



## General Briefing on Technical Data

Séminaire BTS Aéronautique



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- ▣ Customer Services overview
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  - ▣ Deliverables & Access
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  - ▣ Inputs
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  - ▣ Resources
- ▣ Author Skills & Competencies



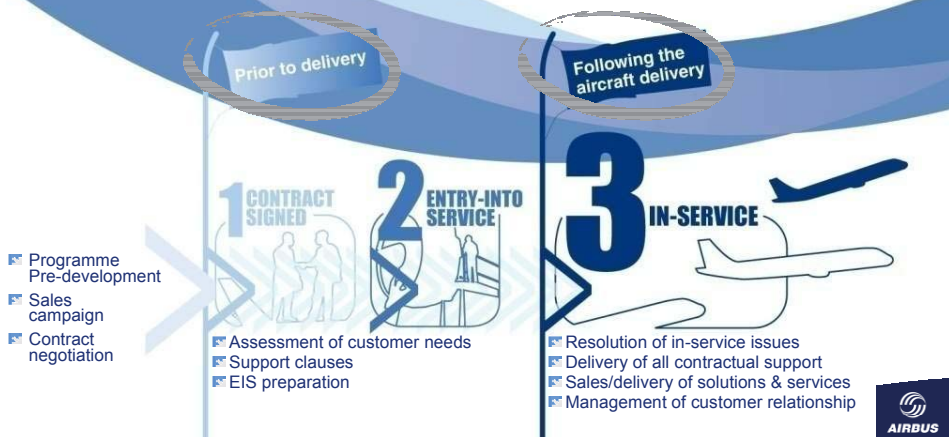
# Customer Services overview



## OUR COMMITMENT

Up to **30 years** of  
**customer relationship**

- Support customers all along their aircraft life cycle
  - 5 298 in-service aircraft / 307 customers (at end of Jan 2009)



# EVOLUTION OF THE AIRBUS FAMILY

9,207 orders  
307 customers



5,534 delivered to date  
483 delivered in 2008

Data to end Jan 2009



# WORLDWIDE LOCATIONS AND PARTNERS

3 Customer support centres



a world of cultural diversity

4 Training centres



4 Material & logistics centres

3 warehouses



# A WORLDWIDE NETWORK

a world of cultural diversity



**279** Resident Customer Support Reps located in more than **165** airline stations



# CUSTOMER SERVICES

**3** operating units of expertise aligned with Airlines process

**2** operating units for transversal activities



**1** Maintenance & Engineering



**2** Material, Logistics & Suppliers



**3** Training & Flight Operations



**1**

**Programmes**  
Aircraft programme life cycle management



**2**

**Services & Customer Support**  
Main customer interface & integrated solutions offering



## Customer Services activities

# 3 domains of expertise aligned with Airlines process

- Maintenance & Engineering
- Material, Logistics & Suppliers
- Training & Flight Ops

1



2



3



novation non-stop innovation

## Customer Services activities **Maintenance & Engineering**

- Engineering Support
- Maintenance Programmes & Services
- **Technical Data**
- Upgrade Services
- Aircraft Embodiment Operations





# Customer Services activities Maintenance & Engineering

## Technical Data overview

- Provide Airbus customers with technical data and associated support for safe, reliable and economical aircraft operations



