

Airport Asset Lifecycle Management

Trends in Asset Management around the World

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Limited time for an important subject

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17 years Rolls-Royce Aerospace – multiple roles including data acquisition engineer, systems engineering group leader, manufacturing engineering group leader
Industry Assignments at Rolls-Royce, Boeing, Gulfstream, NASA, GKN Aerospace, Bombardier Aerospace (Shorts), MBDA, BAE Systems, US Army, UK Army, Toyota, Volvo, *Heathrow, Gatwick, Manchester, Schiphol, Nice, Lisbon, Seattle, New York Port Authority, Denver, Toronto and Austin airports*

Credentials

- Chartered Engineer
- BEng hons Electronic Engineering
- IBM Certified Consulting IT Specialist
- Member of the Institution of Engineering Technology

- I have the next 25 minutes to tell you what is happening in Airports around the world
 - I am working with Gatwick, Heathrow, Lisbon, Nice, Schiphol, Seattle, New York and New Jersey Port Authority, Toronto, Austin, Denver and other airports
- I concentrate on introducing airports to, and developing new ways of delivering value from IBM's asset management tools
- I will cover subjects very briefly and then do a lightning fast demo!

Over 600 Maximo Airport Clients

- 150 Airport and Seaport Customers
- 26 airports with 30M or more passengers per year using Maximo
- Most airports using Maximo are working on innovative ideas to improve services, enhance efficiency, create better passenger experiences and cut costs.



Port of Antwerp



Firstly, what is Maximo for Asset Lifecycle Management



Considerations for Airport Asset Management Solutions

Mobility

Analytics

WORK MANAGEMENT

ASSET MANAGEMENT

PLANNING and SCHEDULING

SUPPLY CHAIN

HEALTH and SAFETY

Process Engine

Integration



ERP
BIM
GIS
SCADA



Assets



Why do people choose Maximo

- Ease of use
- No need to customise
- Easy to tailor to your airports needs
- Extremely scalable
- Standards based integrations with enterprise or local systems – very easy to configure
- Transportation specific industry solution
- Integrations with ERP, Financial, GIS, BIM, Analytics, SCADA etc
- Strong mobile offering
- 1000's of users around the world – many user groups
- Many implementation and consulting partners to help you
- Most of our customers are willing to be referenced.....

What innovative things are people doing with Maximo at Airports?

- Building Information Modelling integration into Maximo
- Graphical Information Systems integration on Airport Ground Lighting
- SCADA integration from baggage handling, air bridges and other assets
- Mobile for airside and landside
- Predictive Analytics
- And many more things.....

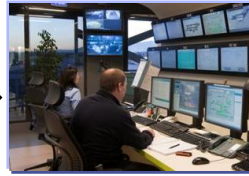
Building Information Modelling at Airports



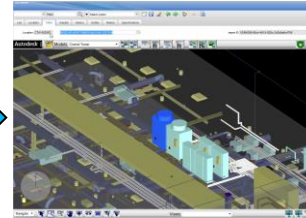
Buildings designed and maintained using BIM integrated into Maximo



Problem called in to control center (heating, cooling, lighting etc.)



CTI integration identifies caller and location within office



Location of problem identified using immersive 3D integration into Maximo



Contractors selected using Maximo Service Provider - work carried out, reported and invoiced.

Building is designed and constructed using building information modelling solution that is integrated into Maximo. Improved building designs based on better collaboration between different stakeholders / end-users (designers, architects, procurement, facility management)

Asset register population time reduced from many months to a few days – improves time to occupation, snagging problems, operational and health and safety improvements

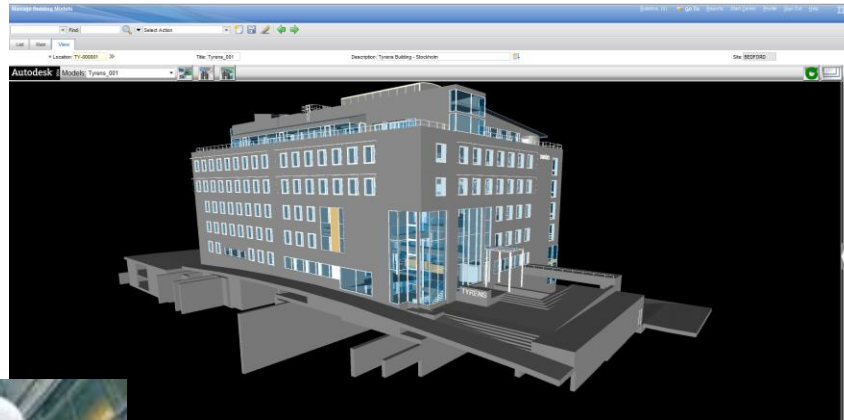
Identification of problems remotely using immersive technology – reduced number of truck rolls to the site – reduction in maintenance costs

Building Information Modelling integrates and manages data and process throughout the lifecycle of a building



DATA

Architecture
Civil Engineering
Planning
Surveying



DATA

Locations
Assets
Services
Work
Auditing
Health and Safety
Contracts
Space Planning

