

### 附件三：簡報

#### 一、法商空中巴士公司



China Airlines 6<sup>th</sup> A350-900 delivery  
Toulouse, 22<sup>nd</sup> May 2017

**Airbus Update**

François Caudron  
SVP Marketing

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**AIRBUS**

An **Airbus** takes off or lands every 1.4 seconds

<b>17,105</b> Orders	<b>10,390</b> Deliveries	<b>6,715</b> Backlog
-------------------------	-----------------------------	-------------------------

End April 2017

## China Airlines and Airbus – a 35 year partnership

Five Airbus aircraft types operated since the first A300B4 delivery in June 1982



1982 A300B4

1989 A300-600R

1994 A320

2001 A340-300

2004 A330-300



... and the A350 XWB  
since 30<sup>th</sup> September 2016!

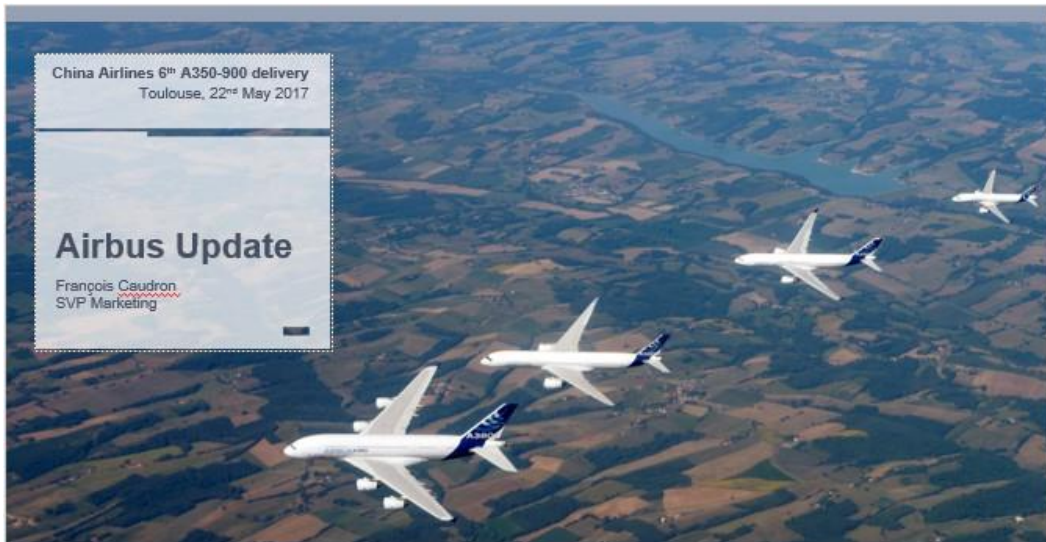
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China Airlines 6<sup>th</sup> A350-900 delivery  
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### Airbus Update

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Unbeatable fuel efficiency

**A320**

<b>13,081</b> Orders	<b>7,564</b> Deliveries	<b>5,517</b> Backlog
-------------------------	----------------------------	-------------------------



End April 2017



**Most popular  
airliner ever**

6,872  
A320 Family  
in passenger service

More than any other  
passenger airliner –  
**EVER!**

6,522 737 in pax service  
Source Ascend 11/05/2017

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AIRBUS



**103 A320neo delivered**

**23 operators**

**76,500 flight hours**

**99.52% operational reliability**

**8.68 hours average daily utilization**

<b>Lufthansa</b> January 2016	<b>Indigo</b> March 2016	<b>GoAir</b> June 2016	<b>Pegasus</b> July 2016		
<b>LATAM</b> August 2016	<b>AirAsia</b> Sept 2016	<b>Volaris</b> Sept 2016	<b>VivaAerobus</b> October 2016	<b>Spirit</b> October 2016	<b>Avianca Brasil</b> October 2016
<b>Frontier</b> October 2016	<b>Azul</b> October 2016	<b>SAS</b> October 2016	<b>Air Astana</b> November 2016	<b>HK Express</b> December 2016	<b>China Southern</b> December 2016
<b>ANA</b> December 2016	<b>Air India</b> February 2017	<b>CitiLink</b> February 2017	<b>SriLankan</b> February 2017	<b>Interjet</b> April 2017	<b>WOW Air</b> April 2017

As of end April 2017  
Average daily utilization for entire fleet  
Reliability is for last 12 months