## TECHNICAL DATA

### Prime roles

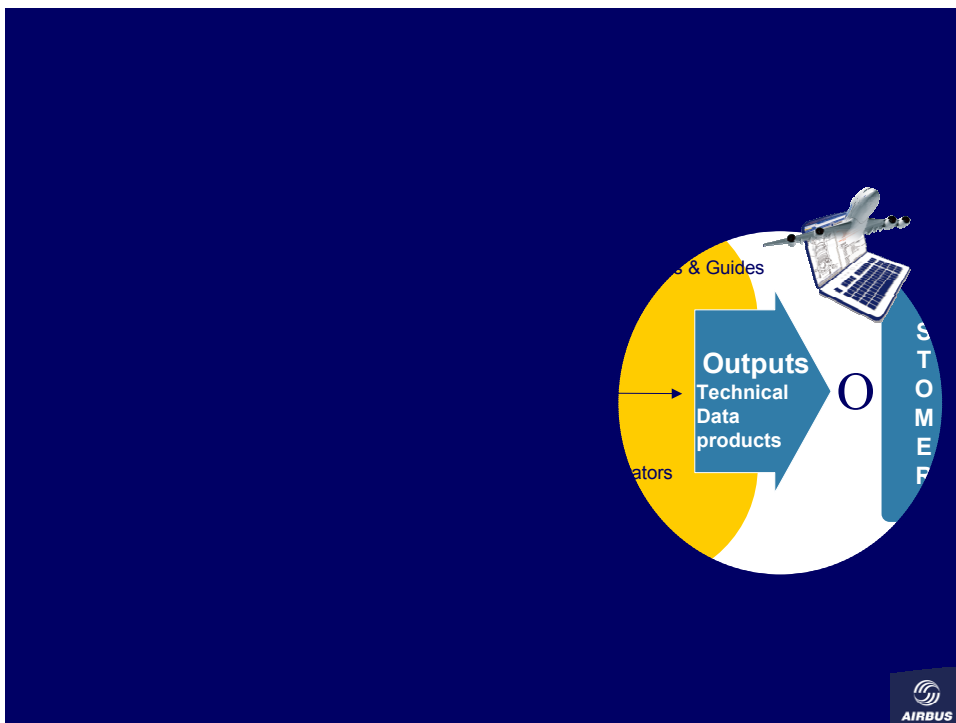
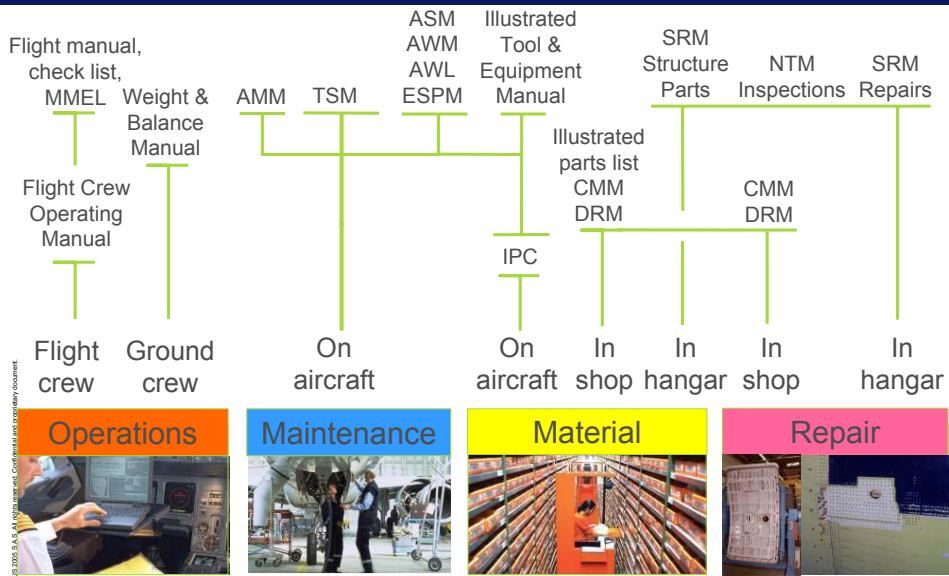
- ▶ Define, produce & supply Technical Data products for Airbus aircraft Customers
- ▶ Familiarize operators with Technical Data products
- ▶ Support operators on a daily basis in the use of Technical Data products
- ▶ Contribute to Development of industry standards for delivery of digital technical data products off-line and on-line



- ▶ To fulfill requirements on Continued Airworthiness JAR 21 (**Safety**)
- ▶ To contribute to A/C Dispatch Reliability (**Operational efficiency**)
- ▶ To cover Contractual commitments (**Aircraft contract**)



