



NGAP / TRAINAIR PLUS Regional Conference – The Americas



Training Challenges for New Generation Aircraft



NGAP / TRAINAIR PLUS Regional Conference – The Americas

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Training Challenges for New Generation Aircraft



Proving the future of commercial aviation

- **Digitization**
- **Information & Communication Technologies**
- **Composite structures**
- **Safe and cost effective aircraft operation**

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Training Challenges for New Generation Aircrafts

Changes of maintenance practices and competence

Different learner profiles

Airbus training solutions

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A300/310

A320/330/340

A380/350



- Twin engine wide body aircraft
- Forward Facing Crew Cockpit
- EFIS system
- Limited Digital AFS
- Electronic signaling for secondary flight controls
- 90% of avionics with BITE
- Access to the AFS system BITE through the Maintenance Test Panel (MTP)
- Introduction of Glass and Carbon Fibre Reinforced plastic



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A300/310

A320/330/340

A380/350



- Fly by wire technology
- Full digital Auto Flight System
- On board Maintenance System



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A300/310 **A320/330/340** A380/350

Service Provider

Ground Station

Event!

Airline MIS
MIS: Maintenance Information System

- Fly by wire technology
- Full digital Auto Flight System
- On board Maintenance System
- **Data link (ACARS, ATN)**

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A300/310 **A320/330/340** A380/350

➤ Master data link systems, access and use of A/C real time available information to perform:

Service Provider

Ground station

Event!

server **AIRMAN-web**

Airline MIS
MIS: Maintenance Information System

- Fleet monitoring
 - Technical events tracking and anticipation
 - Fleet technical status follow-up

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A300/310 A320/330/340 **A380/350**



➤ *Integrated Modular Avionics*
➤ *On board Information System*

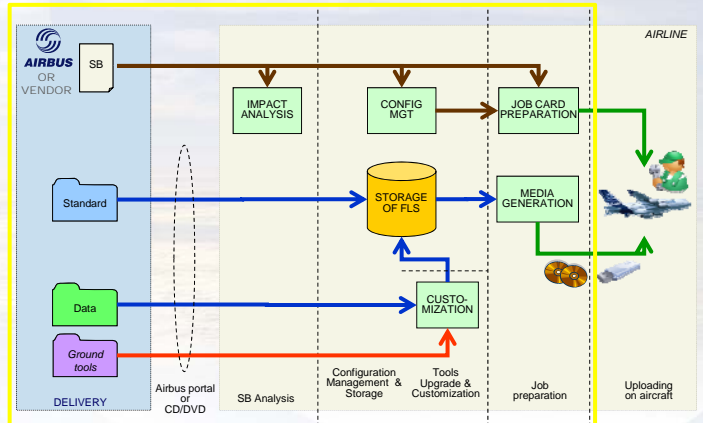


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A300/310 A320/330/340 **A380/350**

