

Airport Data Sources & Business Solutions

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Aerostar History

- **Aerostar Airport Holdings, LLC** is a public-private partnership, privately held company, and limited liability company that operates and manages **Luis Muñoz Marín International Airport** under a lease agreement with Puerto Rico Ports Authority.
- Aerostar has a forty-year lease to manage and upgrade LMM, including an estimated investment of nearly \$1.4 billion in capital improvements over the course of the agreement.

Aerostar Timeline

- July 2011- PRPA initiates privatization RFP (FAA Pilot)
- March 2013- FAA issues ROD Awarding SJU concession to Aerostar
- 4.2M- Passenger Enplanements (43rd)
- 425,000 Ton Air Cargo (25th)

The Data Foundation

- Planning/ Design
- Business Tool/ Revenue
- Process Evaluation
- Passenger Demographics

Data Sources

- Self Generated
- Airlines
- Cruise Ships
- Federal Agencies
 - Transportation Security Administration
 - Customs Border Protection
 - FAA
 - USDOT

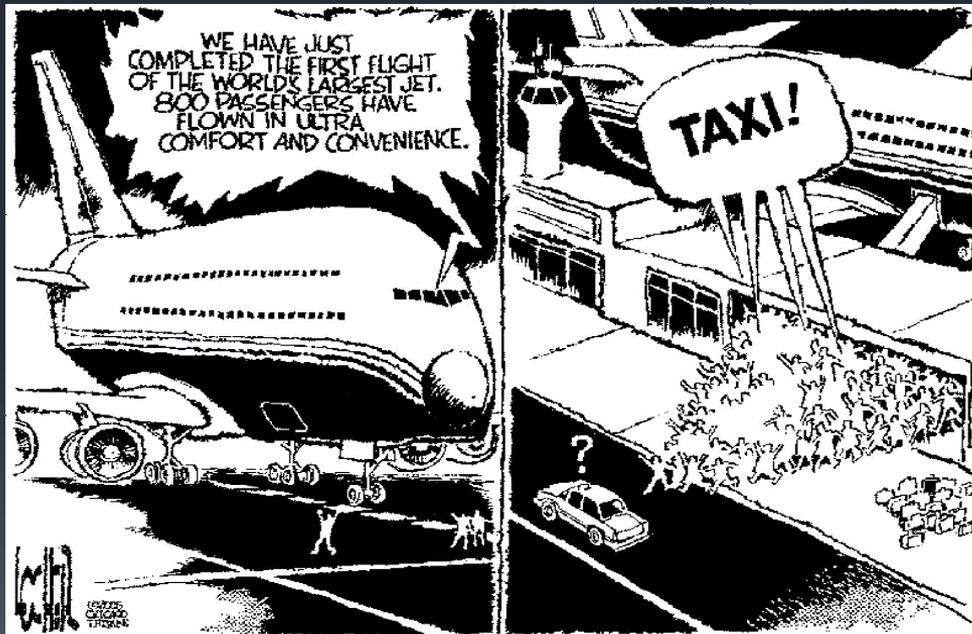
Data Uses

- Comparative Modeling
- FAA Terminal Areas Forecast
- Passenger/ Cargo
- FAA Funding Determination
- TSA/CBP Throughput & Staffing Data
- Modal Splits

How does Data support Operations and Design?

- Function (Plan/Design)
- Facilities (Throughput)
 - Ticket/ Baggage
 - Security
 - International Ops
 - Connecting Times
 - Landside/ Airside/ Parking
 - Concessions
 - Customer Services

Master Development Objective



- Effective Facilities
- Stream Line Process
- Inherent Flexibilities

Passengers are Cargo

- Self Propelled
- Self Directed
- Self Sorting

Objective: “Move largest volume of passengers through a balanced facility utilizing the most efficient staffing model”

Cost Data

- Facility
 - Cost Effective Buildings
 - Energy/ Maintenance/ Operations
 - Other direct facility costs
 - Landside
 - Roadways
 - Utilities
 - Airside
 - Runway
 - Taxiway
 - Nav aids

Revenue Data

- Airline vs. Non-Airline Revenue Streams
- Financial Rate Setting
 - Compensatory (Distributed) vs. Residual (Risk)
- Passengers
 - Fares
 - Direct to Concessions
 - Permit time to spend
 - “Understand Market”
 - Passenger Demo
 - Airline Positioning

Revenue Source (Business)

- User Tax Supported
- FAA mandate airports should seek to be financially self supportive
- Non Airline Revenue
- Compensatory/ Residual
 - Non-airline Revenue
 - Airline Operating Cost
- Airline Support “Balanced Operations”
- Airport Revenue (All Data is Based)
 - FAA Entitlement/ Discretionary (User Taxes)
 - Parking
 - User Fees (RAC)
 - Staffing Optimization
- Budget based upon Activity Forecasts
 - Quality Data = Reliable Projection

Process Evaluation/ Passenger Characteristics/ Behaviors

- Domestic
- International
- Meeter/ Greeter
- Business
- Leisure
- Novice
- Expect
- All have time/ motion value in the sequence matrix
 - Landside/ Airside Transition

