



aerodays2015

Aviation in Europe – Innovating for Growth

The 7th European Aeronautics Days



Presented by
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L O N D O N



20 – 23 OCTOBER 2015

Overview of the CleanSky2 Large Passenger Aircraft Cabin & Cargo System Demonstrator Platform

Cabin & Cargo

1960



2000



2020



2025



Makes the Difference!



Leader Platform 2: Thomas Hienen
Project Manager: Thorsten Conradi



The Airbus Vision of the Future Cabin



What is Clean Sky 2 ?

Clean Sky 2 (CS2) is a **large European aeronautics research programme co-funded** by the **European Commission (EC)** and the **European aeronautics industry**. Clean Sky 2 will run for **10 years**, from **2014 to 2023** and dispose of an overall **budget of € 3,6B**.

Clean Sky 2 has **specific objectives** to contribute to the **integration, demonstration and validation of aviation technologies** which are capable of:

- Increasing fuel efficiency with a reduction of CO2 emissions by 20 to 30% compared to the “state-of-the-art” aircraft entering into service as from 2014;
- Reducing aircraft NOx and noise emissions by 20 to 30% compared to the “state-of-the-art” aircraft entering into service as from 2014.

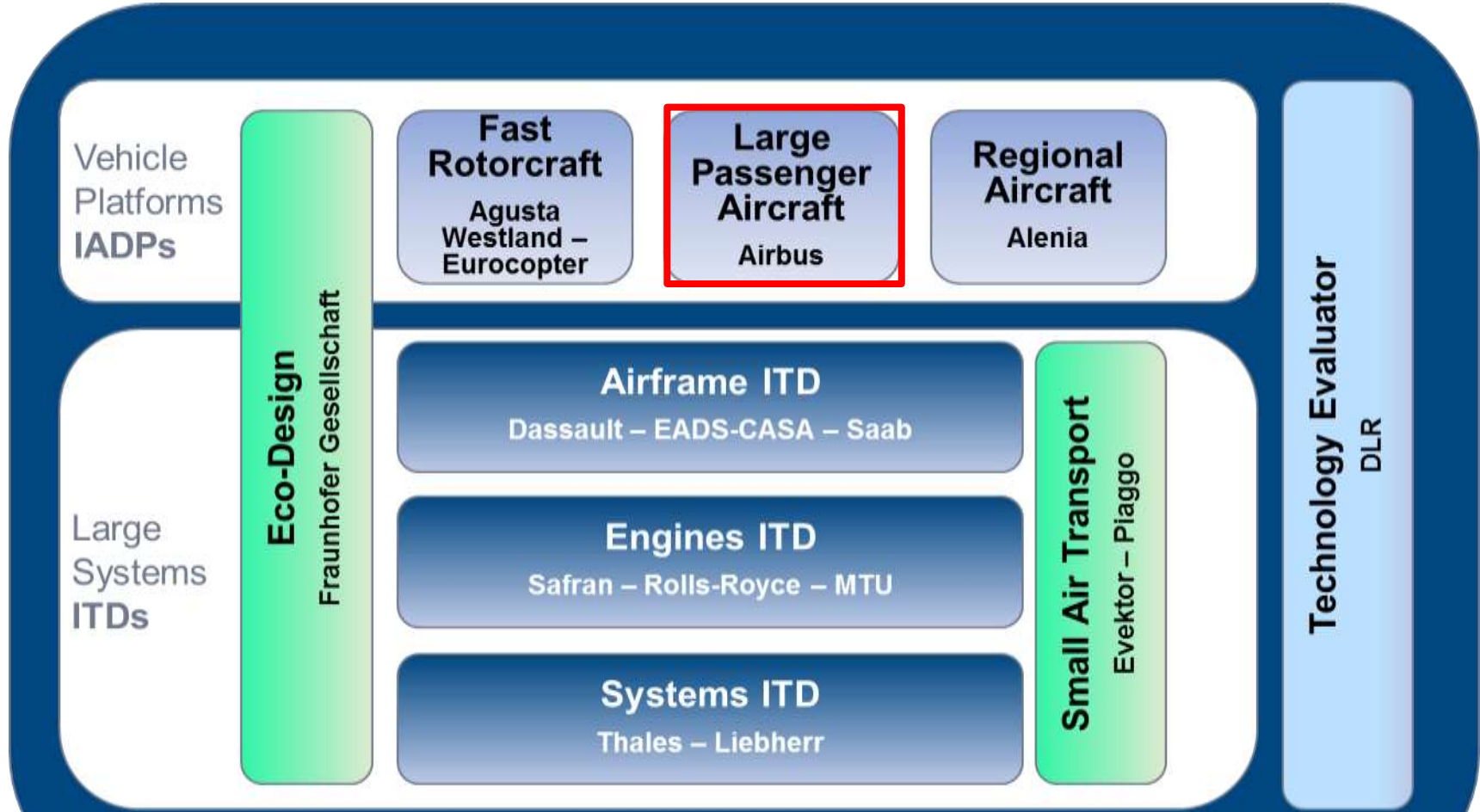
Within Clean Sky 2, Airbus will cooperate with and coordinate a wide range of partners from all over Europe.



