The passenger in focus of multimodal airport management

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Axel B. Classen

DLR
Air Transport and Airport Research

Knowledge for Tomorrow
Outline – two projects

**TAMS:**
- “Total Airport Management Suite”
- national project with industry partners
  (Barco, Atrics, Inform, Siemens, Stuttgart Airport)

**Optimode:**
- internal project at DLR
- Institutes of
  - Flight Guidance
  - Transportation Systems
  - Air Transport and Airport Research
The Airport – a multimodal node

Airside
- En-Route
- Approach
- Landing
- Taxiing
- Turnaround
- Taxiing
- Airside (RWYs, TWs, Apron)

Landside
- Arrival
- Check-In
- Security
- Boarding
- Gate
- Disembark
- Border control
- Baggage claim
- Customs
- Exit
- Landside (terminal building)

Ground access
The Airport – a multimodal node (ctd.)
TAMS – Integrating the passenger in the TAM-Concept

Goals:
- adding focus on the passenger
- provide situational awareness of landside processes
- improvement of punctuality
- increase cost efficiency
- proactive passenger management
- proactive resource management
Proactive passenger & resource management

- Early Knowledge about passengers’
  - passengers’ status
  - passengers’ waiting times
  - passengers’ timeliness at the gate
  - resource utilisation

- Consideration of
  - costs
  - landside / airside dependencies in the Air2Air chain
  - performance

KPI-based monitoring & alerting
Forecast functionality

- EPGT to synchronise with agreed TOBT
- forecast horizon: day of ops
- high update rate (up to 90 sec.)
- based on System Dynamics
- triggered by
  - system changes (e.g. TOBT updates) or
  - what-if requests
KPI-based monitoring & alerting

- newly defined landside KPIs
- performance measurement
- decision support
- alerting based on flexible thresholds
PaxMan – the passenger manager

- First implementation of a proactive passenger management in a TAM environment
- monitoring and assessment of passenger processes
- prediction of passengers’ readiness at the gate
- TOBT-coordination with TMAN
- decision support for early response and efficient resource management
- measurability of landside system performance & costs
Benefits

**Passenger**
- smooth flow of Pax through procedures
- improved punctuality
- reduced waiting times
- earlier information

**Airport Stakeholders**
- situational awareness
- proactive management of resources
- Increased efficiency
- platform for coordinated planning & decision support
- assistance for recovery after disturbances
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Optimode
Where is Optimode bound for?

- Famous II
- TAMS
- P-Air-Form
- Door-to-door
- Airport Security
Optimode

3 configuration levels

1. Standard Edition
2. Rail Access
3. Remote Capacity
Optimode – Standard Edition (SE)

Airport landside – airside management integration
(*nowcast, forecast, decision support, what-if, effect analysis*)
Optimode – Standard Edition (ctd.)

- nowcast
- forecast
- decision support
- what-if
- effect analysis
- detailed passenger trajectory

<table>
<thead>
<tr>
<th>Actual situation</th>
<th>Forecast</th>
<th>EPGT Estimated Pax at Gate Time</th>
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<tbody>
<tr>
<td>AOP agreed by all stakeholders</td>
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Optimode – Rail Access

- SE + Integration of railway services in airport (control center) management
- extension of passenger trajectory
Optimode – Remote Capacity

Scenario based analysis of integrated management solutions for intermodal connected multi-airport systems
Questions & discussion

Axel B. Classen

DLR
Institute of
Air Transport and
Airport Research

axel.classen@dlr.de
+49 2203 601 3848