➤ *Manage NSS platform configuration*
➤ *Prepare software loads*



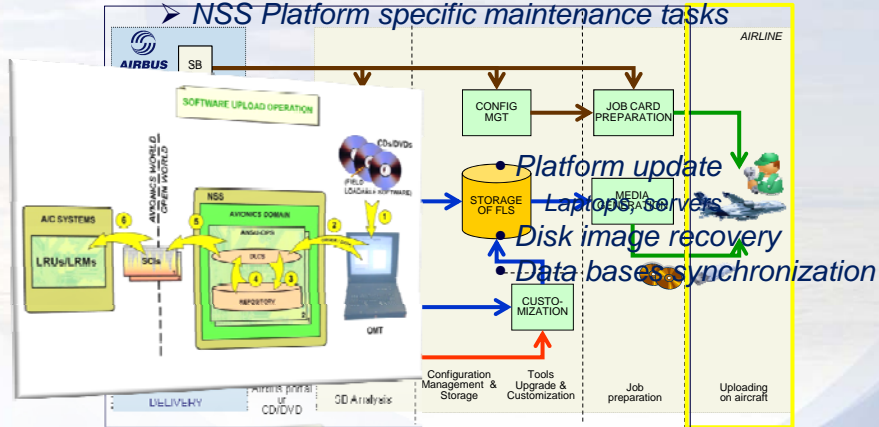
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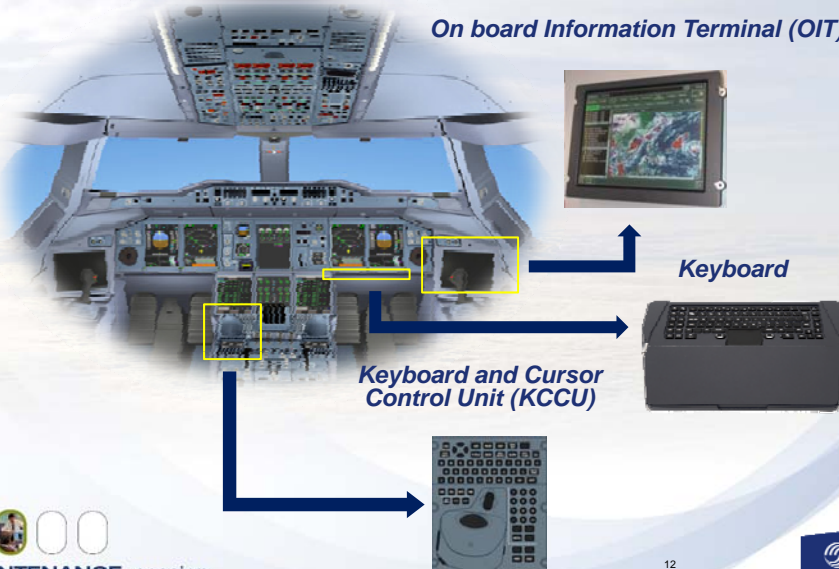
AIRBUS