Original members of Clean Sky 2



CS2 Airbus Shares and Roles



IADP: Innovative Aircraft Demonstrator Platforms (demonstrations at high level of (full) vehicle platforms)
 ITD: Integrated Technology Demonstrators (main relevant technology streams for all air vehicle applications)



Large Passenger Aircraft (LPA) Airbus - Setup

Large
Passenger
Aircraft
Airbus

„Platform 1”



**Advanced Engine
and Aircraft
Configurations**

„Platform 2”



**Innovative Physical
Integration
Cabin-System-
Structure**

„Platform 3”



**Next Gen. Electrical
A/C Systems,
Cockpit Systems &
Avionics**

Three platforms as the pillars of LPA



CS2 Strategy of Large Passenger Aircraft Platform 2

Objective of LPA Platform2:

Demonstrate the weight, RC, and lead time benefits of a disruptive approach towards fuselage & cabin architectures which integrate structure, system installation and cabin elements.

3 main demonstrators to achieve this goal:



Next Generation Fuselage,
Cabin and Systems Integrated
Demonstrator



Next Generation Cabin-Cargo
Functional Demonstrator



Next Generation
Lower Fuselage
Demonstrator

The demonstrator technologies will be tested until 2023



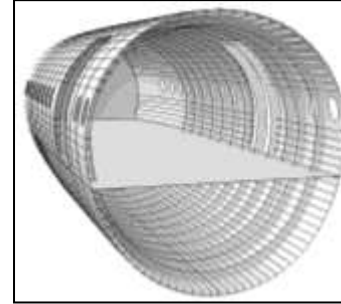
CS2 LPA Cabin & Cargo System Demonstrator

- Different customisation scenarios
- Early customer agreement on new technologies
- Acoustics
- Industrial concepts
- Robot technologies
- Tolerance concepts



CS2 LPA Cabin & Cargo System Demonstrator

- A **Generic Platform** will be implemented in the **ZAL TechCenter in 2016**, to perform the integrated Cabin & Cargo technology concept, operation and production investigations.
- The platform is suitable to investigate **integrated C&C technologies** both with and without the fuselage.
- **Various assemble combinations** of barrel segments are possible, to **cope** with the **different requirements**.
- The **generic barrel** will be **emulated by frame interfaces**, therefore the evaluation **focuses on R&T technologies** without a **cross-section specification**.



