Total Airport Management Suite

paving the way towards
Performance Based Airport Operations
Green Airport
Passenger Experience
TAMS Approach

- **Airport operations are complex** due to a large number of processes, constraints, dependencies, stakeholder interests and responsibilities.

- During the day of operation often things are different to what was planned before.
TAMS Airport Operations Center

- In order to **efficiently use the resources** under all conditions it is of utmost importance for the operators involved to maintain situational awareness, anticipate impacts of new constraints in due time and collaboratively find joint solution strategies on-the-fly.

- **TAMS provides powerful IT solutions** supporting all these requirements.
TAMS goes beyond Airport CDM

First, by a balanced consideration of both airside and landside processes and their dependencies.

Second, by extending the time horizon to a pre-tactical range of several hours.

Finally, by introducing new concept elements like Airport Operations Plan and Airport Operations Center.
TAMS Approach

The figure shows the overall concept of decision making on a pre-tactical level in an Airport Operations Center (APOCH), regardless of whether it is realized in a distributed form or as a single control room.

The diagram depicts how APOCH decisions provide orientation for the existing tactical operation centers without infringing on their local decision making authority.
TAMS – a suite of IT-systems

A suite of IT-systems is integrated to dynamically support the collaborative planning process in the APOC, including efficient coordination with the existing tactical centers.

- **Commercial-off-the-shelf (COTS) products** proven in the field.
- **Novel solutions** addressing the specific requirements of an APOC.
Operational Improvements & Benefits

- The productivity of an airport is significantly increased by the Total Airport Management Suite – TAMS.
- TAMS offers perfectly adjusted solutions that consider the entire flight process chain and the related passenger processes holistically.
- Precise and reliable information in due time – for instance for offblock times – is the core enabler for improved resource management and proactive optimized capacity and demand balancing.
Operational Improvements & Benefits

Seamless decision support:
- example techniques
- what-if-scenario

All phases of flight:
- seasonal flight planning
- daily flight plan deployment,
- execution during the day of operations,
- post-operation statistical analysis.

TAMS decision support takes human factors requirements into account and provide significant reductions in:
- delay
- fuel burn
- emissions
Operational Improvements & Benefits

Advanced **TAMS** technology:
- will boost the competitiveness of an airport in a changing market,
- increase common situational awareness with different visualization technologies,
- deliver relevant information to the various parties,
- take airline preferences and constraints into account.
- is a key enabler for collaborative planning processes.

**TAMS solutions:**
- **Service Oriented Architecture**
- **Avoids vendor lock-in** by loose coupling and conformance to ATM interoperability standards.
- **Capable to integrate its novel products and solutions with existing legacy systems** and products from different manufacturers in a step-by-step approach, tailored to the needs of each individual customer.
Managed airport processes

Enroute
Approach
Taxi-In
Turnaround
Taxi-Out
Departure
Enroute

Curbside
Check-In
Security
Gate
Baggage
Pass
Exit Airport
TAMS Facts

TAMS is a joint research project of five partners led by SIEMENS:

- Running from December 2008 to November 2011
- With an overall budget of approx. 30Mio. €
- The DLR simulation environment in Braunschweig and Stuttgart Airport will serve as test and validation sites
- Further information can be found on the TAMS website, www.tams.aero
SIAMOS - Green and Efficient Airport

- AODB and Airport Process Integration Platform
- Optimized Resource Management
- FIDS Passenger Guidance and Advertisement
- Airport Performance Manager supporting A-CDM
- Airport Command and Control Center Solutions
- Product, Integration and Turn Key Provider for Baggage, Cargo, Building Technology, Airport-IT

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TAMS Project Partner

System Leadership in Aeronautical R&D

- Concept development and evaluation
- Process analysis and optimization
- Validation knowledge and infrastructure
- Expertise in system ergonomics
- Inventor of the TAM concept

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TAMS Project Partner

OSYRIS - Queue Management

- Arrival & Departure planning
- OSYRIS Flow & Capacity planning
- OSYRIS Trajectory Prediction TP
- OPS center Safety Net and ATC surveill. displays
- ODS Toolbox for CWP user interfaces
- Airport Control Room software & large displays

www.barco.com/AirTrafficControl
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HubControl-Turnaround Management

- Links CDM milestones directly with all ground handling processes progress in real-time
- Considers all transfer information
- Calculates and updates real time triggered TOBTs
- Cost model based what-if capability for dec. supp.
- Condenses relevant KPIs for ground handling

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Competence and Efficiency

- One of the first airports with comprehensive process support by one integrated IT system
- Experience in air- and landside process optimization based on quality and process monitoring system
- 6 year AODB experience
- Process optimization consultancy for airlines and ground handling companies

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TAMS associated Partner

Surface Management

- Automated Routing and Guidance
- Surface Trajectory Based Operation
- Advanced Taxi Time Calculation
- Tower Simulation

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Total Airport Management Suite