# TECHNICAL DATA MAIN PRODUCTS



# AirN@v SINGLE BROWSER FOR MAJOR PRODUCTS



- AD/CN
- AOT
- OIT
- TFU
- SIL
- SB
- MID
- FOT
- MOD
- VSB

- SM
- CML
- ESPM
- TEM

- AMM
- TSM
- IPC
- PIPC
- AWM
- ASM
- AWL
- ESPM

- MPD

- CMMm
- DFPRM

- SRM
- NTM

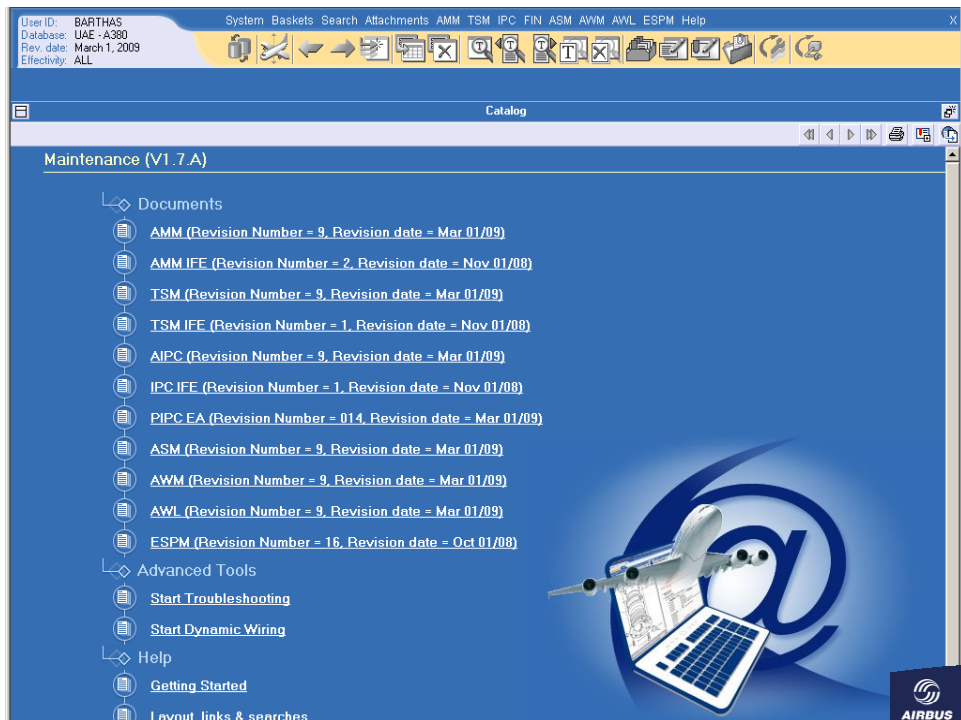
- 100 % Digital
- 100 % Available On line via "AirbusWorld"
  - Consultation
  - Download

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User ID: BARTHAS  
 Database: SIA - A380  
 Rev. date: March 1, 2009  
 Effectivity: ALL

System Baskets Search Attachments AMM TSM IPC FIN ASM AWM AWL ESPM Help

Document Tabs

AirN@v / Maintenance

Table of contents

28-21-54 - ELEMENT - FUEL PUMP (MAIN & STANDBY)

28-21-54 - ELEMENT - FUEL PUMP (MAIN & STANDBY)

28-21-54 PB 401 CONF 00 - ELEMENT - FUEL PUMP (MAIN & STANDBY) - REMOVAL/INSTALLATION

TASK 28-21-54-000-801-A  
 Removal of the Fuel Pump Element (Main & Standby)

FIN : [50A1](#) , [50A2](#) , [50A3](#) , [50A4](#) , [60A1](#) , [60A2](#) , [60A3](#) , [60A4](#)

**WARNING:** MAKE SURE THAT THE SAFETY DEVICES AND THE WARNING NOTICES ARE IN POSITION BEFORE YOU START A TASK ON OR NEAR:

- THE FLIGHT CONTROLS
- THE FLIGHT CONTROL SURFACES
- THE LANDING GEAR AND RELATED DOORS
- COMPONENTS THAT MOVE.

MOVEMENT OF COMPONENTS CAN KILL OR CAUSE INJURY TO PERSONS AND CAN CAUSE DAMAGE.

**WARNING:** MAKE SURE THAT YOU HAVE THE CORRECT FIRE FIGHTING EQUIPMENT AVAILABLE.

**WARNING:** BE CAREFUL WHEN YOU USE CONSUMABLE MATERIALS. OBEY THE MATERIAL MANUFACTURER'S INSTRUCTIONS AND THE LOCAL REGULATIONS. MAKE SURE THAT THERE IS A GOOD FLOW OF AIR THROUGH THE WORK AREA. DO NOT BREATHE THE FUMES. DO NOT SMOKE. DO NOT USE THESE MATERIALS NEAR A FLAME, SPARKS OR SOURCES OF HEAT. USE PROTECTIVE CLOTHING, GOGGLES AND GLOVES. IF YOU GET ONE OF THESE MATERIALS:

- ON YOUR SKIN OR IN YOUR EYES, FLUSH IT AWAY WITH A FLOW OF CLEAN WATER.
- IN YOUR MOUTH, GET IMMEDIATE MEDICAL AID.

IN GENERAL, THESE MATERIALS ARE FLAMMABLE, POISONOUS AND SKIN IRRITANTS.