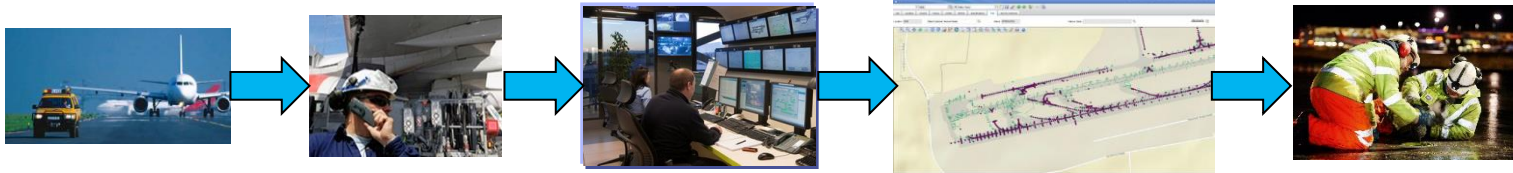


DATA

Procurement
Contractors
Building
Inspecting



Graphical Information Systems for Airport Ground Lighting and other airside assets



Routine AGL inspection

Problem called in to control centre

CTI integration identifies technician and partly completes Maximo service request

Location of faulty AGL asset identified using Spatial integration with Maximo

Contractors selected using Maximo Service Provider

AGL mapping using ESRI, Autodesk Map Server and other GIS solutions. Work taking place at Gatwick, Heathrow, Schiphol and Nice airports with GIS integration into Maximo. **Improved efficiency in locating faults, and potential 'strike' situations. Improved asset usage reporting.**

Computer Telephone Integration being investigated at various airports and in production at Nice airport. Based on linking customers details directly into Maximo. **Improved data accuracy and speed in completing forms, thereby issuing instructions and completing work faster.**

Contractor selection, engagement, invoicing and billing – contractors and airport both using single Maximo instance – license usage charged out to contractor. Ability to track and benchmark contractor performance

Automatic alerting from smarter assets



Building assets, passenger loading bridges, baggage handling, security and other complex assets monitored using sensors connected to monitored SCADA systems

Faults automatically reported to control center – in some cases entering data directly into Maximo (fault alert time, maintenance start and stop time (down time))

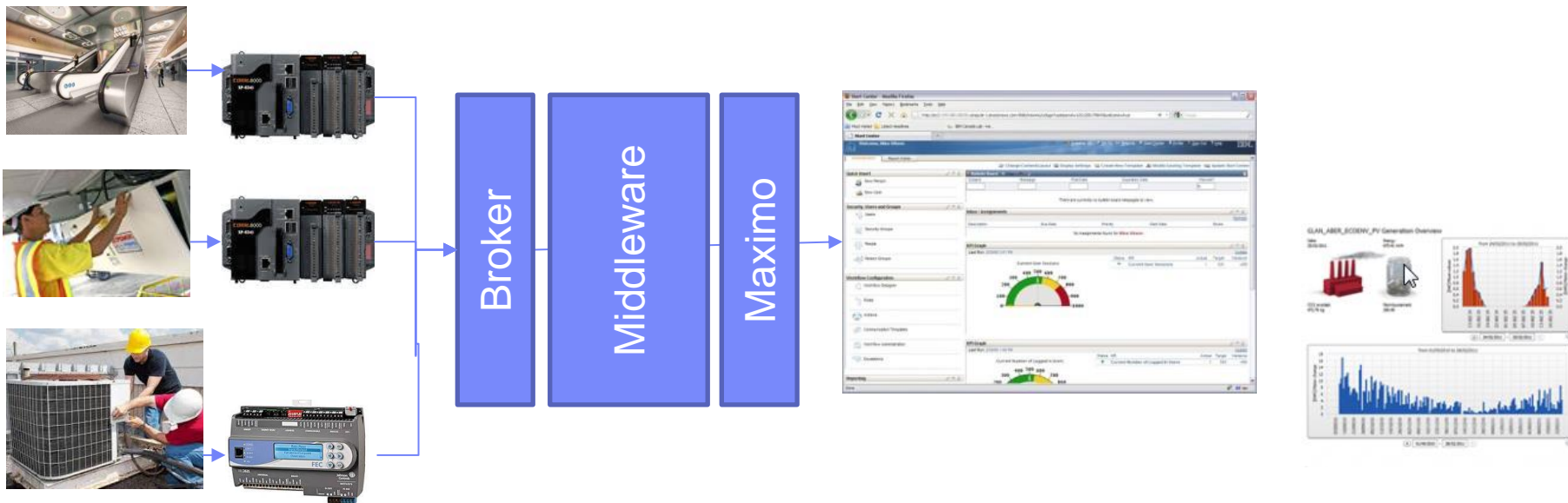
Technicians passed work orders directly onto their mobile devices

Critical assets that streamline the throughput of passengers through the airports are typically equipped with SCADA based monitoring. Many airports simply use SCADA to register and report alerts – but more progressive Maximo users are now trapping alerts relevant to maintenance using SCADA integration into Maximo

Automatic alerting can significantly reduce mean time to repair by getting the technician to the job faster. Reporting using mobile devices also helps monitor costs, accurately track asset down time and provide an accurate audit trail where reporting is required.