 AIRBUS

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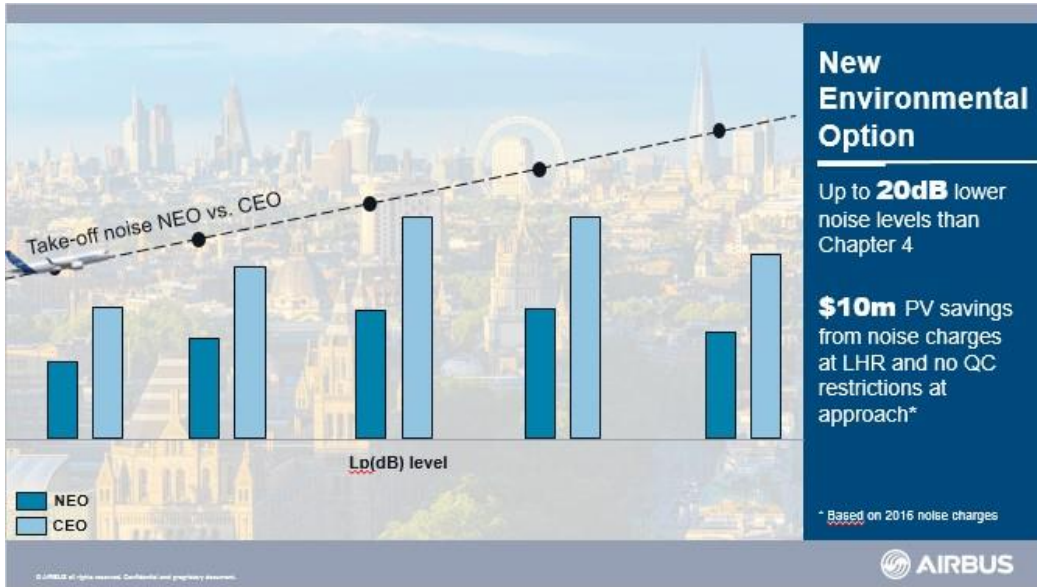
**20%**  
lower fuel burn &  
CO<sub>2</sub> emissions\*

NOx emissions  
**50%**  
below CAEP/6

**20**<sup>EPNdB</sup>  
margin to  
Chapter 4

**A320neo**  
New Environmental Option

\*Per seat, 2020 A320neo PW vs A320neo IAE  
Best engine shown



## A321neo, the aircraft of choice for Asia



More than  
**400**  
orders in  
the region

## A321neo success

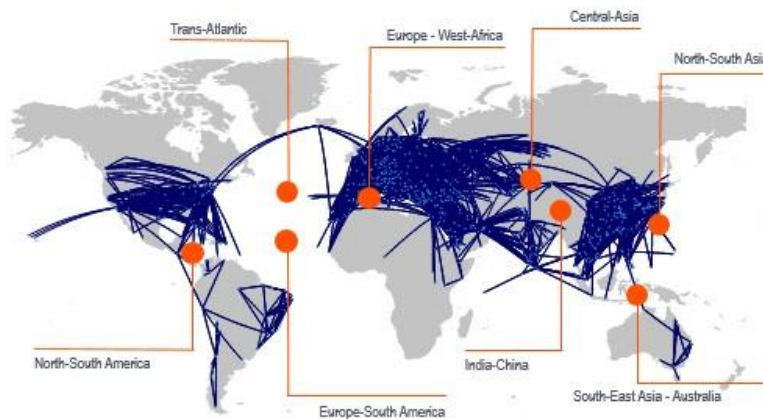
The A321neo offers unbeatable economics with the lowest seat costs

Source: Ascend, end March 2016

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## A321neo market potential



Opens up new business opportunities thanks to its **4000nm** range

Source: OAG end June 2015

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An **A330** takes off or lands every 20 seconds

**1,683**  
Orders

**1,342**  
Deliveries

**341**  
Backlog



**A330neo**  
true new generation aircraft

**new** A350 generation engines

**new** wings with A350 sharklets

**new** A350 cabin

**Flying further with less fuel**







AIRSPACE

### Airspace

Perfect space for passengers and airlines

- 18" wide Economy seats
- 3dB quieter than 787
- Integrated connectivity

Click to add text

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### First A330neo

Getting ready for 1<sup>st</sup> flight H1 2017  
Ground testing underway



A330-900 AIRBUS

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## A350 XWB: shaping the future of air travel

<b>831</b> Orders	<b>81</b> Deliveries	<b>750</b> Backlog
----------------------	-------------------------	-----------------------

2nd April 2017

## 81 A350-900 delivered around the world

Qatar Airways	Vietnam Airlines	Finnair	LATAM	Singapore Airlines	Air Caraïbes
Cathay Pacific	Ethiopian	Thai	China Airlines	Lufthansa	

Deliveries as of 31<sup>st</sup> March 2017

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**A350-900** in service

- > **99.0%** monthly operational reliability with steady improvement
- 90+** routes operated
- 229,000+** revenue flight hours
- 8.5+** million passengers

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The image shows the front view of an Airbus A350-900 aircraft on a tarmac at night. The aircraft is illuminated by ground lights, and its reflection is visible on the wet pavement. A jet bridge is connected to the aircraft's cabin door. The background shows a dark sky and some airport lights in the distance.



**25%**

**New levels of efficiency**

- 25% lower
  - operating cost
  - fuel burn
  - CO<sub>2</sub> emissions

Compared to previous generation

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The image features a close-up view of the wingtip of an Airbus A350-900 aircraft, showing the wingtip fence and the 'A350-900' text. The background is a bright blue sky with white clouds. The large '25%' text is prominently displayed in the center. To the right, a dark blue box contains the text 'New levels of efficiency' and a list of benefits. The Airbus logo is in the bottom right corner.