**CAUTION:** YOU MUST MOVE THE FUEL PUMP ELEMENT DOWN 19 mm (0.75 in.) (YOU MUST SEE ALL O

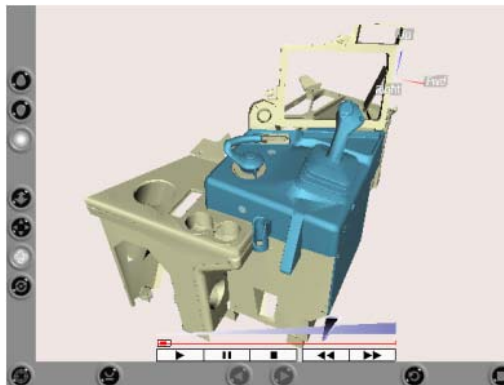
Figure 28-21-54-991-00300-A / SHEET 1

Figure 28-21-54-991-00300-A / SHEET 1

AIRBUS

## AIRN@V - USE OF VIRTUAL REALITY (VR)

- Airbus vision is to use Virtual Reality (VR) to COMPLEMENT description of some work to be performed on the Aircraft.
- VR will NOT replace graphics. Graphics are needed for Hard Copy Job Cards production.
- VR will be used in very specific cases
  - Working Step difficult to explain
  - Dispatch related items



# GENERIC, ENVELOPE & CUSTOMISED MANUALS

- **Generic** when applicable to all Airbus aircraft programmes

- Examples:

- ESPM contains all the data needed to identify and repair wires and standard electrical equipments.
- CML details the characteristics and gives procurement sources of consumable materials such as grease, oil, paint, etc.

These manuals are Airbus generic.

- **Envelope** when applicable to a given aircraft programme

- Example: SRM gives instructions for structural damages identification, allowable damages and instructions on how to repair the aircraft structure.

This manual is envelope.

- **Customised** when generated with a configuration management

- Examples: AMM, ASM, AWM, AWL, IPC, TSM, CCOM, MMEL, WBM ...

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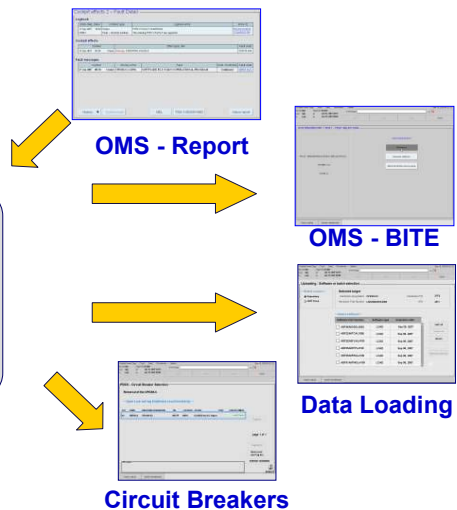
## A380 ON BOARD INTEGRATION



**Maintenance Workstation**



**On Board Information Terminals**



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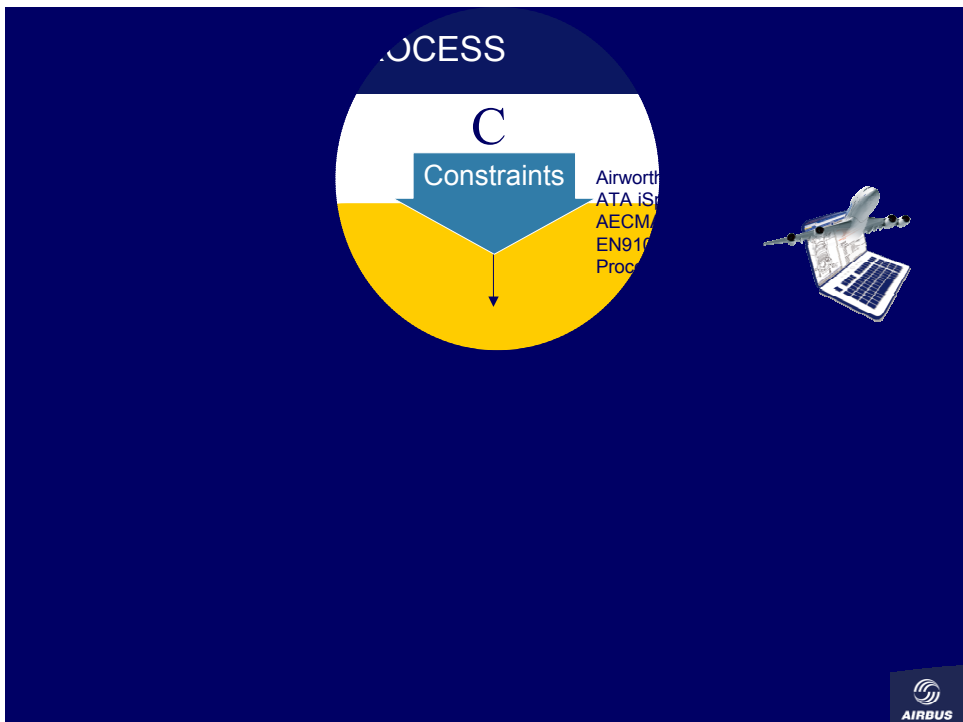
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# A380 TECHNICAL DATA FIGURES

