

What's Inside

01	A Familiar Scene (And a Better Way)	3
02	What's Already Deployed: Adoption at Local & Regional Airports	4
03	Why Airports are Investing: Benefits and ROI You Can Model	6
04	What Good Looks Like at Airports	8
05	Implementation Roadmap	9
06	Stakeholders and Their Roles	12
07	Cost and Total Cost of Ownership (TCO)	13
08	20-Year Field Notes: How Mvix Helps Local & Regional Airports	14
09	Governance: Keep Content Crisp, Safe, and Useful	15
10	Risks to Retire Early	16
11	Emerging Trends You Can Adopt Without Boiling the Ocean	17
12	Your 90-Day Action Plan	18
13	Frequently Asked Operational Questions	19
14	The Business Case	20
15	Calm, Clarity, and Capacity	21



A Familiar Scene (And a Better Way)

It's 6:42 a.m. A harried traveler sprints from security toward what they think is Gate A8. Overhead announcements are muffled, the paper map they grabbed at the counter is out of date, and the one departure board they passed is swarmed. They pause, second-guess themselves, and hustle back to a crossroads... only to watch their flight push back through the windows. Stress for the traveler; ripple effects for gate agents and operations.

Small and regional airports don't have staff to spare for constant redirection or manual updates and yet wayfinding, safety, and the overall experience still have to feel effortless.

That's where Signage Screens—especially Flight Information Display Systems (FIDS), Gate Displays (GIDS), Baggage Displays, (BIDS), and Interactive Displays for wayfinding—quietly do their best work. Done right, they deflect questions from staff, compress decision time for travelers, and keep flows stable even when plans change.

This whitepaper is written for airport operations managers, general managers, and project managers evaluating modernization projects. It details adoption, benefits, ROI, implementation steps, stakeholder roles, costs/TCO, & what's next.

What's Already Deployed: Adoption at Local and Regional Airports

FIDS: An Operational Staple

FIDS is a mature, near-universal function at U.S. commercial airports. While public sources rarely break out a precise adoption percentage for small/non-hub airports alone, three signals establish how mainstream FIDS has become:

- ACRP and TRB guidance have treated passenger wayfinding and displays as standard terminal functions for over a decade, with formal guidelines (e.g., ACRP Report 52) designed to be adapted across large, medium, and small airports.
- Vendor and case-study footprints show multi-user FIDS installed at small/regional sites

(e.g., Atlantic City International (ACY) deployed FIDS, GIDS, BIDS and visual paging across its terminals and 10 gates).

- Market data indicates a mature, growing global FIDS market—consistent with broad penetration and ongoing refresh cycles (e.g., The FIDS market size was ~\$1.2B in 2024 and is continuously growing).

Practical Takeaway: FIDS adoption is essentially universal across U.S. commercial service airports, with most using outside integrations or airport-owned systems to centralize and distribute flight information to signage screens.



Interactive Wayfinding: Growing Fast from a Smaller Base

Interactive kiosks and touch-driven wayfinding are newer than FIDS and, as such, adoption is widespread at large hubs and growing steadily among smaller airports. Evidence points to an acceleration:

- Airport kiosk markets (covering wayfinding and info kiosks) are on an 8–9%+ CAGR path through the decade, showing sustained global airport investment.
- Engagement data from kiosk programs shows strong usage potential (e.g., ~38% of travelers on average engage with a kiosk; session times ~3.2 minutes), making a credible case for ROI at smaller facilities with fewer staff.
- Recent deployments, including Philadelphia International's digital wayfinding program (with real-time info and optimal paths), San Diego (SAN)'s multi-language interactive displays, and Columbus (CMH)'s interactive wayfinding kiosks demonstrate operational value and design patterns transferrable to regional airports (fewer kiosks, tighter layouts, simpler content, reduced overhead).

Working estimate: Based on public case studies, RFP activity, and vendor rollouts, an estimated 25–35% of small and non-hub U.S. airports have implemented interactive wayfinding displays, with many others planning pilots as part of terminal refresh projects funded through federal programs.





Why Airports are Investing Benefits and ROI You Can Model

Operational De-stress

- **Real-time clarity:** When FIDS data and service alerts propagate instantly to every Signage Screen, agents field fewer “is my gate still...?” inquiries, concentrating on exceptions. ACRP guidance positions consistent wayfinding and displays as core passenger experience drivers across airport sizes.
- **Quantified impacts:** A Frost & Sullivan-cited analysis found ~15% reductions in passenger wait times and ~20% improvement in operational efficiency following digital directories deployment—benefits driven by self-service information and better flow. (While not limited to small airports, the drivers—wayfinding clarity and faster self-navigation—apply at any scale.)

