Soaring to New Heights with a PDM Light Backbone
Agenda

Airbus in a Nutshell

- End-to-end PLM Vision & PDM light
- ARAS projects pipeline at Airbus
- Focus on applications
- Conclusion
Aviation drives our economy

- 58m Jobs supported
- 50.0m Tonnes of freight*
- 3.3bn Passengers*
- $2.4tr Global GDP

* Annual figures
Source: ATAG
Air traffic forecast to double over the next 15 years

4.6% average annual traffic growth rate 2014-2034

Source ICAO and 2015 Airbus Global Market Forecast
Airbus Group

136,500+
Total Workforce

€1,006bn
Order book

€64.5bn
Revenue

2015 figures
Airbus

A global aircraft manufacturer with 55,000 Employees

€45.9bn Annual Revenue*

*2015 value
The most global aerospace player – close to our customers worldwide

The numbers

- 11 Production sites
- 4 Assembly line locations
- 5 Training centres
- 4 Engineering centres
- 3 Customer support centres
- 10 Materials & logistics centres*
Airbus is a global enterprise for a global business

France

Germany

UK

Spain

United States

China
Airbus builds a complete range of fuel efficient aircraft.

- A330 Family: >16,300 orders
- A380 Family: >9,500 deliveries
- A320 Family: >400 operators
- A350 XWB

End 2015
Agenda

1. Airbus in a Nutshell
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PLM Information System “Ten years of evolution”

A380 IS (‘‘4+1’’)
One IS by Natco
+ One common IS

A400M IS (‘‘Fourfold’’)
One IS multiplied by 4
+ One common IS

A350 XWB IS (‘‘Single 1’’)
One central IS
One PLM system for A350 is a reality!

Facts & Figures

- About 100 Risk Sharing Partners connected
- PDM Mecha: 7200 users weekly connected (20000 users declared)
- VPM: 4000 users weekly connected
- 85% users in Extended Enterprise
- 7x7 24/24 availability
- Data doubled every 6 months (vs 12-18 months in other industries)
- >700 DMU computed daily
- cDMU updated every 60 min EE included – (no exchanges anymore)
- DMU review of full A/C
- Extended Enterprise connected in real time through a configured Digital Mock-up (cDMU)
- Design in context with VPM
- Full 3D process (Manufacturing + Engineering)
End to End PLM = Broadening the Digital Product beyond Engineering

- Pre sale / Sale
- Configuration management
- Procurement
- Airlines
- Customer support
- Airline end users
- Repairs
- Catalog designer
- Engineering
  - System designer
  - Structure designer
  - Stress specialists
- Manufacturing
  - Manufacturing engineering
  - Blue collar workers
- Quality & attestation
  - Attestation
End to End PLM = Broadening the Digital Product beyond Engineering
In this context, ARAS was selected to answer ‘PDM Light’ needs arising

• Target:
  • Selection of a PDM platform that enables simple, agile PDM solution delivery
  • Focus on small and medium scale projects with contained functional scope
  • Product Development PLM not in the scope of ‘PDM Light’

Assessment Results – ARAS v10 OOTB without developments

- **Functional Coverage**
  - Data Management
  - Project Management
  - Change Management
  - Life Cycle Management

- **Technical Coverage**
  - Installation
  - Connectors
  - Migration / Loaded data
  - Access Rights
  - Support
  - Developmen t Capacity

- **PDM Light Ability**
  - Long Term Viability
  - Low cost
  - Technical Adaptability
  - Backend ability
  - Functional Adaptability

Expectations Tool evaluation
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A ‘Green House’ for rapid prototyping leveraging ARAS agile development capabilities
A project pipeline from rapid prototyping to production

Engineering Agile Applications
- 1 prototype identified
- 2 prototypes on-going
- 5 prototypes stopped

Engineering Method & Tools
- 1 prototype on-going
- 3 projects identified
- 3 projects on-going
- 1 project on-hold
- 3 projects redirected