- 9 000 AMM Tasks
- 8 000 AWM Figures for 100 000 wires
- 10 000 IPC Figures for 180 000 items
- 15 000 TSM Procedures for 40 000 faults



## TECHNICAL DATA - REGULATORY CONSTRAINTS

- ATA iSpec2200
- AECMA Simplified English PSC-85-16598
- EN9100
- 21A57, 61, 107 (minor Mod), 120(STC), 449(Repair) – instructions for continued airworthiness
- CS 25.1529 and appendix H
- Airbus Procedures

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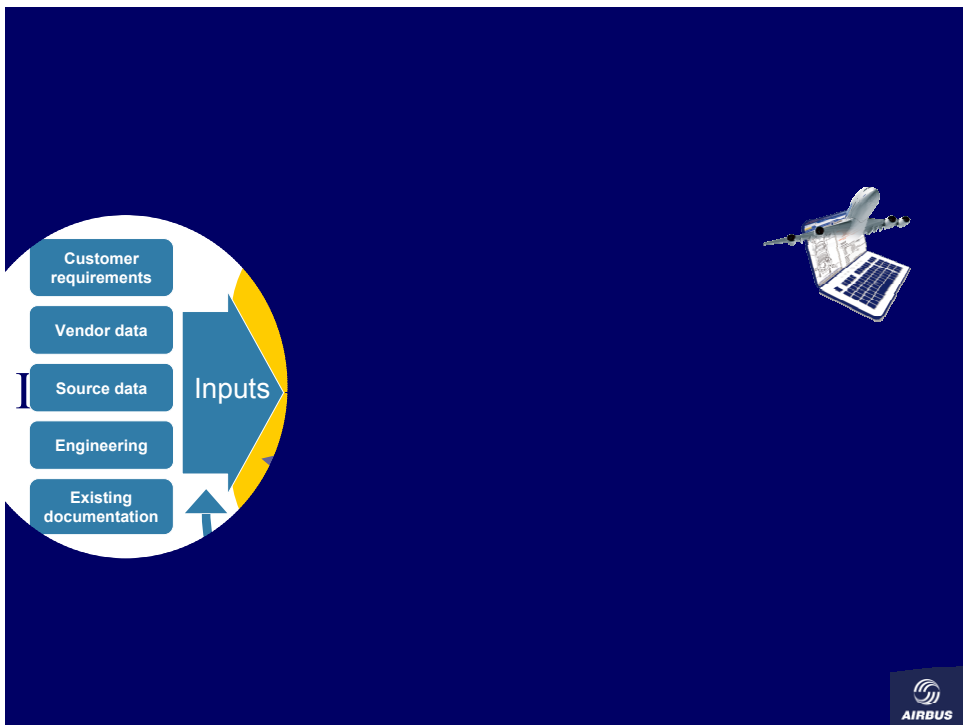


## TECHNICAL DATA - CUSTOMER CONSTRAINTS

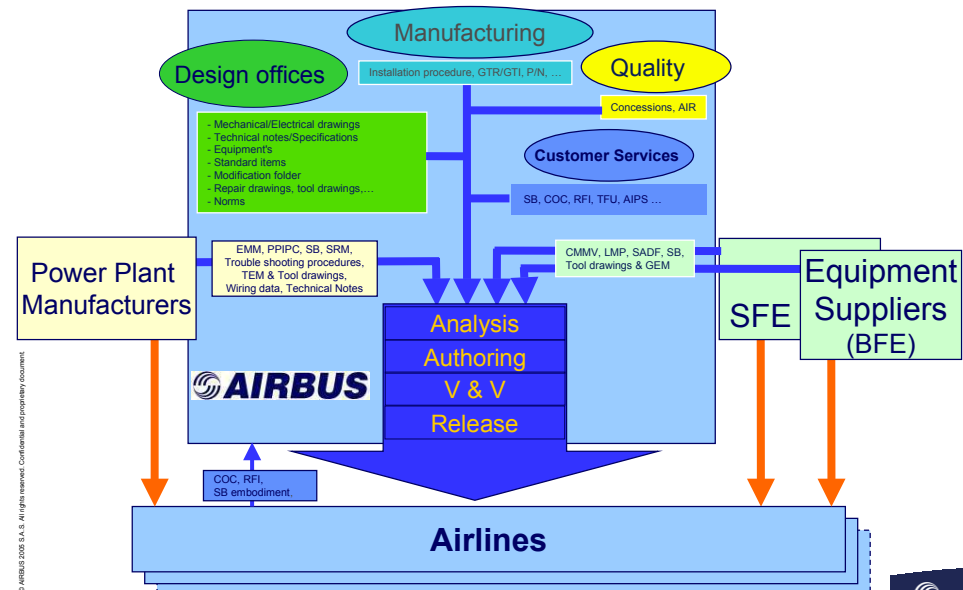
- Technical Data are basic input for airlines and MRO operations & must be:
  - **Ready for EIS** (from minus one year to EIS according to products)
  - **Compliant** with released and approved design definition (vendors, engine manufacturer, ...)
  - **Complete and consistent** across products
  - **Customized** according to Aircraft configuration & Customer Fleet
  - **Maintained** after delivery to remain valid during the life of the aircraft