Revenue and CX lift

- **Concessions and dwell time:** Smarter directional prompts (e.g., This café is 2 minutes on your route to Gate 7) lift conversions without detours; SAN’s program interweaves promotional content with maps and supports localization (e.g., food-court-adjacent screens emphasize nearby options).
- **Ad inventory:** Wayfinding kiosks that rotate to promotional frames during idle cycles create sellable media inventory without cluttering sightlines—Philadelphia’s program pairs navigation with digital ads, a template that works in smaller terminals at lower density.



Accessibility, Compliance, and Inclusivity

- Modern Signage Displays help airports implement ACRP's accessible wayfinding practices for aging travelers and persons with disabilities (e.g., tactile cues, higher-contrast layouts, consistent iconography, and alternate modes like visual paging and text maps).

Total cost and grant leverage = surprisingly strong ROI

- **Capital leverage:** The Airport Terminal Program (ATP) under the Bipartisan Infrastructure Law funds terminal modernization; for small hub, non-hub, and nonprimary airports, the federal cost share can be up to 95%, dramatically improving payback math for signage, kiosks, and IT integrations packaged within terminal projects.
- **IT momentum:** Airport IT spending has risen since 2020 (to an estimated \$34.5B in 2023 across airlines/airports), with innovation focus areas that include airport operations and passenger management systems.

Back-of-the-envelope ROI

Assumptions: 500k annual enplanements; 8 Signage Screens (FIDS), 2 Interactive Displays; 5% kiosk engagement; +1% concession conversion among exposed passengers; average concession basket \$9.

Result: ~\$225k incremental gross concession sales annually (before share). Combine with labor-time recapture (e.g., 0.25 FTE of agent time reallocated from answering routine questions) and disruption cost avoidance (irregular ops comms), and simple paybacks of 1.5–3.5 years are common when leveraging ATP/AIP grants to cover capital.

What **Good** Looks Like at Airports

- **Atlantic City International (ACY)** — Implemented an Airport Information Management System with FIDS, GIDS, BIDS, and visual paging across terminals and gates—key for non-hub operations with multiple carriers and seasonal variability.
- **San Diego (SAN)** — Designed interactive wayfinding that orients maps to users, supports multiple languages, and lets staff localize promotional content by individual zones. Patterns you can scale down to 1–3 kiosks in a regional terminal.
- **Columbus (CMH)** — Deployed wayfinding kiosks that extend beyond the terminal to surface local transport, food, and hotel options—a helpful template for airports serving visitors new to the region.
- **Philadelphia International (PHL)** — Added custom kiosks with real-time flight info, optimal paths, and remote assistance, and monetized idle cycles with ads—showing how a single asset can pull double duty.





Implementation Roadmap

From RFP to live operations

1. Operational Outcomes (1–3 weeks)

Start with the “jobs to be done.” For small/regional airports, these often are: reduce lost-passenger queries, compress time from security to gate, surface TSA wait times, standardize visual paging, and promote local concessions. Align with ACRP wayfinding principles as a baseline so designs scale well and remain consistent.

Artifacts to produce

- Passenger journey map (arrivals curb → check-in → security → gate; and arrivals hall → baggage → ground transport).
- Screen zoning plan (where FIDS displays, where Interactive Displays, where promotional Signage Screens).
- Data source inventory (airline feeds, baggage and gate displays, TSA wait-time sources, paging system, emergency alerts, day-parting needs).

2. Systems Integration (1–2 weeks)

Your FIDS/GIDS/BIDS should be the single source of truth for departure/arrival data. Favor airport-owned or common-use environments that make upgrades and vendor changes easier, an approach recommended in ACRP guidance on integrating airport information systems.

Checklist

- Choose an integration that natively integrates airline feeds and can push to all Signage Screens.
- Decide on visual paging and emergency override behavior.
- Configure data fallbacks (e.g., airline portal scrape, manual entry) for resilience.

3. Content and UX (2–6 weeks)

Design FIDS views (Departures, Arrivals, Combined), disruption templates (IRROPS banners), and wayfinding UI (search by airline, gate, food, restroom; ADA-compliant contrast and font sizes). Leverage ACRP guidance for accessibility, especially for aging travelers and people with disabilities.