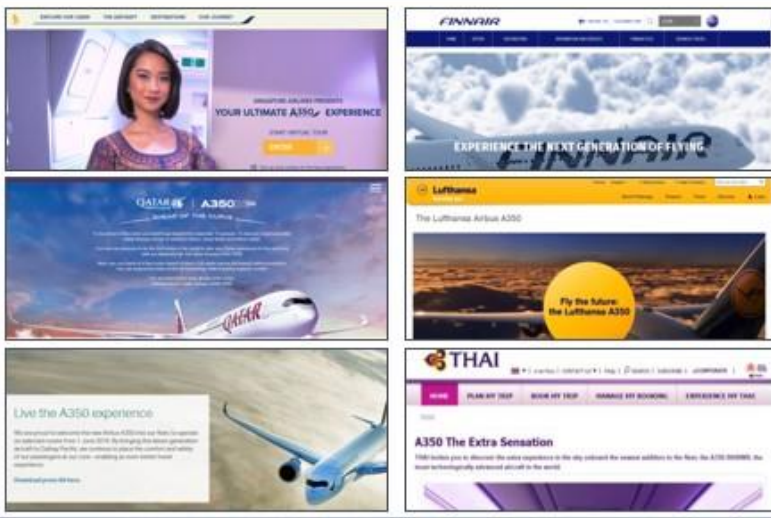
## Airspace cabin

- 18" Economy seats
- Quietest twin-aisle cabin  
6dB quieter than 787
- 20% more fresh air, optimised cabin altitude, temperature and humidity

Click to add text

 AIRBUS

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## A350-900 inspiring airline feedback

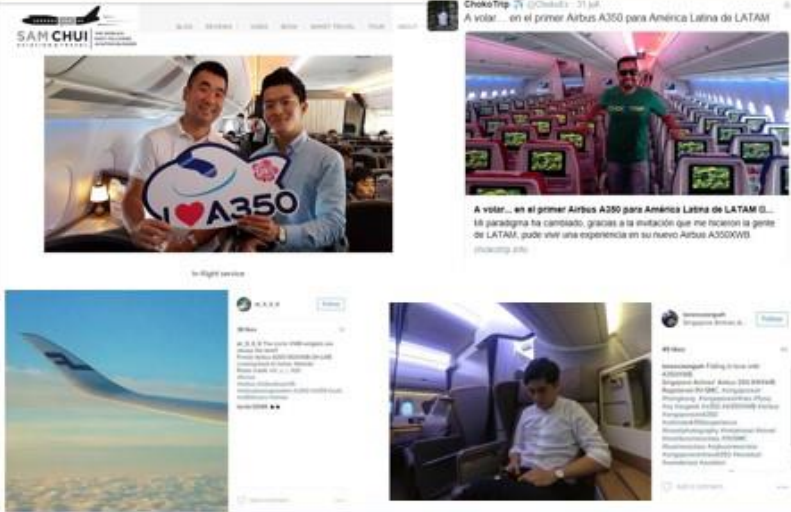
Live the ...

- .. Ultimate
- .. Sensation
- .. Next generation
- .. Experience
- ... the future

Click to add text

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**SAM CHUI**  
SALES & MARKETING

**ChokoTrip** @ChokoTrip · 21 Jul  
A volar... en el primer Airbus A350 para América Latina de LATAM

**A volar... en el primer Airbus A350 para América Latina de LATAM G...**  
El paradigma ha cambiado, gracias a la innovación que me hicieron la gente de LATAM, pude vivir una experiencia en su nuevo Airbus A350-900.

**in-flight service**

**Walter**  
El A350-900 es un avión increíblemente cómodo y espacioso. El servicio de LATAM es excelente y el personal de cabina es muy profesional. ¡Una experiencia increíble en el primer Airbus A350-900 para América Latina!

**in-flight service**

**Walter**  
El A350-900 es un avión increíblemente cómodo y espacioso. El servicio de LATAM es excelente y el personal de cabina es muy profesional. ¡Una experiencia increíble en el primer Airbus A350-900 para América Latina!


## A350-900

inspiring passenger feedback

Xtra...

