



# Total Airport Management Solution

DELIVERING THE NEXT GENERATION AIRPORT

## Benefits of Total Airport Management

- ▶ Greater end-to-end visibility across landside and airside operations
- ▶ More accurate passenger movement predictions
- ▶ Increased retail revenues and loss mitigation
- ▶ Improved resource planning
- ▶ Enhanced passenger experience
- ▶ Improved competitiveness of an airport in a changing market
- ▶ Key enabler for collaborative planning processes

Airports are busy and complex environments to manage. Delivering the best possible passenger experience involves synchronizing multiple operations and stakeholders. A problem in one area can have a cascading and potentially disastrous effect on others. With worldwide passenger traffic growing exponentially, how do airports manage capacity constraints and better handle potential disruptions?

Next generation airports are getting ahead of issues before they become disruptions, with Leidos' Total Airport Management (TAM) solution. Using real-time data from a variety of sources and applying innovative data management, planning and forecasting tools, airport operators and stakeholders are detecting, and even predicting, passenger needs hours in advance—and working together to deal with emerging situations before they become problems.

## Total Airport Management Approach

### INCREASING COLLABORATION & INFORMATION SHARING

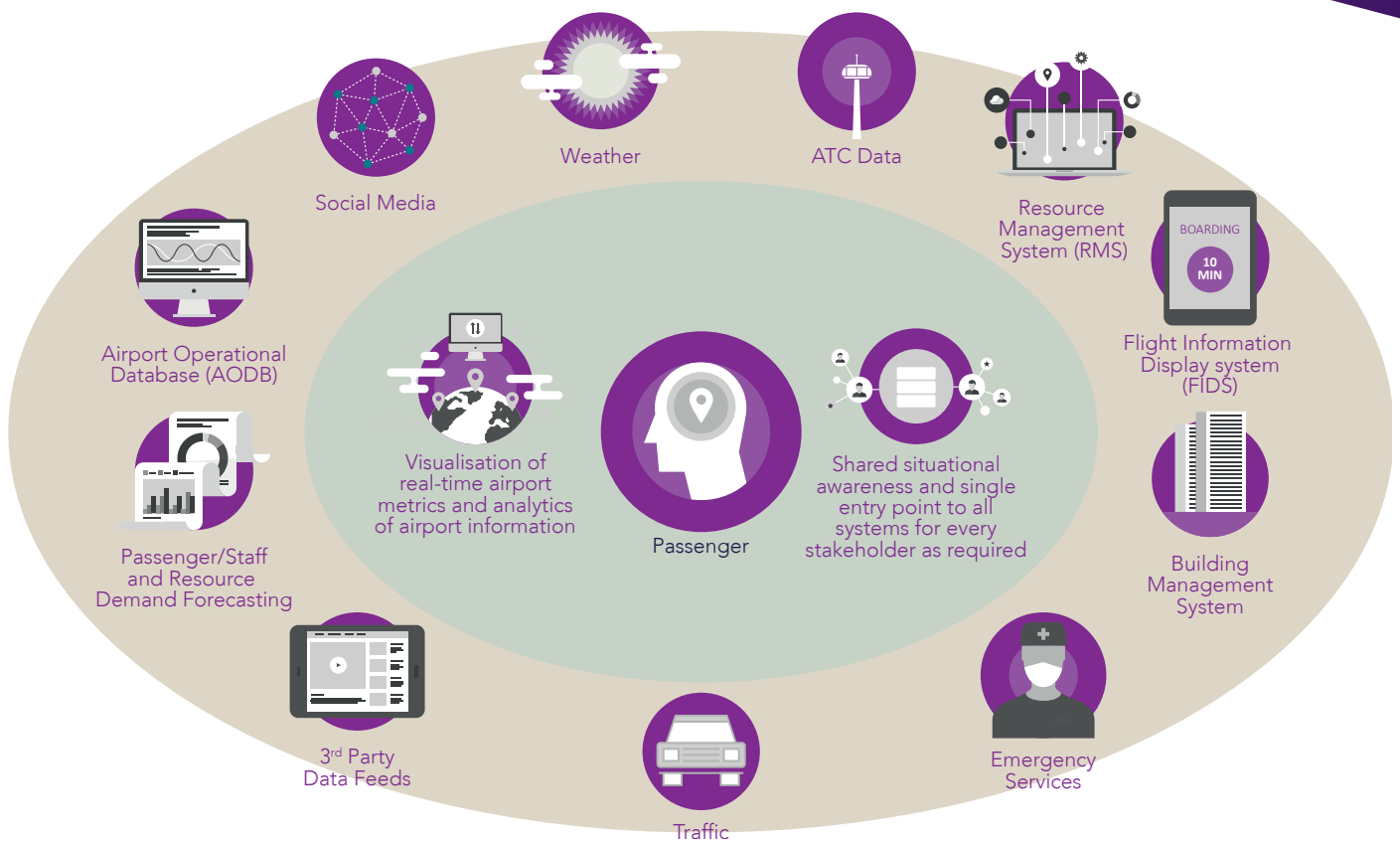
By integrating landside and airside performance data, Total Airport Management (TAM) provides views of 'what has happened', 'what is happening' and most importantly 'what is predicted to happen'. By analyzing various aspects of the passenger journey both inside and outside the airport, TAM produces a detailed picture of passenger movements for relevant stakeholders. This holistic view of the passenger and their journey begins before the passenger even leaves their home. Weather, road and rail conditions can impact passengers' likely arrival times, while flight delays can change the passenger's departure time and in turn affect their inbound journey to the airport, as the factors which influence the passengers journey extend far beyond the confines of the airport and its immediate ecosystem. Knowing these factors beforehand, ticketing agents, baggage handling, and security can plan and staff accordingly.