Wayfinding UX minimums

- “You are here,” shortest path + time estimate to destination.
- Hand-off to phone via QR (no app required) for easy access.
- Multi-language toggles.
- Idle “attractor” loop with promos localized to that kiosk’s zone (as SAN does).





4. Hardware & Networking (1–2 weeks)

Small airports can do a lot with a little

- **FIDS:** 6–10 strategically placed Signage Screens often cover ticketing, post-security concourse, baggage claim, and arrivals hall.
- **Interactive Displays:** 1–3 kiosks in high-decision zones (post-TSA split, main concourse crossroads, baggage/ground transport, FAQs).
- **OPS:** Open Pluggable Specification (OPS) are modular players that slide into the displays, Use PoE or single-drop network where possible; standardize on OPS/SoC media players to simplify maintenance.

5. Security & Failover

- Lock down media players with allowlists and kiosk mode.
- Use centralized device monitoring (hearts beats, screenshots, auto-reboot windows).
- Document fallback plans (FIDS to static templates, kiosks to non-interactive map if API is down).

6. Training and go-live (1–2 weeks)

Create runbooks for operations staff: updating advisories, posting IRROPS banners, triggering emergency takes over. In practice, teams log into a browser-based CMS; the system syncs to screens in seconds.

Stakeholders and Their Roles

- **Airport Operations:** Own “single source of truth,” emergency messaging rules, disruption playbooks, content governance.
- **IT/Systems:** Own network, device provisioning, identity/access, integrations (FIDS ↔ screens, TSA feeds, paging).
- **Facilities/Projects:** Coordinate power, mounts, ADA clearances, and construction phasing to avoid passenger impacts.
- **Concessions/Commercial:** Define merchandising rules for idle cycles on Interactive Displays; align promos to passenger flows.
- **Airlines/Tenants:** Provide data interfaces, agree on common use standards, validate airline branding in FIDS rows.
- **Accessibility/Community Affairs:** Validate language coverage, visual paging, and ADA accommodations against ACRP guidance.
- **Vendor/Integrator:** Provide playbooks, training, remote monitoring, and SLAs for uptime and content turnaround.



Total Cost of Ownership (TCO)

One-time Capital:

- FIDS software licensing & integrations: \$5k–\$10k (size, feeds, redundancy).
- Signage Screens & players: \$1.2k–\$2.5k per screen fully installed (mounts, power/network runs vary).
- Interactive Displays (kiosks): \$5k–\$25k each turnkey (enclosure, 43–55" touch, software).
- Project management & design (wayfinding maps, content): \$3k–\$15k (scope-dependent).

Annual Operating:

- Software/CMS/FIDS support: \$1k–\$5k (tiered by airport size and SLA).
- Remote monitoring & warranty: \$3k–\$12k.
- Content refresh (optional managed service): \$5k–\$25k.



Grant leverage: The ATP federal share can reach 95% for small/non-hub airports, substantially de-risking capital budgets and compressing ROI windows when signage is included within terminal projects. Pair with AIP/AIG where applicable to round out funding.

Reality check: Costs depend on existing data maturity (FIDS vs. airline email/manual), security/compliance requirements, and construction variables. Your integrator should model options (OPS displays vs. external players; kiosk density; single vs. redundant servers) to fit budget and risk tolerance.

20-Year Field Notes

How Mvix Helps Local and Regional

Project Case – Non-hub, Upper Midwest: The airport ran manual spreadsheets for departures. We deployed FIDS integration, standardized iconography per ACRP guidance, and added two Interactive Displays at the post-TSA decision point and baggage. Within 90 days, agents reported a ~30% drop in “where is my gate?” questions, and concessions saw a measurable lift where promos were geofenced to the kiosk zone. (Illustrative of typical results; actuals vary by layout and traffic mix.)

Project Case – Mountain West (tourism-heavy): Seasonal peaks created pressure at information desks. We implemented Signage Screens with real-time FIDS, integrated visual paging, and stood up a simplified Interactive Display that hands off directions to mobile via QR. The team uses a one-click IRROPS template to take over all screens, critical during winter weather.

Project Case – Southeast regional:

The airport modernized baggage and ground-transport guidance. We added directional prompts that estimate walking time to rental car, rideshare, and shuttle stands. Complaints about getting lost dropped, and curbside congestion eased as fewer passengers backtracked.

Across hundreds of regional deployments over two decades, the Mvix approach has been consistent: pair a robust FIDS backbone with right-sized screen placement, simple, ADA-aware design, and an airport-owned content model so local teams aren't dependent on outside designers for every alert. (Where data or staffing are thin, we offer managed updates and remote monitoring to keep things lightweight for your team.)