- ... Modern
- ... Spacious
- ... Comfortable
- ... Quiet

Click to add text



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**A350-1000**  
first flight on time

The A350-1000 successfully took to the skies on 24<sup>th</sup> November 2016

Click to add text



## A350-1000

first flight on time

The A350-1000 successfully took to the skies on 24<sup>th</sup> November 2016

Click to add text



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Cold weather



High & warm airfields



Auto-land function



Cabin and air systems

## A350-1000 flight test

3 flight test aircraft

On-track for certification in H2 2017

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Bei Tai "Secret" Handels & Produktionsgesellschaft mbH - Region - Release

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Seating capacity

400 seats



A350-1000

350 seats



A350-900

300 seats



From Taipei to New York



Range

## Long range capability

Operational flexibility: from 300 to 400 seats, consistent range to fly from Taipei to New York

CAL Flight Profile (3% trip fuel, IBA+8)  
CAL mission rules (Passenger 250 lbs)

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**The Airbus solution for China Airlines**

A320neo and A350 XWB – complementary size and range, **seamless passenger experience**

1. CAL NexGen experience starting from the lounge

2. To the air on short flights ...

3. And continuing on long flights

Click to add text

**AIRBUS**

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Seamless passenger experience

**AIRBUS**

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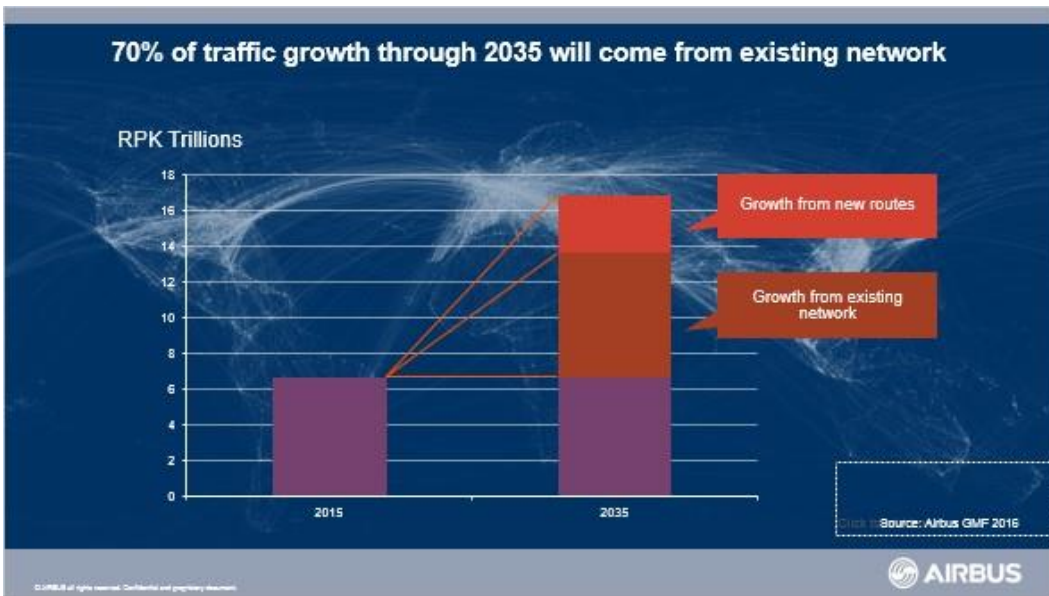


An **A380** takes off or lands every 3 minutes

<b>317</b> Orders	<b>210</b> Deliveries	<b>107</b> Backlog
----------------------	--------------------------	-----------------------

2nd April 2017





## 47 of 55 Aviation Mega-Cities are schedule-constrained



## Congested mega-cities

More than 80% are already slot constrained today

IATA world scheduling guidelines level 2 and 3 at primary city airport 2016 status

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## A380 the best aircraft to capture growing traffic

- Air traffic doubles every 15 years
- 90% of long-haul passengers travel through 55 cities
- The A380 is the best aircraft to
  - capture peak demand
  - relieve airport congestion
  - boost hub operations

Click to add text

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**The passengers' favourite**

Up to 19" Economy Class seats

The quietest cabin in the sky

60% of passengers are willing to make an extra effort to fly the A380

**A380**  
Voted best aircraft type by Skytrax 2015-2016

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**Summary**

The Airbus solution for China Airlines:

- A320neo – widebody comfort on single-aisle
- A321neo – 80% plus market share, unbeatable success
- A330/A350 – leading widebody family with best comfort
- A380 – to capture traffic growth

[Click to add text](#)

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 AIRBUS



## 二、法國 Aerospace Valley 協會



The graphic on the left shows a yellow rocket, a white car, and a white airplane against a blue sky background. The 'aerospace valley' logo is in the bottom left corner.

### AEROSPACE VALLEY

Bringing together stakeholders from industrial sectors

aeronautics   space   embedded systems

- Large firms & OEMs, SME, R&D labs and universities, training centers, etc.
- An innovative and competitive ecosystem
- A community of technological excellence

## Overall context - Launch of French “poles” in 2005



Today: 70 pôles, 9700+ members of which 80% SMEs  
6.5 B€ spent in R&D of which 4.0 B€ private funds



## “Cluster” versus “pôle de compétitivité”

Michael Porter defines clusters as:  
“geographically proximate groups of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities” [Harvard, 1998].

Our interpretation:

- while a market oriented “cluster” is primarily focused on SMEs and the entire supply chain
- the regional “pôle de compétitivité à la française” are first of all technology oriented, aiming at stimulating innovation and cooperation between industry, research and training (TRL 3-6).

