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A350 XWB
Programme update
Deutsche Bank
22 January 2015
Successful Entry into service of A350-900

Learn lessons to meet delivery commitments

Preparing the future by boosting competitiveness
A350 XWB is certified on time (as committed in 2012)

Type certification

- 30th September
- 12th November
Demonstrating reliability at certification enabling EASA ETOPS

1st A/C type certified “Beyond 180 min”

- ETOPS 180 min in basic specification

ETOPS 300 min or 370 min available as options
A330 and A350: Common Type Rating granted
training duration of 8 days with no use of Full Flight Simulator.

Easy introduction of A350 into existing fleet and possibility of Single Fleet Flying (SFF)
An outstanding achievement: First A350 XWB delivered on time

MSN006 delivered to Qatar Airways on December 22\textsuperscript{nd}, 2014
Entry into Service achieved on January 15\textsuperscript{th}, 2015 opening the Doha-Frankfurt route
Aircraft activity since delivery

- Ferry Flight to Doha: 23rd DEC 14
- Over 100 training flights - rhythm of 8 flights per day
- A350 media event: Heathrow/Qatar noise partnership launch
- Daily commercial rotation operational between Doha and Frankfurt (16 commercial flights so far)
  → 283-seat configuration: 36 Full-flat-bed business class seats, 247 economy class seats

Entry into Service

15th Jan ‘15 inaugural Doha-Frankfurt route

Excellent feedback from customers
Steep Ramp Up in FAL & pre-FAL with high focus on quality

We are now starting the real industrial journey -

- 13 customer aircraft progressing in FAL (including 3 HoV)
- Steep ramp-up and A350-1000 FAL start by early 2016

12 heads of version in 2015

Pre-FAL in Hamburg up to MSN29
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What Makes the Difference on A350 XWB? Applying Lessons Learned

**Program management**
- Alignment programme / functions with Trust of top management => **Speed**
- Risks & opportunities led at head of programme level => **Anticipation**
- Continuous de-risking of contracts with customers => **Customer confidence**

**Communication**
- Planning transparency to enable alignment => **Efficiency**
- Very regular communication with customers, markets and suppliers with explanations => **Trust**

**Technology & Maturity**
- New technology risks (Stringers, root joints) identified and mitigated
- Quality Gates and Stop & Fix approach to gain speed in FAL
- Airline-like environment during flight test campaign to accelerate operability
Airline like Environment: AIRLINE1 & Airline Office - Key Enabler for Maturity

AIRLINE Office – Voice of Customer
Providing the airlines’ experience
Contribute to validation of customer support system

Mirror airline operations
Aircraft Maturity
Tech Pub & Ground Support Equipment
Aircraft Operability
Dispatch Operations
Maintenance Efficiency

A350 focus on maturity
- Delivering an A/C with the highest dispatch reliability.
  Prepare rapid solving of in-service issues (TTGF*)

*Time To Get a Fix
AIRLINE1 – Operational Scenarios successfully tested

Integrated Turn Around

Pilot Walkaround

Avionics Fans Uploading

Auto Refuel
What Makes the Difference on A350 XWB? Applying Lessons Learned

Customisation & Industrial Requirements Reconciliation
- Catalogue policy with Enabling platform: => High Reuse / Leadtime reduction
- Qualified BFE suppliers
- Customer Definition Center for definition freeze

Supply Chain, Methods & Tools
- Reliable extended Enterprise using common development tools & process
- Industrial harmonisation across Extended Enterprise
- Steep ramp-up but limited aircraft in FAL at certification => Limits Retrofits
- Pro - active development of critical suppliers
Customisation & Industrial Requirements Reconciliation

Catalogue with Mix of Pre-developed Modules Fitted for Flex Zones

Modular Offering with almost limitless combinations
Customisation Policy contributing to A350 XWB’s success:

1. **Lower industrial risk**: 3 Heads Of Versions already in FAL at EIS

2. **85% Re-use of design solutions + Enabling platform = 12 mature CDF achieved.**
   - CDF to delivery in 12 months at Rank 100
   - Residual value protected by high commonality between customers’ aircraft configurations

