Airbus – Future Industry

Dr. Rainhill Freitas – Technology Fast Track Industry

10.12.2019
Global Company

133,700 employees from 135 nationalities

Located across 35 countries on more than 180 sites

International Sales
31% Europe
69% Non-Europe

China
1,150

USA
2,707 (2%)

Other countries
10,178 (8%)

UK
11,304 (9%)

Spain
13,177 (10%)

Germany
44,214 (34%)

France
47,865 (37%)

Employees

133,700 employees from 135 nationalities

Located across 35 countries on more than 180 sites

International Sales
31% Europe
69% Non-Europe
Potential for over 37,000 aircraft deliveries in the next 20 years.

Services market valued at approximately $5Bn over the next 20 years.

> 4 billion passengers per year, representing > 8 trillion Revenue Passenger Kilometers.

Global Market Forecast – Facts & Figures
Initiatives towards “Green” economic flying

- Drop-in fuels
- Bio / synthetic fuels
- Carbon capture
- Alternative fuels
- New aircraft architecture
- Advanced Air Traffic Control
- E-FanX - Hybrid Electric demonstrator
“GREEN” ECONOMIC FLYING

END-TO-END PRODUCT LIFECYCLE

SAFETY FIRST

AUTONOMY & OPERATIONS

SERVICES
Airbus Commercial
Industrial DNA and Fields of Activity

Vertical Integration
Real Time Production Data

Enterprise Resource Planning
Manufacturing Execution System
Shop Floor

Horizontal Integration
Virtual Twin
Engineering
In-Service

➢ Dynamically controlled line balancing system
➢ Full supply chain data transparency
➢ Enable real human robot collaboration
➢ ATA interdisciplinary design
➢ Modelling and simulation of the A/C
➢ End to end data backbone and real time data flow
➢ Human Resources
➢ Design for Assembly
➢ Digitalization
➢ Production Systems
➢ Supply Chain
➢ Operations
➢ Virtual Factory & Factory Digital Twin

➢ HR aspects of Industry 4.0 for aircraft manufacture

8 key clusters supporting current aircraft and future products
### Additional needs for the future industrial system

- **Technologies to accelerate towards industry 4.0**
  - Asset connectivity, analog digital integration
  - Digitalization and Contextualization of undocumented processes
  - Tracking and identification of assets

- **Supporting technologies for an ageing workforce (physical and cognitive)**
  - Ensure that we can capitalize on the experience and skills of our workforce longer
  - Support the knowledge transfer
  - Prepare the future generation of workers with the skills and tools to master more autonomous and complex systems

- **Disruptive production concepts for large scale manufacturing**
  - Drastically reducing lead time
  - Allowing faster ramp up and cut over times (for single aisle replacement)
  - New ways of integrating and interacting with the supply chain

- **Technologies / Methodologies to bridge the life cycle divide between products and tools:**
  - How to mass integrate digital tools with a update or replacement cycle of few years into an product with a 50 year life cycle
Expectations towards Public Funding Authority

- Strong link between European, national and regional funding initiatives, aligned way of working.
- In order to be effective and sustainable we will need flexibility to choose our partners and the way we collaborate.
- Airbus has embarked on agile ways of working and believes that it is the best way to tackle the rapid rise of new technologies. Therefore, we highly recommend to make agile collaboration mode an element of the Made in Europe initiative.
Thank you
Meet the Airbus family from 100 to 600+ seats

- Comfort
- Profitability
- Efficiency
Strong, innovative and customer focused – Our portfolio.

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Civil Range

**Light Single**
- H125
- H130

**Light Twin**
- H135
- H145

**Medium**
- H155
- H160
- H175

**Heavy**
- H215
- H225
Military Range

Light
- H125M
- H135M
- H145M

Medium
- AS565

Heavy
- H215M
- H225M

Specialised
- Tiger
- NH90