MICHAEL E. PORTER

ON COMPETITION  
Updated and Expanded Edition



Aerospace Cluster Embedded Systems  
aerospace valley

# The Aerospace Valley Association

Les établissements liés au secteur aéronautique et spatial selon la catégorie dans le grand Sud-Ouest

MEMBER OF **EACP**

- Bi-regional cluster in the fields of aeronautics, space and embedded systems
- Date of creation: July 2005
- Legal status: non-profit association formed by companies, research centres, training centres and local and regional authorities
- March 2017: 860 members including 500 SMEs
- 7 electoral colleges
- Permanent staff: 30 people (+ “volunteers”)

**GOLD** Cluster Management Excellence

## Roadmap based on 6 main objectives for phase 3 (2013-2018)

### 1<sup>st</sup> objective

To foster innovation, collaborative projects, networking

### 2<sup>nd</sup> objective

To support SMEs, accompany the development of their competences, growth and both national and international competitiveness

### 3<sup>rd</sup> objective

To represent a reliable partner of public stakeholders for the development of our territories, economy and employment

### 4<sup>th</sup> objective

To ensure cooperation between the different branches of AV with the other French aerospace innovation clusters, national professional committees, unions, groups, ...

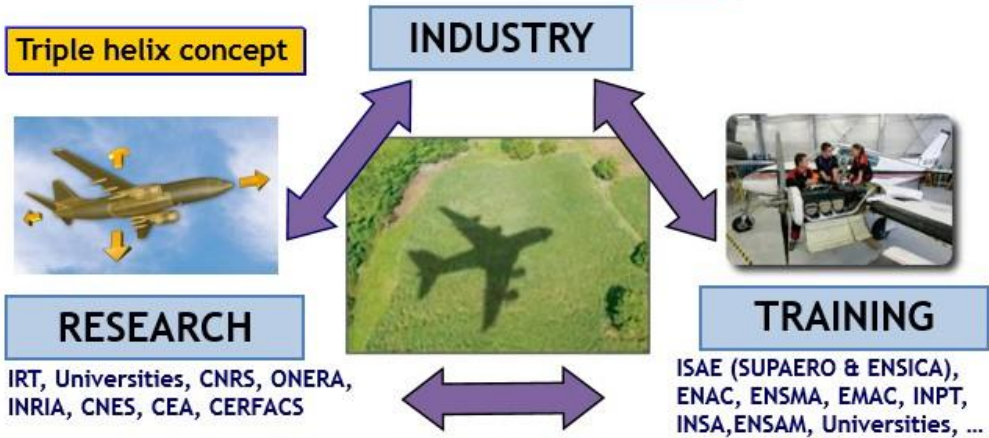
### 5<sup>th</sup> objective

To diffuse the technologies of the aeronautics, space and embedded systems sectors towards other branches, in particular via les inter-clustering activities

### 6<sup>th</sup> objective

To conduct projects and initiatives in a sustainable development framework

Airbus, ATR, Latécoère, Dassault-Aviation, Stelia Aerospace, ...  
 Thales Alenia Space, Airbus Defense & Space, SAFRAN Group, ...  
 Alstom, Continental, Thales Avionics, ...



**Aeronautics, space and embedded systems:**  
 = 123 800 direct jobs in the (former) Midi-Pyrénées and Aquitaine Regions (Dec 2015, source: INSEE poll institute)  
 = 1/3 of overall French work force in these sectors



## Product portfolio

- Civil and regional aviation
- Business aviation
- Military aviation
- Turbo-engines
- Cockpits
- Land gear equipments, aero-structures, etc.
- Satellites
- Launchers, propulsion and atmospheric re-entry
- Space services
- Automotive and railway electronics



**1240 industrial establishments**  
 = 10 billion € of annual turnover  
 = 80% of industrial work force member of Aerospace Valley



## A European potential in equipment & suppliers

- Actia
- Continental
- Creuzet Aéronautique
- Exameca
- Goodrich (UTC Aerospace)
- Labinal (Safran group)
- Nexeya Group
- Latécoère
- Liebherr Aerospace
- Messier-Bugatti-Dowty
- Potez Aéronautique
- Ratier Figeac (UTC group)
- Rockwell Collins
- Saft



83.000 employees and over 1000 establishments all in all specialised in subcontracting