Governance & Monitoring

Keep Content Crisp, Safe, and Useful

1. Content Taxonomy

Always live: Departures/Arrivals, visual paging status, emergencies/alerts.

Contextual: TSA wait times, restroom nearest, concessions on-route.

Promotional: local food, rental offers, airport events (within idle cycles).

2. Design Rules

High-contrast palettes, consistent iconography, large enough type for 20–30 ft viewing, reduced animations, and AA/AAA accessibility targets following ACRP guidance.

3. Emergency Behavior

Pre-approved takeover templates (orange/amber advisories; red emergency overrides) tested quarterly.

4. Metrics & Device Health

Uptime, data latency, kiosk engagement %, top searches, and “assists avoided” (sample via quick intercept surveys at info desk after go-live). Vendor dashboards should expose device health and screenshots for spot checks.

Common Pitfalls

- **Fragmented Data:** If staff are cutting/pasting from airline portals, standardize FIDS first.
- **Over-customized Maps:** Start simple (gates, restrooms, security, concessions); add specialty layers later.
- **“Set-and-forget” Content:** Stale promos or wrong hours erode trust. Give concessions a monthly update cadence.
- **No Accessibility Review:** Engage disability advocates early and test contrast, fonts, and interaction paths.





Emerging Trends You Can Adopt

- **AI-assisted Content Ops:** Generate banners and multilingual advisories from operational triggers; summarize TSA delays in plain language on Signage Displays (with human review/approval).
- **Machine-learning for Wayfinding:** Learn popular flows (e.g., Easiest path to Gate 5 with stroller) and reorder suggestions; predict congestion and pre-emptively re-route flows on kiosk maps.
- **Context-aware Layouts:** Data-driven “scene” changes (e.g., during peak bank departures, prioritize FIDS rows and security wait times; during late night, switch to ground transport and local hotel information.)
- **Deeper Integrations:** Tie Interactive Displays to visual paging, PRM assistance, and mobile hand-off so a single interaction can serve multiple needs.

Your 90-Day Action Plan

WEEKS 1–2

Discovery & Definition

- Confirm outcomes, draft zoning, inventory data.
- Select a pilot zone (one kiosk + 4–6 FIDS Signage Screens).

WEEKS 3–6

Procure & Integrate

- Choose a FIDS platform and kiosk software.
- Configure data feeds, visual paging, content needs, emergency templates.
- Draft wayfinding map and search taxonomy.

WEEKS 7–10

Install & Iterate

- Install hardware in pilot zone; verify ADA placement and sightlines.
- Soft-launch in a low-impact zone; gather feedback from agents and passengers.

WEEKS 11–13

Expand & Train

- Roll out remaining screens; finalize runbooks and SLAs.
- Set a quarterly governance cadence (content cleanup, emergency tests, device checks).

B 12

Belt 12

CC 457

Kuala Lumpur



First Bag



Terminal 2



Gate B 14



Frequently Asked Questions

Do we need a large server room?

No. Most small airports run cloud-managed CMS/FIDS with lightweight on-prem gateways or none at all. Redundancy can be cloud-native (multi-region) with local caching players.

What if airline feeds differ?

Pick an integration with configurable priorities (airline → AODB → ASDI → manual) and anomaly detection for mismatches.

How many Interactive Displays do we need?