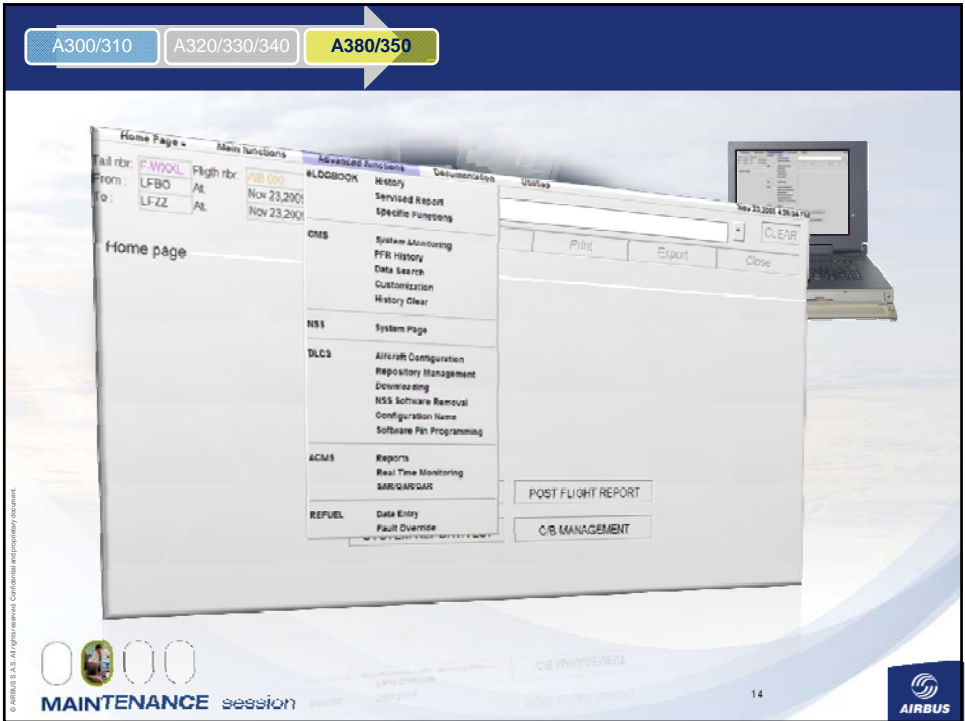
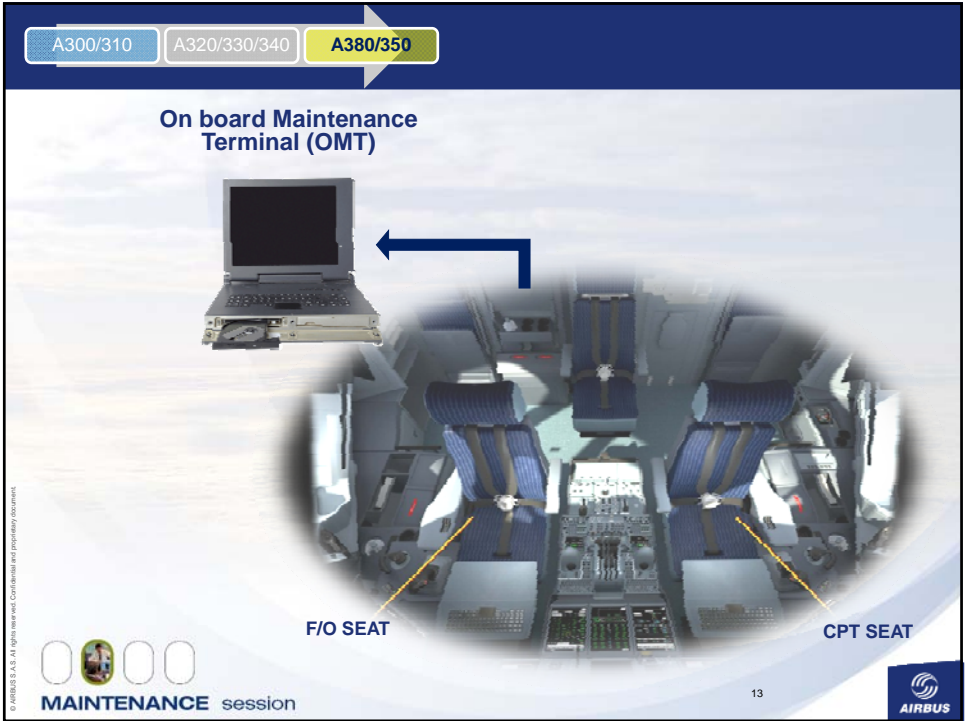
- Manage NSS platform configuration
- Prepare loads

➢ NSS Platform specific maintenance tasks



On board Information Terminal (OIT)