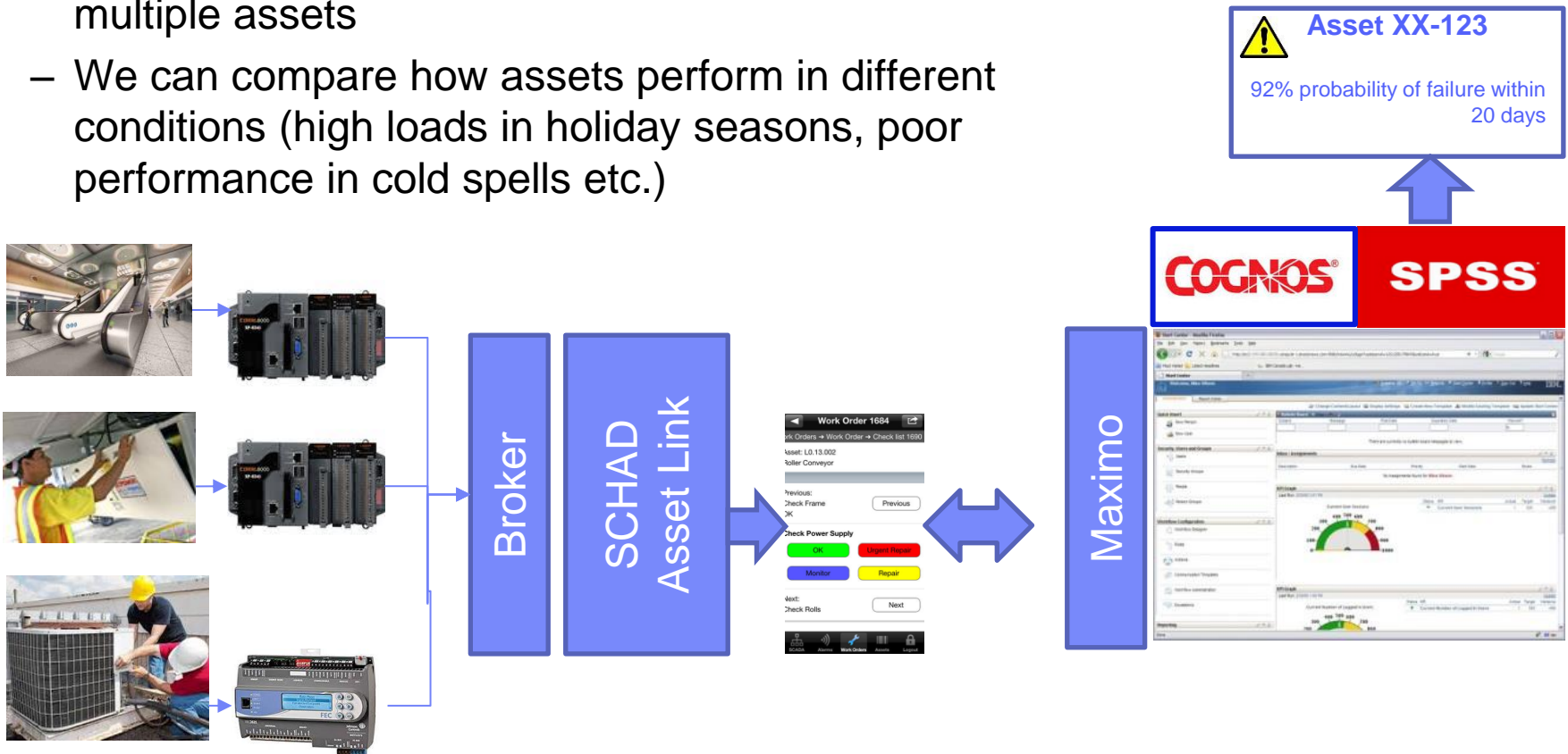
Automated Data Collections

- How many people are aware of the SCADA capabilities of the equipment they manage?
- How many are exploiting this information by integrating into Maximo for:-
 - Meter readings (run hours, temperature, vibration)
 - General events and alerts
- How many are analysing these alerts and feeding critical events into Maximo and automatically creating service requests or work orders?



Taking things one step further – predictive analytics

- If we start to collect consistently high quality data we can look for trends
 - Trends may or may not be fault conditions
 - We can look across multiple sensors connected to multiple assets
 - We can compare how assets perform in different conditions (high loads in holiday seasons, poor performance in cold spells etc.)



Other Maximo Usage Examples



Maximo is extremely flexible. The solution does not require customisation – changes to business processes, user interface look and feel and integration into and out of Maximo is all managed from the user interface.

Transportation and transportation assets – vehicle maintenance, tracking, warranty etc.

Soft FM service provision and contracting, work order and service management



Thank You!!