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*How much do you really know about your passengers and their journey through your airport?*

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At the airport, understanding passenger volume and activity helps airports optimize waiting times and empowers coordination improvement opportunities for passenger experience. Retail partners are also able better anticipate foot traffic and revenues. Using data on meteorological conditions, flight prioritization, runway traffic loads, aircraft turn-around times, and baggage and passenger operations means reduced delays, unnecessary fuel burn, and cost savings for airlines and better service to passengers.



More than a product, TAM is a strategic approach for increasing collaboration and information sharing between airport stakeholders. TAM extends EUROCONTROL's Airport Collaborative Decision Making (A-CDM) initiative, which is the European equivalent of the CDM process under the US FAA's next generation national airspace system. Leidos' TAM encapsulates A-CDM, terminal and landside processes alongside many other external information sources to provide a holistic view of airport operations and passenger flow. It sends the right information to the right stakeholders at the right time to help them fulfill the commitments and standards that exist in their place within the airport ecosystem, driven by both customers and collaborative partners and stakeholders alike.

## Total Airport Management Solutions at a Glance

Leidos offers two solution suites for Total Airport Management. These solutions can complement existing technical tools or may be employed independently.

- ▶ Develop comprehensive "what-if" scenarios and forecasted plans for passenger and aircraft traffic, airport operations, non-aviation revenue, and route development.
- ▶ Leverage data from multiple systems and sources to monitor and manage all operational areas, increase airspace and airport capacity, and ensure efficient resource usage.
- ▶ Mobilize operations to increase communication across the entire operation and reduce lag time for reporting events.
- ▶ Expand use of existing flight information display systems to publish multi-language informational and advertising messages.
- ▶ Improve cash flow, reduce billing cycle time, and automate the rebate, incentive, and debt recovery process.

# Airport Scenario Planning and Forecasting

## BEONTRA SUITE

BEONTRA scenario planning and forecasting software suite enables airports to address “what-if” scenarios. Through fast business case-building and highly scalable modeling, airports deliver timely, accurate forecasts covering all time horizons from hours ahead to the next 20 years.

Delivering highly detailed, schedule-based air traffic forecasts focused on passenger and traffic figures, BEONTRA supports airport operators across the planning function. Aircraft movements can be modeled and visitor flow data tracked and segmented. Infrastructure capacity can also be forecasted so airports can predict constraints on check in counters, security lanes, gates, and parking stands.

The BEONTRA suite complements operational planning functionality with commercially focused applications including non-aviation revenue planning and route development scenario planning. The result is a consolidated suite of planning and forecasting tools that can benefit your entire operation.

## Benefits of BEONTRA suite

- ▶ Operational on-the-day prediction: delivering passenger waiting time forecasts within the terminal for the day ahead
- ▶ Capacity planning: what-if resource planning against alternative traffic scenarios
- ▶ Tactical planning: highly accurate forecasts for the next weeks, months or years
- ▶ Strategic planning: over the next 10 to 20 years

BEONTRA Modules	What it Delivers
BEONTRA Strategic Forecasting	Demand oriented traffic forecasting, covering periods of +5 to +40 years based on industry best practices
BEONTRA Tactical Forecasting	Flight by flight, year by year traffic forecasts delivering the greatest possible level of detail whether it is the next business year or 30 years into the future
BEONTRA Operational Forecasting	Day by day traffic forecasting to support operational decision making and delivering data that enables more efficient resource allocation and management
BEONTRA Revenue Planning	Create pricing scenarios based on existing or new variables (e.g. bags, emission values) in order to model the impact of new tariff structures and generate business plans
BEONTRA Capacity Planning	Model alternative capacity flows through an airport’s infrastructure and test alternative traffic scenarios in order to highlight capacity constraints and optimize infrastructure usage
BEONTRA Route Development	Analyze new route opportunities and create convincing route cases to be presented to carriers
BEONTRA Non-Aviation	Model non-aviation related input factors (e.g. passenger spending rate) and analyze and optimize non-aviation processes and revenues