Green House for prototyping only

Applications ‘usual’ Development

Applications in Production

<table>
<thead>
<tr>
<th>Application</th>
<th>CoC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customized Cabin Weight Management Tool</td>
<td>Flight Physics</td>
</tr>
<tr>
<td>Deviation Management Tool</td>
<td>Structure</td>
</tr>
<tr>
<td>SAO New Generation</td>
<td>Systems</td>
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<tr>
<td>Hatrack</td>
<td>Cabin</td>
</tr>
<tr>
<td>MOD Validity Extension</td>
<td>Integration</td>
</tr>
</tbody>
</table>

Other businesses
- 1 prototype identified
- 1 prototype re-orientated
Upgrade process was successfully tested
ARAS - Supply Chain supporting Centre of Competence

Architecture bundle
Architecture + Expertise + Development + Run
Integration + Development + Project Management + Run

ARAS Center of Competence for AIRBUS
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TIM – The First ARAS based application @ Airbus

WHAT IS TIM?
Test Information Management
The Web-based application for Structure Tests Management

DEFINE
- Search for existing tests & documents
- Declare new Test Needs
- Set Minimum requirement & deadlines for test
- Allocate Test Reference Number

EXECUTE
- Manage & track Test planning & costs
- Approve & Authorize new Test Needs
- Allocate & manage Test Facilities & Means
- Share working files & documents
- Track documents status and consult released documents

REVIEW
- Perform Test Pyramid Management reviews
- Perform Test Progress reviews
- Generate reports & extracts

✓ Manage test projects End to End across Structure Test Pyramid
✓ Daily business data management
✓ KPI
✓ Data consistency & robustness, control & secure access to data
✓ Support the entire Process “Define and Perform Structure Test”
✓ Multi-site operation incl. our extended enterprise
Hatrick – 2nd ARAS based solution at Airbus

Context

- Hatrack is a tool for customizing Overhead Stowage Compartments (OSHC) for A320 family (Single Aisle). It is used to finalize the description of overhead stowage compartment (hatrack), in order to generate specifications sent to suppliers.
- Change a Legacy business tool to a modern COTS solution to manage Hatrack information.
- Used core ARAS features to manage and define workflows for end users and implement business logic.
- Delivered improved user experience taking benefit of standard ARAS features for search and workflow management along with customized technical specification sheets required by business.

- Business: Cabin
- Implementation timeline: 8 months
- Delivery Model: Iterative

Results

- Project delivered on Time, on Budget, on Quality.
- Excellent feedback from business for the delivered tool
- A high performance solution with powerful search capabilities
- High level of customization feasibility in tool allowing business administrator to make future changes without external support.
- Enhanced user experience and functionalities developed within the framework of Airbus IT standards.
- Increased operational efficiency through improved and faster specification process
MVE – MOD Validity Extension – 3rd ARAS based solution

Context

- Objective of MVE tool is to improve efficiency through complete, correct and rapid availability of the applicable requirement list and to qualify the MODs when a new extension project is launched on a program.
- Used core ARAS features to manage and define workflows for end users and implement business logic.
- Providing a new solution developed on ARAS platform to replace existing excel based way of working.

Results

- A high performance solution with excellent search and import functionalities.
- Feasibility for business administrator to define import formats for files.
- User role and Identity management to manage various actors using the application.
- Customization possible in defining attributes used during import of data to tool.
- Effective use of Save Search functionalities to perform customised search and sharing between various users.
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Conclusion

- ARAS was selected as a **backbone to answer ‘PDM Light’ needs in the Airbus application landscape**
- It enables **rapid prototyping** in the ‘Green House’
- Project pipeline leverages ARAS **agile development capabilities and upgrade process**
- The needed competence, supply chain and infrastructure is now **fully set-up and in operation**
- **Positive start** and good customer feedbacks
- Upcoming projects will **confirm benefits** and will allow **exploration of further potential**