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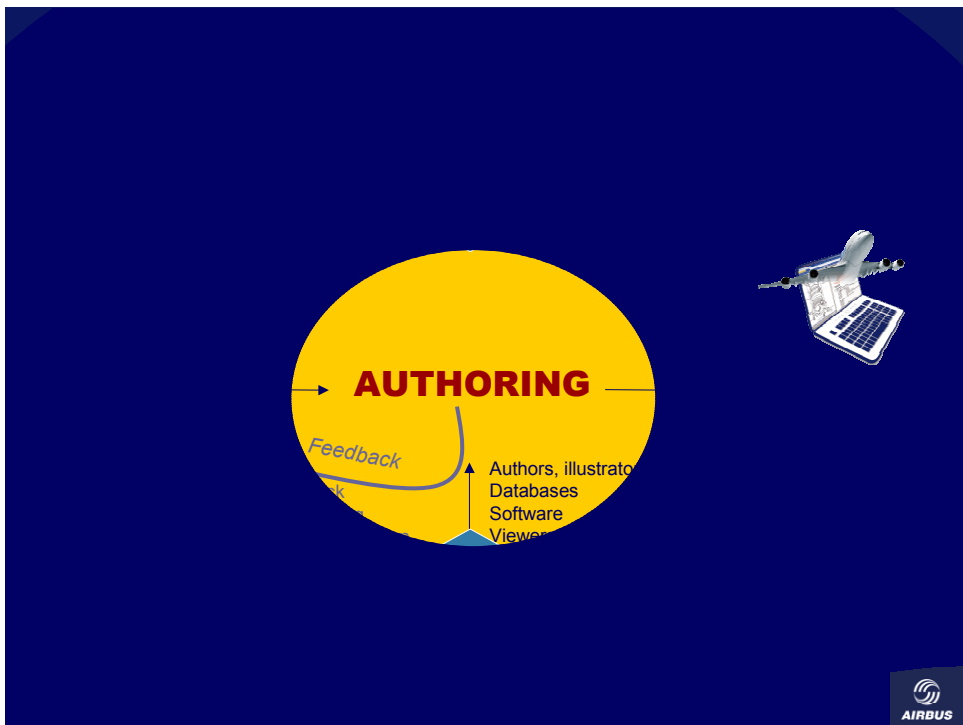




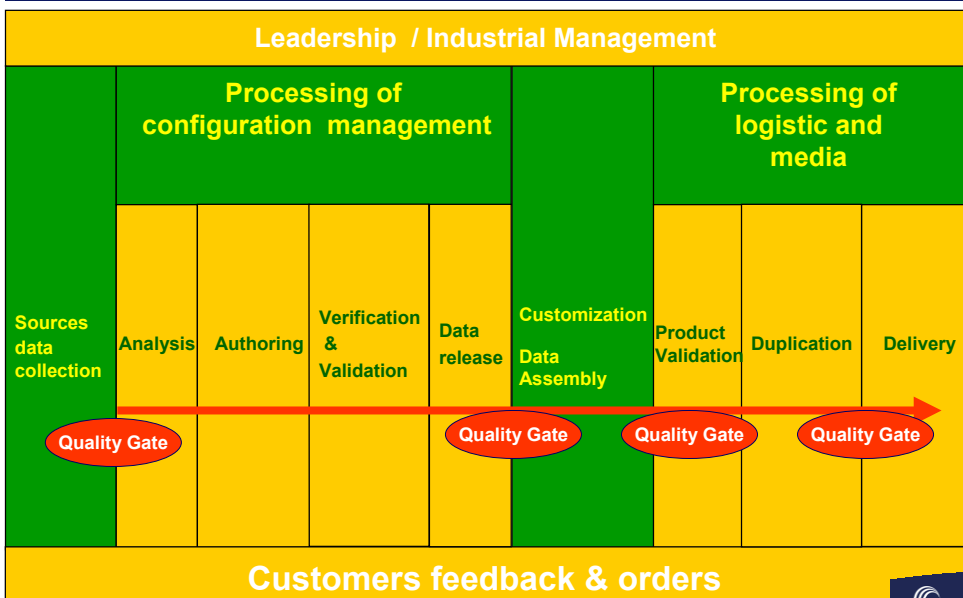
# TECHNICAL DATA PROCESS - SUPPLIERS



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## TECHNICAL DATA PROCESS







# PROOF-READING

- Done by authors receiving a quality autorisation
- According to a defined checklist
- In a dedicated verification report