# Airport-Wide Collaboration, Integration & Optimization

## CHROMA AIRPORT SUITE

The Chroma Airport Suite is a consolidated platform that enables airport operators, their partners, and stakeholders to put the passenger at the heart of decision-making. Designed and built to solve real operational problems in single airport, multi airport, locally hosted, and multi airport hybrid environments, Chroma integrates real-time data from disparate sources and automatically translates, validates, and prioritizes actions based on user definable business rules. Equipped with a single, accurate, real-time view of operations, airport operators and stakeholders can collaborate more effectively, better align landside and airside decisions, and optimize operations in the terminal and at the gate.

Chroma Modules	What it Delivers
Chroma AODB	<p>Ensures mission critical information is stored, acted upon, and distributed in real-time to allow you and your stakeholders maximum Airport Collaborative Decision Making (ACDM) capability.</p> <p>Chroma AODB can use our ACRIS-supporting UI within a traditional flight grid or ACDM milestone view. Internal and external stakeholders can be notified in real time of the true operational situation which is continuously and automatically refreshed from a wide range of 3rd party sources e.g. SITA 'Type-B' messaging, airlines and ATC.</p> <p>To further support your decision making, Chroma AODB comes integrated with the Chroma AODB Mobile app, to allow data to be updated anywhere on the Airport.</p>
Chroma ACDM	<p>Engineered in line with EUROCONTROL A-CDM objectives, Chroma ACDM enables you to monitor and manage all operational areas and calculate variable taxi times to generate efficient pre-departure sequences that account for airline, aircraft size and wake vortices. As a result, you increase airspace and airport capacity, while also reducing aircraft taxi/runway queue times, CO2 emissions and operating costs.</p>
Chroma RMS	<p>Using the scheduled and real-time data from your AODB, Chroma RMS is a resource management system that ensures your operational assets are scheduled and continuously adjusted to the most efficient plan possible. Using an intuitive, nontechnical, resource optimization rule builder for both landside and airside areas, you can define rules to ensure efficient resource utilization and set alerts to highlight resource constraints during the operational day.</p>
Chroma FIDS	<p>Chroma FIDS allows you to more effectively use your flight information display systems. With FIDS you can publish important information in multiple languages to all areas of the airport. With location and targeted multi-media advertising functionality, you can maximize your retail outlet opportunities while providing a positive, informative passenger experience.</p>

Chroma Modules	What it Delivers
Chroma Billing	Chroma Billing is a true multi airport system to improve cash flow, reduce billing cycle time and automate the rebate, incentive and debt recovery process. The platform captures typical aeronautical and non-aeronautical billable charges, as well as billable charges such as flyovers. Quickly and easily generate rules to apply billing discounts/rebates/ re-verse or re-charge using an intuitive UI. And, through an extensive selection of accounting system interfaces and access to IATA SIS you can be confident all billable charges are accurately recovered.
Chroma AODB Mobile	Our multi airport Chroma AODB mobile solution reduces data capture and reporting lag time for events. Chroma AODB Mobile is highly secure, can layer over any Airport Operational Data Base in the market, and requires minimal training to use due to its user-friendly design.

## Why Partner with Leidos?

Leidos is a trusted technology leader to the Federal Aviation Administration, the Transportation Security Administration, and 70 airport operators around the globe. From passenger tracking to resource management, AODB to aeronautical billing, forecasting and revenue planning, departure sequencing to time-based flow measurement, we offer the most comprehensive suite of airport solutions available. Solutions that help our customers more efficiently handle 1.1 billion passengers and 3 million flight movements annually.

In addition to our deep technical integration experience, our aviation experience ranges from physical and cybersecurity to aviation flow management. When creating a TAM strategy for your airport, we draw on in-house expertise in areas from logistics through to data science and our many existing relationships with stakeholders in a TAM system. We design and deploy vendor-agnostic technologies that work with a variety of bespoke and off-the-shelf commercial systems.

## Next Steps

Ready to get ahead of issues before they become problems? Looking for a way to handle increased passenger traffic and operate more efficiently? We can help you strategically plan for the future, engage and collaborate with stakeholders, and integrate the right technologies to transform your airport operations.



