Fraport: Digital Operations
Scheduling and planning maintenance activities @ Frankfurt Airport

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PUBLIC
Operating digital in order to maintain the Frankfurt Airport

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Agenda

➢ Company profile Fraport

➢ Asset maintenance processes and gate operations

➢ Key benefits and outlook
Frankfurt Airport – our Home Base

- about 21 sq km area
- 100 aircraft movements per hour
- 2 full-service runways + 1 runway for take off + 1 runway for landing
- 2 passenger terminals
- 1 AIRail Terminal
- 152 flight gates
- 203 aircraft positions (64 terminal position)
- Air Cargo rail connection
- 80 km baggage transportation sys., max. speed 18 km/h

On a single day*:
- 167,000 passengers
- 75,000 pieces of baggage
- 5,900 metric tons of freight
- 570 trains serving the airport station

*average figures of 2016
Airport Facility Management

FM values:

- 1,367 sq km in terminal 1 + 2 (191 Football fields)
- 46,950 rooms
- 35,660 Lighting equipments on runway and positioning area
- 6.7 sq km runway and positions area (940 Football fields)
- 150 km drive ways
- 9.4 sq km green areas
- 20,000 Vehicles and special equipment
- 7,000 building services
- 450,000 lamps (Terminal 1)
- ca. 1.400 km cable network

Tasks:

- Provision of all technical and infrastructural services (operators)
- Eliminate disruptions
- Management of technical equipment (Operation and maintenance)
- Ensuring the proper operation and availability of all the technical equipment and the infrastructure
- Overall responsibility for the technical safety (legal requirements)
- Optimization of building operations and infrastructure
Business requirements for scheduling and planning – Example “Maintenance at Gates”

- Coordination between maintenance responsible persons and operation of the terminal for gate availability
- Consideration gate availability for dispatching of maintenance activities
- Trade-spreading planning (for example electrics, mechanics)
- Consideration of employees availabilities
Architecture
Envisioned Logical Architecture for Asset Management

Strategic Direction

Run Businesses
Hyper-automate business processes

Embrace Data
Orchestrate data of any volume, velocity, and variety

Steer Businesses
Deliver insights to drive strategic decisions

Differentiate Businesses
Intelligently connect people, things, and businesses

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Digital Boardroom

Business Intelligence

Mode 1

Ariba
Fieldglass
Success Factors

SAP S/4HANA

Master Data
EH&S
Maintenance
Cost
Projects
Scheduling
Finance
Materials
PLM
...

Mode 2

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Asset Intelligence Network
Predictive Maintenance
Mobile
IoT Foundation
Asset Strategy & Performance
STO

Data Foundation
Machines
Sensors
OT Systems
Edge

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SAP Asset Management – Maintenance scheduling and planning

- Employees, Teams (Skills, Availabilities)
- 3rd Parties
- Materials and components
- Tools and vehicles

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Asset availability

SAP Multiresource Scheduling

- Projects
- Orders, Notifications
- Short- and mid-term

* Integration on demand
Scenario “Maintenance activities at the gate” in SAP EAM with SAP MRS

- Technical objects
  - Schedules with standard times
    - gate assignment
- Maintenance plan
  - Maintenance cycles
    - plan time
- Order creation
  - Orders with deadline
- Scheduling
  - Assignment employees in consideration of
    - availabilities of gates
    - availabilities employees
- Execution and feedback of the activities

SAP ERP

PM – Plant Maintenance

MRS – Multi-resource Scheduling

Mobile

SAP HCM

Employees & availabilities
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Scenario “Maintenance activities at the gate”

Structure:
- Boarding bridge
- Elevators
- ... (additional components)

Maintenance requirements:
- Order
- Order
- Order
- Order
- Order
- Order

Gate-Availability for Maintenance

Employees
Introduction of SAP Multi-Resource Scheduling for Scheduling and Planning

SAP Multi-Resource Scheduling is the Solution to manage resources in maintenance, service and project business. Main functions of SAP MRS are:

- Capacity management
- Qualification management
- Intuitive graphically planning board
- Functions for manual, automatic and optimized planning
- Strong integration in other SAP components and processes
Regular maintenance after implementation SAP-EAM and -MRS
SAP MRS planning board at Fraport

Favorite Layout of our users
SAP MRS planning board with example gate

Selection of order operations by gate for planning
SAP MRS planning board with example gate

Assignment of selected order operations by Drag & Drop or automatically to time window (time allocation for position-oriented maintenance)
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Goals achieved with SAP MRS in combination with SAP EAM

- Positive User Acceptance
- One central solution to manage Availabilities of technical objects, Maintenance Activities with time and Employee availabilities
- Easier collaboration across different areas
- Schedule compliance
- Reduction of „paper-based“ work
- Flawless process integration supported through integrated SAP Solutions
Outlook

• Regular feedback sessions with business
  – Continuous knowledge transfer and experience exchange with Key Users
  – Business Requirement (on behalf of Key Users)

• Qualification management

• Using new functionalities of MRS10.0
  – Availability of technical objects
  – NN-resources
  – WEBUI
Thank you for your attention!

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Thank you.
Digital Operation @ Fraport