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# EXTERNAL VERIFICATION

- For the Maintenance products a verification can be required from:
  - ▶ The Design Office
  - ▶ Maintainability
  - ▶ Flight Ops
- For the Repair products a verification can be required from:
  - ▶ The Design Office
  - ▶ Repair engineering

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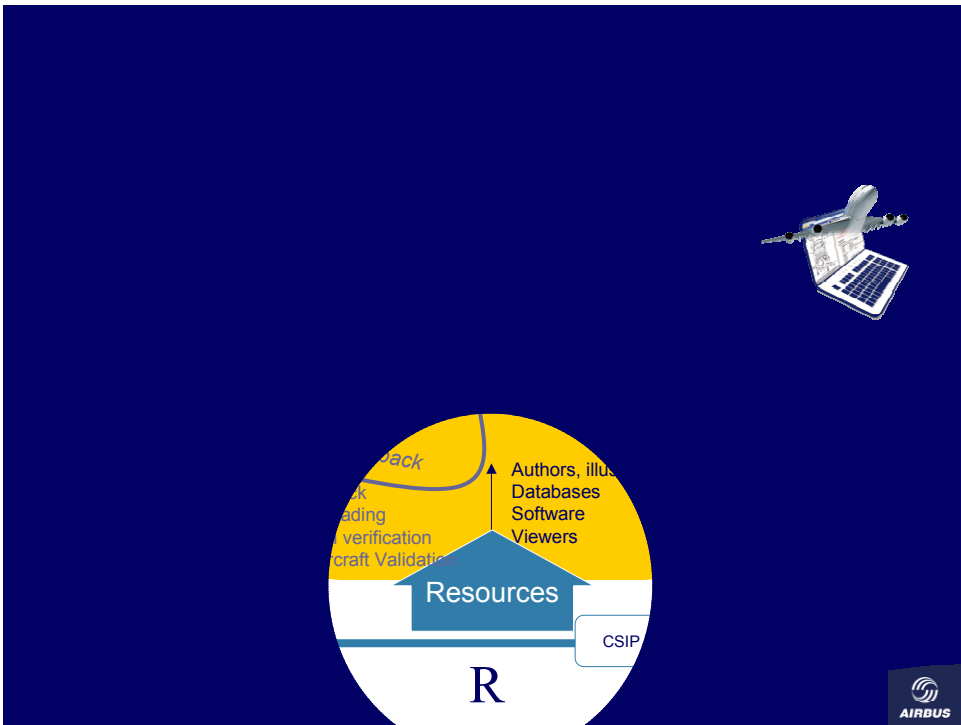
# TECHNICAL DATA ON AIRCRAFT VALIDATION

- OAV for A380 development phase was conducted on all AMM tasks
- A dedicated trans-national team performs the OAV in relation with the Flight line.



- Other validations on the product were conducted for the A380, in the framework of the A380 maturity campaign
  - ▶ Operability Test Campaign
  - ▶ Maintainability demonstration





## TECHNICAL DATA

- HAMBOURG: 327
  - FILTON: 74
  - TOULOUSE: 341
  - MADRID: 26
  - CHINA: 2
  - **TOTAL 770**
- **Authoring : To be as close as possible to the source of Data**
    - Structure Definition
      - SRM
    - System Definition
      - AMM D&O and AMM Tests
      - Schematics
      - TSM, ...
    - System Installation
      - IPC (Inst figures)
      - AMM Removal / Installation
    - Procurement
      - Vendor Monitoring
      - IPC (Maint figures)
    - Some exceptions (Industrial Choice, Single Leadership, ...)

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*TD authoring workshare follows the A/C design workshare*



# TECHNICAL DATA SUBCONTRACTING NETWORK

TRANSNATIONAL VIEW

	FRANCE	UK	GERMANY	SPAIN	
VIEW PER COUNTRY	SONOVISION	PENNANT-SONOVISION-ITEP	SONOVISION EURODOC	UTE INDRAS-SYSTEMAS-SONOVISION-ITEP	SONOVISION
	CISIA	GKN	AEROTEC	GRUPO APEX	ALTEN Group
	EDI	PIPER	RDE	GRUPO TAM/INGETOOLS	TPRI
	STUDEC	LIONBRIDGE/MIDWEST	P3	CT DOCUMENT	IDEA
	EURODOC	GED	GCT	GED	G2E

> 1780 FTE

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# AUTHOR SKILLS & COMPETENCIES