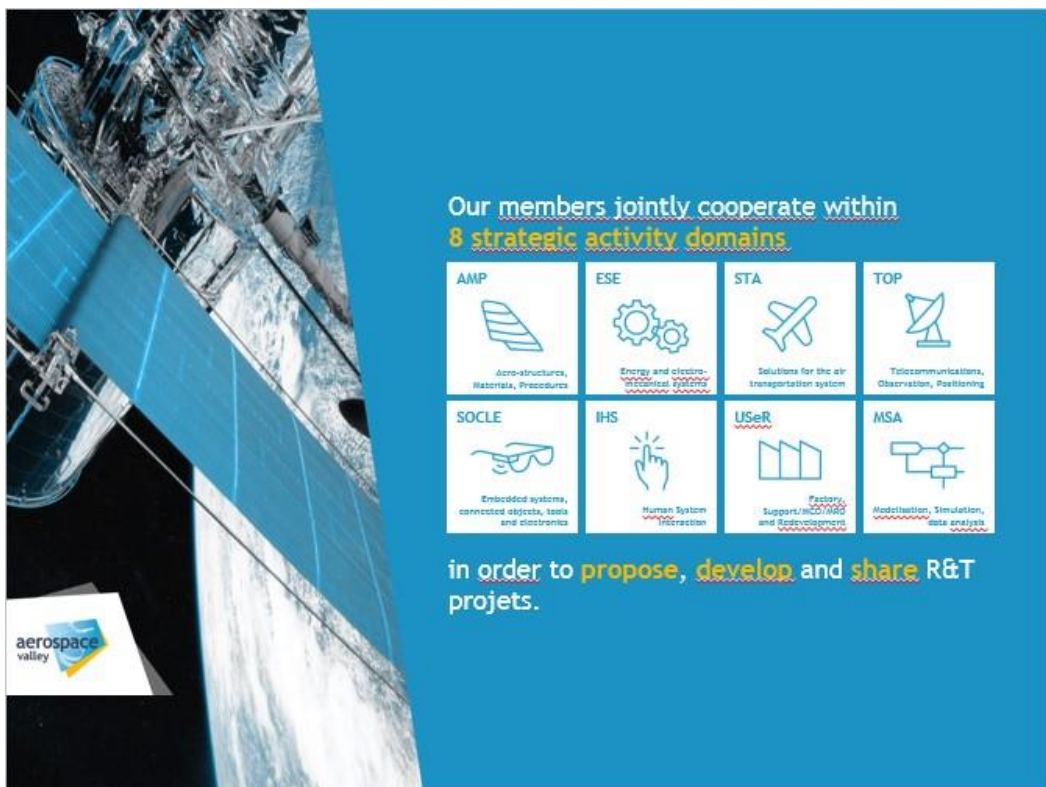
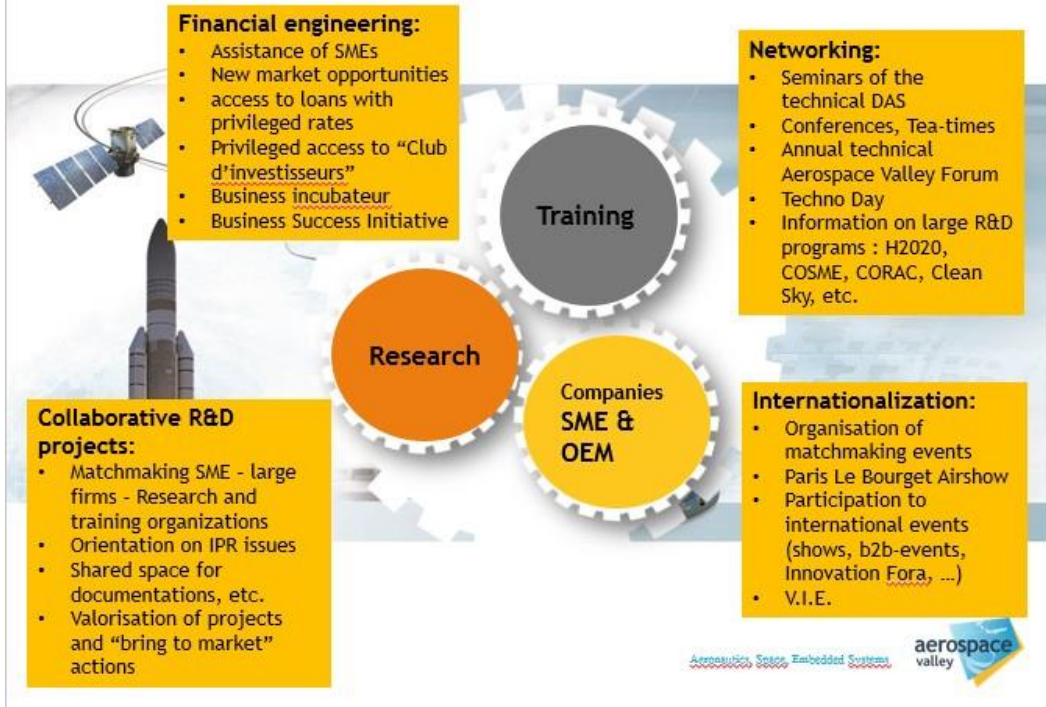


## A European reference for research & training

- 9000+ researchers in public and private labs
- Over 80 specialised, public research centres
- 45% of the R&D potential in the aeronautics, space and embedded systems sectors
- High-level research centres:
  - CEA, CNES, CNRM, INRIA, ONERA, CERFACS, IRT
  - CNRS laboratories and universities
- 3 major “grandes écoles” in aerospace :
  - ISAE (merger of Supaero & ENSICA) Toulouse
  - ENAC Toulouse
  - ENSMA Poitiers
- Total of 18 engineering schools
- Business schools : Kedge Bordeaux, Toulouse BS
- Training centers & schools : Aerocampus, etc.



