and commercial off-the-shelf (COTS) software licensing enable cost savings, and allow airport networks to leverage economies of scale. System updates and enhancements are implemented once only and many sites benefit from them simultaneously

Eliminating the need to deploy stand-alone servers and COTS licensing at each airport can save at least **USD 30,000 - 40,000** per airport upfront and as much again over a five-year period on these costs alone. For a seven-airport network, savings of **USD 400,000 – 500,000** are possible.

Network synergy effect

Airport networks can leverage synergies by deploying a multi-airport AOS. When managing and overseeing a network of airports together as a combined solution, a multi-airport AOS provides a view on the overall network; the up and down stream view from each individual airport that otherwise would not have been possible. This becomes clear when you enable a multi-airport view in a centralized command center for the entire airport network.

- Going by the industry-leading example of the Airport Operations Control Center (AOC) as set up at Belo Horizonte International Airport (CNF), a centralized command center for the entire airport network, would deliver a multiplier effect that not only optimizes use of resources but provides more insights and information possible from the elevated view over the entire network. Each remote airport can access the center via AS-VISION
- Deploy and optimize resources more efficiently by providing all stakeholders including airlines and ground handling agents (GHAs) a 360-degree view of their operations across the airport network
- Achieve uniformity and consistency of data inputs and outputs across the network thanks to a common interface
- Reduce delays with early warnings - our trials at various airports indicate that with the AOC having full connectivity between the airports, you can save time through timely, early warnings. For e.g. earlier warning of late departure from the up station, earlier warning of elderly/infirm, reduced mobility, special assistance passengers on board); the earlier the warning, the more time available to prepare and prevent a knock-on delay
- Airport network operators can measure the network effect of on-time performance (OTP) for all airlines and drive better OTP by sharing real-time performance statistics from the single data source. (One of our customers chose to do this and make the data visible on their public website- net effect was that all airlines worked to increase OTP so as to avoid negative passenger perceptions – everyone ended up as a winner as a result)
- Maximize brand impact: Consistent corporate branding and passenger experience from the FIDS at all sites to reinforce the airport operator's brand in the passenger's mindset whenever they fly at any airport in the network



We bring true multi-airport AOS capability

In response to real-world airport ownership and operating configurations, ADB SAFEGATE Airport Systems' applications are designed to be scalable for multi-airport deployment. Our multi-site, multi-terminal AOS application software can support multiple airports with multiple terminals, from a single logical system and database. Airport Systems' applications are truly multi-airport. All information is stored in a central repository and is logically segregated per airport. The multi-airport solution allows the AOS at the master/primary location to support local operations at each of remote airports using centrally managed server hardware (infrastructure) and associated networking.

Our experience in multi-site deployments includes a wide spectrum of airport size and complexity within the target multi-site network - Delta Air Lines FIDS (22 sites), Panama AOS (4 sites), ONDA Morocco AOS (23 sites), ACSA South Africa (4 sites) and ASECNA Africa (17 sites).

23 of Morocco's airports use resources better, save costs and realize network synergies with multi-airport AOS

In 2017, ONDA, the national airport authority for the Kingdom of Morocco in North Africa went through an audit of the IT infrastructure and systems. Subsequently they sought to find a provider to modernize IT and deliver an AODB/RMS solution for a multi-airport AOS platform.

ADB SAFEGATE Airport Systems equips all 23 airports in Morocco with this system and data warehouse functionality, including the supply and support of servers, workstations and all COTS licenses. Airport Systems was awarded this contract in 2019 following a competitive tender process, thanks to our good working knowledge of ONDA, and being an incumbent FIDS and Billing provider for many years.

Our Aeronautical Charge Calculation (AS-BILLING) solution underpins more than 85% of ONDA's aeronautical revenues received across its network each year. This is the level of trust that our customer places with us to provide an excellent solution and service.

The network is huge: Starting with ONDA's biggest airport Casablanca which supports 16 million passengers annually, and four more international airports whose size ranges between 2 and 8 million, 16 more domestic airports with under 1 million annual passengers, and finally a further two airfields that do not support commercial flights, only private and general aviation.

Our multi-airport AOS caters for all of this - most of the activity being done at the central base station (Casablanca), with FIDS and Billing deployed to all remote airports and the larger four airports also having AS-RMS, our resource management system available for their use to help efficiently manage their flight operations.