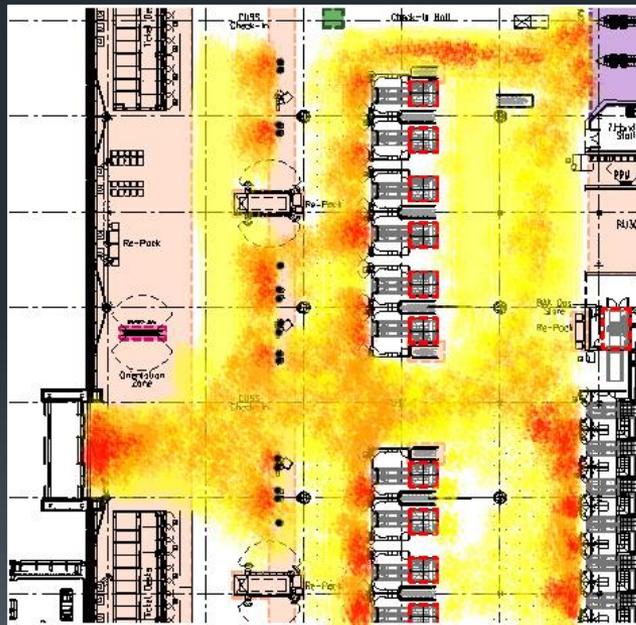
Data Sharing Partners

- FAA (Airside Operations/Funding)
- Airlines (Customer Service)
- TSA/ CBP (Safety/ Security)
- Basing for staff TSA/ CBP/ ATC
- Complementary Operations
 - Off Airport Business (Hotel)
 - Tourism
 - Supporting Business (Direct/Indirect)

Data Gathering: CrowdVision

- Crowd Vision is a fast-growing UK-based technology company, pioneering live crowd analytics. www.crowdvision.co.uk
- Founded in 2009 in London to commercialise software developed by Dr Anders Johansson, a highly cited crowd analytics researcher and now company CTO <http://www.ajohansson.com/>.
- Algorithms originally developed to support public safety applications in mega events and venues (e.g. Hajj pilgrimage at Mecca and London Olympics). Software is designed to be accurate and reliable enough to support safety-critical crowd management operations.
- Now deploying this same technology in airports, venues, events and urban settings.

Data Gathering: CrowdVision



- CrowdVision uses overhead video cameras and smart real-time analytics algorithms to gather and analyse data on passenger movements across the airport.
- Benefits:
 - Improve efficiency and reduce checkpoint costs
 - Meet queue time targets
 - Improve passenger experience
 - Increase airside shopping time

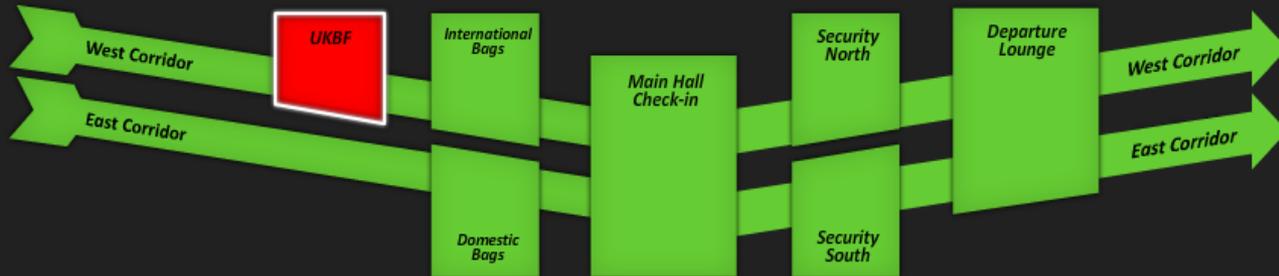
The Live Data Dashboard



ARRIVALS

London City Airport
Get closer.

DEPARTURES



10:26:03
Friday April 11th 2014

POWERED BY CrowdVision



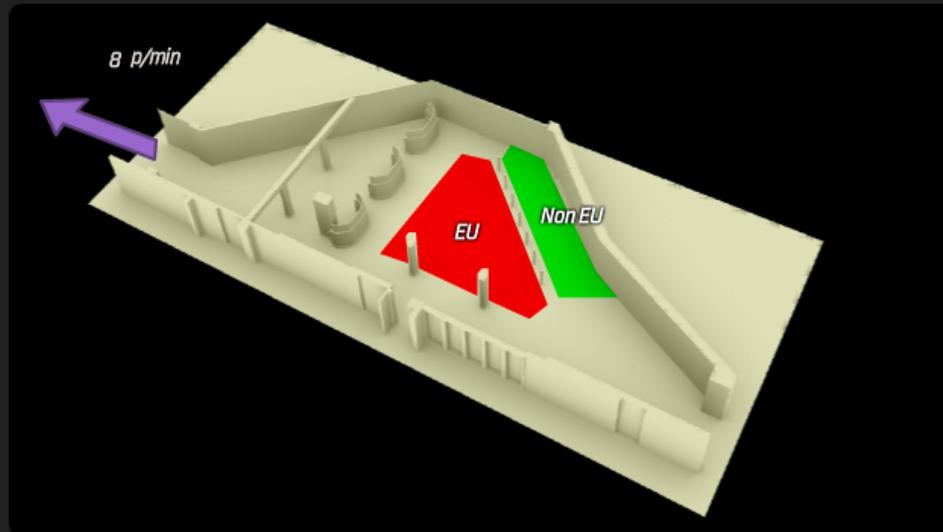
UKBF

P90 Times

Queue Time	15m	1hr
EU	2:50	16:48
Non-EU	2:30	3:00

Processing Time:

EU	0:05	0:25
Non-EU	0:30	0:30



Current Queue detail

	Queue	Desk
Non-Eu	3:30	0:30
Eu	12:05	0:25

The End | 