## A wide range of services offered to SMEs members



## R&D Funding mechanisms

Accumulated numbers (as of March 2017):

- 947 R&D projects approved by internal Aerospace Valley committee
- 502 projects finally financed with accumulated 1850+ participants
- 3<sup>rd</sup> phase : gearing towards industrialisation of R&D projects



- Total value of all financed projects: 1.23 B€
- Total amount of private funding: 722 M€
- Total amount of public funding: 508 M€ (40% via FUI)  
(of which 32% for SMEs)



## International Cooperation

- Formal agreements signed with AéroMontréal, Skywin Wallonia, HEGAN (ES), Hamburg Aviation, Farnborough Aerospace Consortium, CECOMPI (BR), OSSA (TK), Subsea Valley (NO), GIMAS (MA)
- Further contacts and informal exchanges with e.g. Queretaro (MX), C-ASTEC (JP), PNAА (USA), etc.
- Forum of exchanges between European aerospace clusters through EACP initiative
- Participation to EC-projects (COSME, H2020)
- Overall international coordination with GIFAS



An efficient network of **8000** contacts

**850+** Members  
of which 500+ SME

**100** Events per year

**495** Funded R&T projets (1,2 Md€)

aerospace valley

**aerospace valley**

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F-31432 Toulouse CEDEX 4  
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[schoenfeld@aerospace-valley.com](mailto:schoenfeld@aerospace-valley.com)


MEMBER OF **EACP**




WITH THE SUPPORT OF

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### 三、德商 Diehl 公司

## Diehl Aerosystems Supplier Conference








Arend Wedekind | SVP Sales & Marketing  
Timo Strobel | SVP Procurement

22.05.2017


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One of Five Corporate Divisions within the Diehl Group




## DIEHL


family-owned company since 1902



**TURNOVER**  
€ 3,400 m



**EMPLOYEES**  
16,175



**HEAD OFFICE**  
Nuremberg, Germany

**DIEHL**  
Metall

---

**TURNOVER:**  
≈ € 830 m

**EMPLOYEES:**  
≈ 3,425

**DIEHL**  
Controls

---

**TURNOVER:**  
≈ € 500 m

**EMPLOYEES:**  
≈ 3,350

**DIEHL**  
Defence

---

**TURNOVER:**  
≈ € 460 m

**EMPLOYEES:**  
≈ 2,325

**DIEHL**  
Aerosystems

---

**TURNOVER:**  
≈ € 1,370 m

**EMPLOYEES:**  
≈ 5,400

**DIEHL**  
Metering

---

**TURNOVER:**  
≈ € 320 m

**EMPLOYEES:**  
≈ 1,725

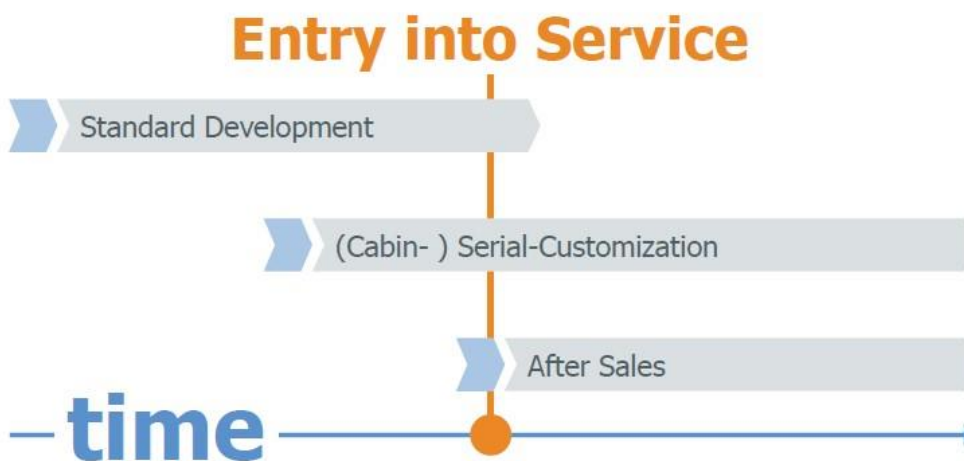
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\*Numbers are based on budget 2017

2

Corporate Division



Standard development of new systems moved from classical to customized and more integrated cabin solutions, also including Retrofit Packages.



Aircraft Systems			Cabin Interiors	
 Cockpit Systems	 Flight & Engine Control Systems	 Avionic Platforms	 Air Distribution Systems	 Crew Rest Compartments
 Utility Systems	 Safety & Supply Systems	 Interior Lighting Systems	 Comfort Modules	 Floor-to-Floor/Lining
 Water Management	 Air Management	 Fire Protection	 Service Modules	 VIP Furniture

From cockpit to cabin. Fully integrated or individual packages.