1. Agadir Al Massira Airport
2. Al Hoceima Airport
3. Beni Mellal Airport
4. Casablanca Mohammed V International Airport
5. Essaouira-Mogador Airport
6. Errachidia Airport
7. Laâyoune Hassan 1 Airport
8. Fes Airport
9. Ben Slimane Airport
10. Guelmim Airport
11. Nador Al Aroui Airport
12. Oujda Angads Airport
13. Ouarzazate Airport
14. Zagora Airport
15. Marrakesh Menara Airport
16. Rabat-Salé Airport
17. Tetuan Airport
18. Tan Tan Airport
19. Tangier Ibn Battouta Airport
20. Bouarfa Airport
21. Dakhla Airport
22. Casablanca Titmellil Airport
23. Ifrane Airport

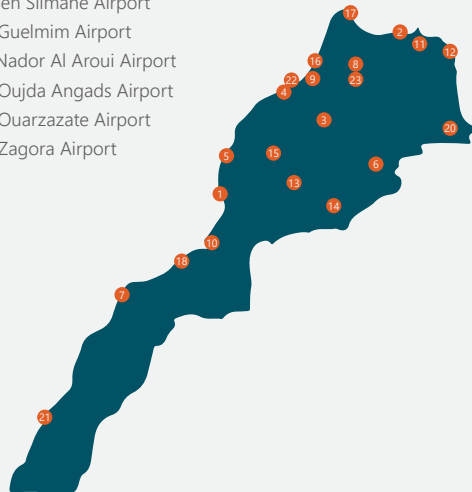




Image Source: <https://www.oec-eng.com/>

Smoother operations at Tocumen-Panama International Airport

Airport Systems' suite of solutions - Airport Operational Database (AS-AODB), Resource Management System (AS-RMS), Integration Broker (AS-IB), Aeronautical Charging System (AS-BILLING) and the Flight Information Display System (AS-FIDS) running 500 displays, are in use at this airport. The implementation's success and subsequent smooth operations has led to a close working relationship that helped to support Panama Tocumen's rapid expansion. The project includes delivery of software application licenses, implementation, configuration, testing, training, and third line, 24x365 support. The Airport Operational Systems are hosted at Tocumen and rolled out

to three additional domestic airports within the group, these being:

- DAV – David Chiriquí Enrique Malek Airport
- RIH – Rio Hato Coclé Scarlett Martinez Airport
- BLB – Panamá Howard Pacífico Airport

These airports are considered by Panama's government to be essential national infrastructure, yet are very small with not more than two commercial flights a day. Therefore, implementing a multi-airport AOS solution with FIDS and Billing locally deployed and centrally managed was the optimal approach for both operational efficiency and cost effectiveness.



Delta Air Lines uses ADB SAFEGATE's FIDS to elevate passenger experience

At Delta Air Lines, our FIDS solution is running on over 1900 display screens at the following 23 airports across America, which are a mix of large and small-scale deployments alike. The system is primarily hosted in data centers in Atlanta, and for additional resilience and load balancing it has two further data center deployments; one in central USA and one on the west coast. With all the FIDS screens managed in a consistent manner with common input, a consistent corporate branding and passenger experience at all sites helps maximize airline brand impact in passenger mindset wherever they fly with Delta.

- ATL-Atlanta
(480 screens, 3000 flights/day)
- MSP-Minneapolis
(280 screens, 1200 flights/day)
- BOS-Boston
(70 screens, 300 flights/day)
- CVG-Cincinnati
(95 screens, 175 flights/day)
- JFK-New York
(110 screens, 1000 flights/day)
- DFW-Dallas
(370 screens, 1350 flights/day)
- DTW-Detroit
(13 screens, 125 flights/day)
- EWR-Newark
(20 screens, 40 flights/day)
- SLC-Salt Lake City
(127 screens, 600 flights/day)
- LGA-La Guardia
(115 screens, 550 flights/day)
- LAX-Los Angeles
(80 screens, 850 flights/day)
- MIA-Miami
(4 screens, 40 flights/day)
- MSY-New Orleans
(5 screens, 30 flights/day)
- MCO-Orlando
(22 screens, 65 flights/day)
- PBI-Palm Beach
(8 screens, 20 flights/day)
- TPA-Tampa
(8 screens, 35 flights/day)
- ORD-Chicago
(22 screens, 65 flights/day)
- MEM-Memphis
(10 screens, 25 flights/day)
- PDX-Portland
(10 screens, 100 flights/day)
- SEA-Seattle
(30 screens, 150 flights/day)
- SFO-San Francisco
(25 screens, 250 flights/day)
- DCA-Washington
(11 screens, 55 flights/day)
- FLL-Ft Lauderdale
(9 screens, 35 flights/day)

Elevate airport operations

The heightened security, agility and flexibility that come with a multi-airport AOS deployment can take an airport network's operations to the next level. By moving to a more customer-centric, data-driven way of working, airport networks can come closer to collaborative decision making. The cherry on top: the potential to boost profitability by leveraging the network multiplier effect and economies of scale.

For more information, please contact us at enquiries@airport-systems.com or call at the numbers listed for your region:

<https://adbsafegate.com/contact/airport-systems/>

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