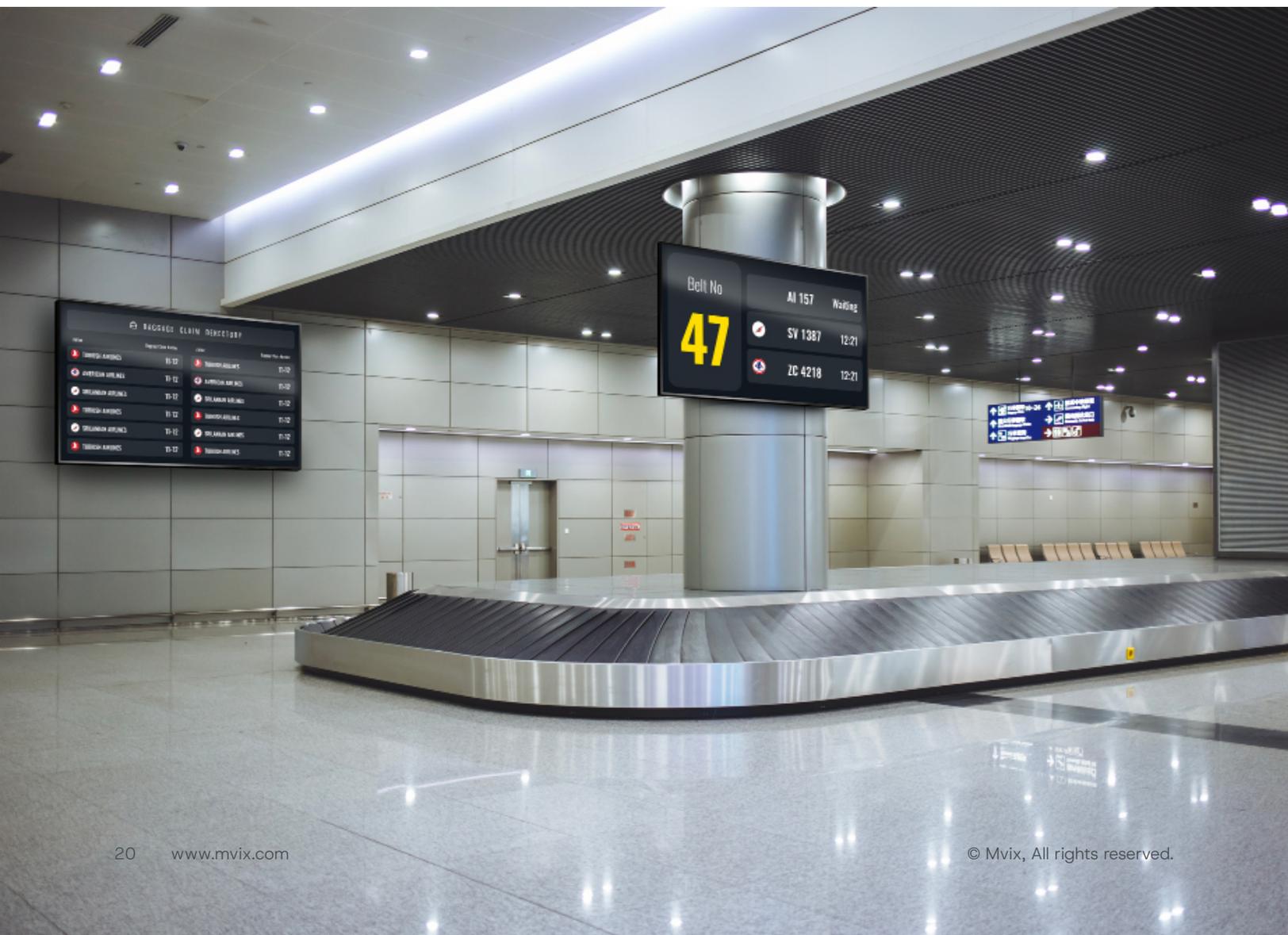
Start with 1–3 in high-decision nodes. Measure engagement and questions at the info desk; scale only if justified.

Can we monetize screens?

Yes. Idle cycles on kiosks and select concourse Signage Screens can carry paid promos or concession highlights. Ensure content rules preserve clarity; wayfinding always wins over ads.

The Business Case

- **Adoption:** FIDS is effectively universal in commercial service airports; Interactive Displays are rapidly expanding from large hubs to small/regional sites.
- **Benefits:** Reduced wait times (~15%), improved staff efficiency (~20%), consistent emergency comms, measurable concession lift via route-aware prompts.
- **Feasibility:** Airport IT investment is rising year over year; Grants can fund up to 95% of eligible terminal-tied projects at small, non-hub airports.
- **Doable footprint:** 6–10 FIDS Signage Screens + 1–3 Interactive Displays cover most small airport layouts.
- **Low burden:** Browser-based updates, remote monitoring, and airport-owned content.





Calm, Clarity, and Capacity

When a traveler knows exactly where to go, stress drops, dwell time becomes intentional, and staff shift to higher-value work. For small and regional airports, Display Screens, Interactive Displays, and Signage Screens are not “nice to have.” They’re how lean teams deliver large-airport clarity while keeping capital efficient and operations resilient.

With modern FIDS at the core, integrated wayfinding kiosks, and a simple governance process, your airport can go from “help desk by default” to “self-service by design.” And with today’s grant environment and maturing platforms, the timing has never been better.



Contact



23475 Rock Haven Way
Suite 125 Sterling, VA 20166 (USA)



+1 866 310 4923
+1 703 382 1739



www.mvix.com



info@mvix.com

© Mvix, All rights reserved.