Cockpit Systems



- Multi-Function Displays
- Display Management Computers
- Symbol Generators
- Flight Control Units
- Operator Control Panels
- Instruments & Sensors
- Enhanced Lighting Controller

Flight and Engine Control Systems



- Flight Control Computer
- Flight Control Electronics
- Slat Flap Control Computers
- Control Sticks
- Flaps Lever
- Sensors
- Engine Control & Monitoring Unit
- Electronic Control Boxes for APUs
- Motor Management

Avionic Platforms



- Integrated Modular Avionics
- Core Processing Input/Output Module (CPIOM)
- Common Remote Data Concentrator (cRDC)
- Hosting multiple applications for different criticality levels
- Standardized hardware module, I/O capabilities & mechanical packaging
- AFDX End Systems

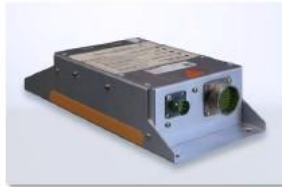


Utility Systems



- Doors & Slides Management System
- Cabin Management Systems
- Fuel Computer
- Landing Gear Computer
- Sensors

Safety and Supply Systems



- Emergency Lighting
- Battery Packs
- Floor Path Marking
- Static Inverters
- Emergency Power Supplies
- Distribution Units
- Power Systems

Interior Lighting Systems



- Premium Mood Lighting
- Cabin Projection Systems
- Eco-Line LED White and Full Color Cabin Lighting
- Dome and Application Lighting
- Spotlights, Reading and Work Lights
- Monument Lighting
- Cargo Compartment Lighting
- NVIS and IR Lighting

Water Management



- Potable Water Tank Module
- Potable Water Pump
- Water Treatment Module
- Waste Tank Module
- Vacuum Toilet Assembly
- Vacuum Generators
- Galley Waste Disposal Unit
- Control Panels
- Auxiliary Heating

Air Management



- Air Cooling Unit
- Ground Cooling Unit
- Fans

Fire Protection



- Aviation Small Detectors
- Ground Transportation Small Detectors
- Fire Protection Control System

Air Distribution Systems



- Air Ducting
- Air Outlets

Crew Rest Compartments



- Cabin Crew Rest Compartments
- Flight Crew Rest Compartments
- Integrated Systems

Comfort Modules



- Lavatories
- Washrooms and Refreshment Rooms
- Shower Cabins
- Handicapped-accessible Modules

Floor-to-Floor/Lining



- Dado Panels
- Sidewalls
- Hatracks
- Ceilings
- Entrance Areas
- Light Covers

Service Modules



- Galleys for Passenger Aircraft
- VIP and Corporate Jet Galleys
- Bars and Ancillary Monuments
- Stowages and Doghouses
- Partitions

VIP Furniture



- VIP and Corporate Jet Linings
- Special Furniture and Real Wood Furniture
- Cabin Mock-Ups

Eurofighter



Tiger



A400M



- Cockpit and Display Systems
- Flight and Engine Control Systems
- Control Sticks
- Lighting Systems
- Avionics Platform
- Utility Systems
- Mission Systems



- A300/310 Family
- A320 Family
- A330/340 Family
- A380 Family
- A350 XWB Family



- 737 Family
- 747 Family
- 767 Family
- 777 Family
- 787 Family



- E170/190
- E175-E2
- E190-E2/E195-E2
- E135/140
- Legacy 600
- Phenom 100/300



- Bombardier Q400
- Global 7000/8000



- A400M
- Eurofighter
- KC-46A Tanker
- NH90
- Tiger
- Tornado



EC135



G280

**DIEHL AEROSYSTEMS TARGET COUNTRIES**

Poland
Czech Republic
Croatia
Hungary
Romania
<b>Turkey*</b>
Morocco
<b>South Africa*</b>
USA
<b>China*</b>
India
Indonesia
Malaysia
Singapore
South Korea
Taiwan
Vietnam

- **Cost optimization** through BCC-production
- **Genuine \$-Contracts**
- Strong focus on **offset** countries
- LCC under **TCO-approach** requires smart logistic concepts
- Specific **country and regional risk** to be analyzed before transfer, risk mitigation plan to be deployed
- Transfer of work packages to be projected via **ToW-process** (duties & obligations)
- support
  - regulations: Diehl offset office (via procurement focal)
  - ToW-Process obligations: Diehl SQD



**Strong focus on Best Cost and Strategic Country sourcing under TCO approach**

\*Offset commitments

**Chemicals**

- Glue

**Composite Materials**

- Fabric prepreg
- Honeycomb core
- Sandwich panel

**Electronics**

- Passive Electronic Components
- Semiconductors
- Integrated Circuits (IC)
- Optoelectronics
- Displays & Projectors
- Printed Circuit Boards (PCB)
- Electromechanical Components
- Electronic Manufacturing Services (EMS)

**Mechanics**

- Mechanical Components & Assemblies
- Metal

**Plastics**

- Injection Moulding
- Extrusion
- Seals
- Composite Ducts



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