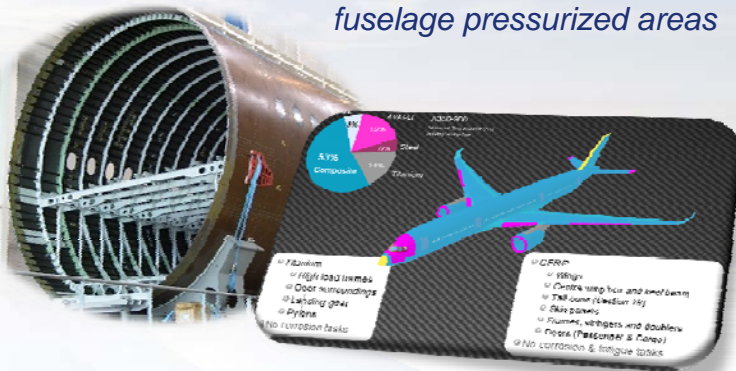
A300/310

A320/330/340

A380/350

➤ A350 to include more than 50% of composites

➤ Use of composites extended to the fuselage pressurized areas



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A300/310

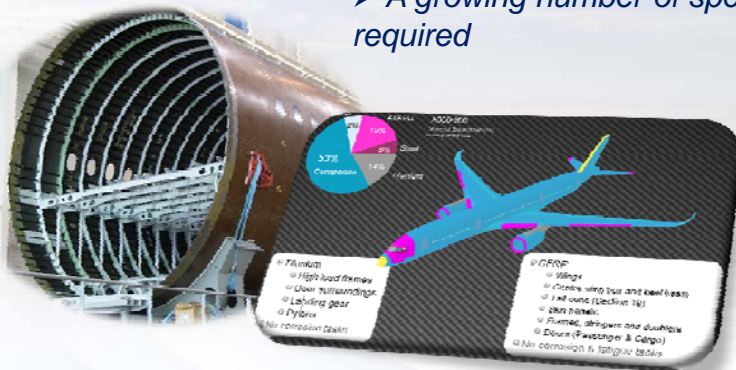
A320/330/340

A380/350

➤ Innovations in aircraft design and production processes

➤ STD practices are well mastered

➤ A growing number of specialists required



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Training Challenges for New Generation Aircrafts



Changes of maintenance practices and competence
Different learner profiles
Airbus training solutions

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Different learner profiles

➤ Marc PRENSKY paradigm:

Digital Immigrant VS Digital Native

Digital Native preferred learning environment

- From multiple sources
- Randomly
- Learn by doing
- Gaming
- In their time
- In their place
- Through graphics, sounds, video...
- Multitasking & parallel processing

Thought bubbles contain:

- SHOOH! I LEARN BY LISTENING ... I THINK SO LOUD!
- I AM A VISUAL LEARNER
- I LEARN BY DOING...

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Different learner profiles

- Marc PRENSKY paradigm:
Digital Immigrant VS Digital Native

- Digital Immigrant:

- Varying level of general computer literacy
- Input devices
Keyboard / Mouse..
- User interface elements
Windows, menus, icons, hyperlinks...



Varying level of trust in a digital environment



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Training Challenges for New Generation Aircrafts



Changes of maintenance practices and competence
Different learner profiles
Airbus training solutions



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Airbus training solutions

➤ Competency based training



- Master On board Maintenance System (OMS) interfaces & applications
- Gain experience & confidence at dispatch and troubleshoot



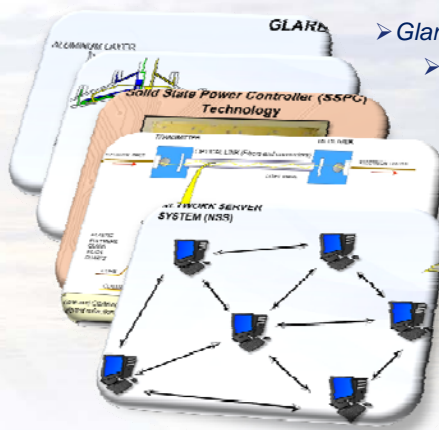
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Airbus training solutions

➤ New technology course



- Glare and composites
- Hydraulic system 5000 PSI technology
- Solid state power controller (SSPC)
- Fiber optic cable and aluminum wiring
- Avionics full duplex switched Ethernet, Network Server System (NSS), On board Information System (OIS)

- Bridge the gap from basic to type training



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Airbus training solutions

- NSS platform specific training available at Line Maintenance, Engineering and Shop level.



- Integration of OIS dedicated tasks in type training courses:
 - *Application load*
 - *Disk image recovery*
 - *Data bases synchronization*



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Airbus training solutions

- *Increasing training needs*



- *Training and qualification of new instructors*
- *Development of structure shops*



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Conclusion

- **New technologies brought benefits**
 - *Safety, Ease of use, Operating costs*
- **Maintenance practices have changed**
 - *New competencies required*
 - *General computer literacy,*
 - *Information and communication skills (ICT)*
- **Different learner profiles**
 - *Digital Immigrant / Digital Native*
- **Airbus solutions**
 - *Competency based training, New Tech course, NSS platform specific training, increased training capacity on composites*

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