3. **Cabin retrofits facilitated** by full cabin configuration representation in the DMU
   - More competitive/affordable retrofits

4. **Continuous improvement on offering** to meet the evolving market expectations
   - Involving launching customers on new catalogue products

5. **Process simplification**: ACS* & SFE

*Airbus Contracted Suppliers

Opportunities for improvement

Ramp up is coming but we are ready to bring flexibility
Common Design Environment: New way of Working

DMU (Digital Mock Up) as Master throughout the Value Chain

Same Process, Methods, Tools and Organisation
Unique DMU shared by all contributors

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A350 XWB Firm order status – end December 2014

31 Countries – 3 Alliances – 5 Leasing companies

Europe
- BRITISH AIRWAYS
- FINNAIR
- Lufthansa
- IBERIA
- AIR FRANCE KLM
- AIR CARAÏBES
- AEROFLY
- TAP PORTUGAL
- RAM
- SAS

Americas
- SYNERGY GROUP
- UNITED
- DELTA
- LAN
- TAM

Africa & Middle East
- ASIANA AIRLINES
- CHINA AIRLINES
- ETHIOPIAN
- KUWAIT AIRWAYS
- アビ
- AFRIQIYAH
- SINGAPORE AIRLINES
- HONGKONG AIRLINES
- AIR MAURITIUS
- EVA AIR

Asia & Pacific
- Air China
- Vietnam Airlines
- SriLankan
- Air Fiji
- THAI

Private Customer
- UNDISCLOSED

Leasing Companies
- UNDISCLOSED
- CIT
- AWAS
- AIR LEASE CORPORATION
- AIARCO

A350 XWB
- 780 orders from 40 customers
- 2014:
  - 57 gross orders
  - 4 new customers

Net orders as end December 2014
Profitability Protection through Production Costs convergence

Design Changes (Design to cost)

Commercial levers on Buy

Simplification of manufacturing processes

RC – Buy / Make

Early a/c learning curve

Control Concession Flow

Simplification, Design to Cost,…

Initial Target

Current Target set Q4 2014

RC Convergence
A350 XWB Cabin Improvements

- CCRC improvement
- New IFE supplier
- Optimised shape lavatories
- New aft D4 arrangement
- 3-trolley trans. galley lateral fwd D4
- 6-trolley trans. galley in center D2

With confidence

+ 12 Y in 4Class layouts
+ 18 Y in 2 Class layout
Preparing A350-1000 industrialisation on time

A350-1000
- A derivative which benefits from the A350-900 experience
On track for EIS in 2017
169 orders from 9 customers

- Trent XWB-97
- A350-1000
- 369 passengers (typical 2 class layout)
- 6 wheel bogie Main Landing Gear 1 frame longer MLG bay
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- Extended use of CFRP (Doors Surrounding Structure, fuselage frames, Bilge area, Pylon upper spar...)
- Reinforced structure where needed
- Extended wing trailing edge
- Common HTP & VTP planform
- Tooling launch
- Start of Production
- Final assembly
- Flight test
- EIS
- 1st engine run
- FTB

369 passengers (typical 2 class layout)

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Rolls Royce Trent XWB-97 Engine ran for first time

PAG CFRP S13/14 Fuselage shell – 1st Ply

UTAS MLG manufacturing started and Scale 1 Mockup
2015 for A350XWB: The year of TRANSITION to build SUSTAINABILITY

Successful start of operation in service

Keep -1000 on track by ensuring mature FAL start early 2016

Prepare the future

Increase agility of customization policy to enable new business opportunities

Stabilize and make robust industrial planning 2015/2016 for new sales opportunities

Strengthen family attractiveness (product evolution plan)
• A350 XWB EASA & FAA Type Certification achieved on schedule
• A350 XWB First Delivery to Qatar on time
• Functional & Reliability tests done with mature systems

Next steps:
• Successful start of operations
• Deliver ramp up along the whole supply chain with high focus on quality
• Continue to apply lessons learnt to keep -1000 on track

Conclusion
A350 XWB as a booster of Airbus competitiveness
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