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“We contribute to **safety** of operations  
and to the highest level of **customer  
satisfaction** through a user oriented  
**Technical Data**”



## GENERAL INFORMATION - LIST OF MANUALS

### Operational Manuals

Check-List, Abnormal/Emergency/Quick Reference Hand Book (CL/QRH)  
Cabin Crew Operating Manual (CCOM)  
Flight Crew Operating Manual (FCOM)  
Flight Manual (FM)  
Load and Trim Sheet Software (LTS/TS)  
Master Minimum Equipment List (M MEL)  
Performance Programs Manual (PPM)  
Take-off Charts (TC)  
Weight and Balance Manual (WBM)  
Aircraft Performance Monitoring Program (APM)  
Airbus Take-off Analysis Module (ATAM)  
Computerized Flight Plan (CFP)  
Flight Plan Computation Program (FLIP)  
In Flight Performance Computation Program (IFP)  
Less Paper in the Cockpit (LPC)  
Noise Definition Manual (NDM)  
Noise Level Calculation Program (NLCP)  
OCTOPUS (OCTOPUS)  
Tabulation and Interpolation Program (TAB)  
Take-off and Landing Chart Computation Program (TLC)  
Take-off Charts Computation Program (TCP)

### Miscellaneous Publications

Aircraft Configuration Matrix (ACM)  
Airplane Characteristics/Maintenance Facility Planning (AC/MFP)  
Aircraft Recovery Manual (ARM)  
Aircraft Systems Maintenance Aids (ASMA)  
Cargo Loading System Manual (CLS)  
Corrosion Prevention and Control Program (CPCP)  
Crash Crew Chart (CCC)  
List of Radioactive and Hazardous Elements (LRE)  
Livestock Transportation Manual (LTM)  
Quarterly Service Report (QSR)  
Service Bulletins (SB)  
Service Bulletin Index (SBI)  
Service Information Letter (SIL)  
Standards Manual - Part 3 SM-Part 3  
Supplement 1 - Cross Reference List for Alternative Fasteners SM-S1  
Supplement 2 - Optional Suppliers List, North America SM-S2  
Supplemental Structural Inspection Document (SSID)  
Transportability Manual (TM)  
Vendor Information Manual (Equipment) (VIM/E)  
Vendor Information Manual (GSE) (VIM/GSE)  
Supplier/Vendor Product Support Agreements (SPSA/VP SA)  
General Briefing on Technical Data

### Structural Manuals

Non-destructive Testing Manual (NTM)  
Repair Assessment Guidelines (RAG)  
Structural Repair Manual (SRM)

### Overhaul Data

Cable Fabrication Manual (CFM)  
Component Documentation Status (CDS)  
Component Evolution List (CEL)  
Component Maintenance Manual Manufacturer (CMMM)  
Component Maintenance Manual Vendor (CMMV)

### Engineering Documents

Airbus Drawing Access (AIDA)  
Cabin Door Trainer Data (CDT)  
Cabin Service Trainer Data (CST)  
Cabin Trainer Data Packages (CTDP)  
Cabin Emergency Evacuation Trainer (CEET)  
Engineering Technical Data Service (ETDS)  
Process and Material Specification (PMS)  
Standards Manual (SM)

### Maintenance and Associated Manuals

Aircraft Maintenance Manual (AMM)  
Aircraft Wiring Manual (AWM)  
Aircraft Schematic Manual (ASM)  
Aircraft Wiring list (AWL)  
APU Build-Up Manual (ABM)  
Built In Test Equipment (BITE)  
Computer @ssisted Documentation Education Tutorial System (C@DETS)  
Component Location Manual (CLM)  
Consumable Material List (CML)  
Duct Repair Manual (DRM)  
ECAM System Logic Book (ESLB)  
Electrical Load Analysis (ELA)  
Electrical Standard Practices (ESP)  
Electrical Standard Practices Manual (ESPM)  
Fuel Pipe Repair Manual (FPRM)  
Illustrated Parts Catalog + Additional Cross Reference Table (IPC/ACRT)  
Maintenance Planning Document (MPD)  
On-Board Maintenance System (OMS)  
Power Plant Build-Up Manual (PBM)  
Power Plant Illustrated Parts Catalog (PIPC)  
Standard Job Card (SJC)  
Support Equipment Summary/Tools Equipment Index/Tools and Equipment Manual (SES/TE/TEM)  
Technical Follow-Up (TFU)  
Technical Publications Combined Index (TPCI)  
Time Limits/Service Life Limits and Maintenance Checks (TLMC/SLMC)  
Tool and Equipment Drawings (TED)  
Trouble Shooting Manual (TSM)



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