Specific cross section 13 / 15 is implemented in Hangar 10 at Airbus Finkenwerder and will be moved to ZAL end of 2015

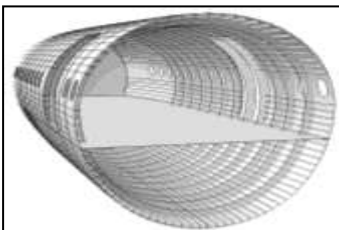
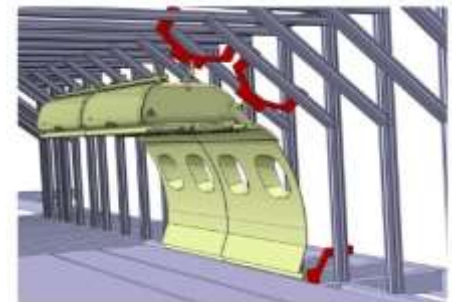
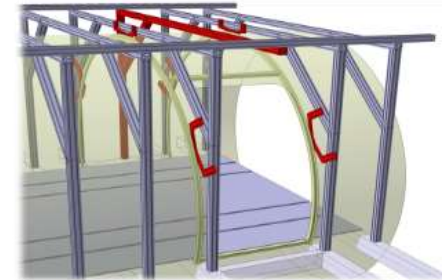


Flexible integrated validation environment



CS2 LPA Cabin & Cargo System Demonstrator

- Main focus of the large demonstrator is an **overall approach** i.e. integration of several Cabin & Cargo related technologies including system and structure interfaces.
- The platform provides an **open and flexible basis** to practically evaluate and show feasibility of even novel Cabin & Cargo technologies and approaches.



Cabin & Cargo Technology Products

Serial Program
Overall Architecture



Infotainment
& Operations



Power & Data
Backbone



C&C Interior &
Materials



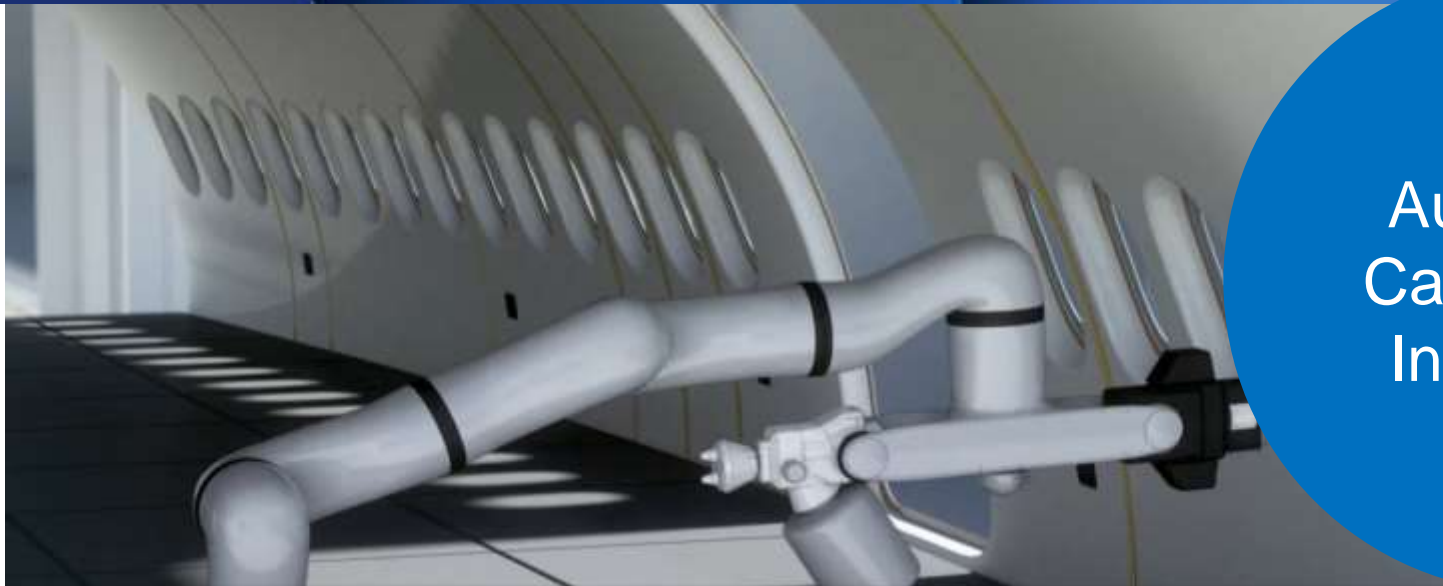
Wireless



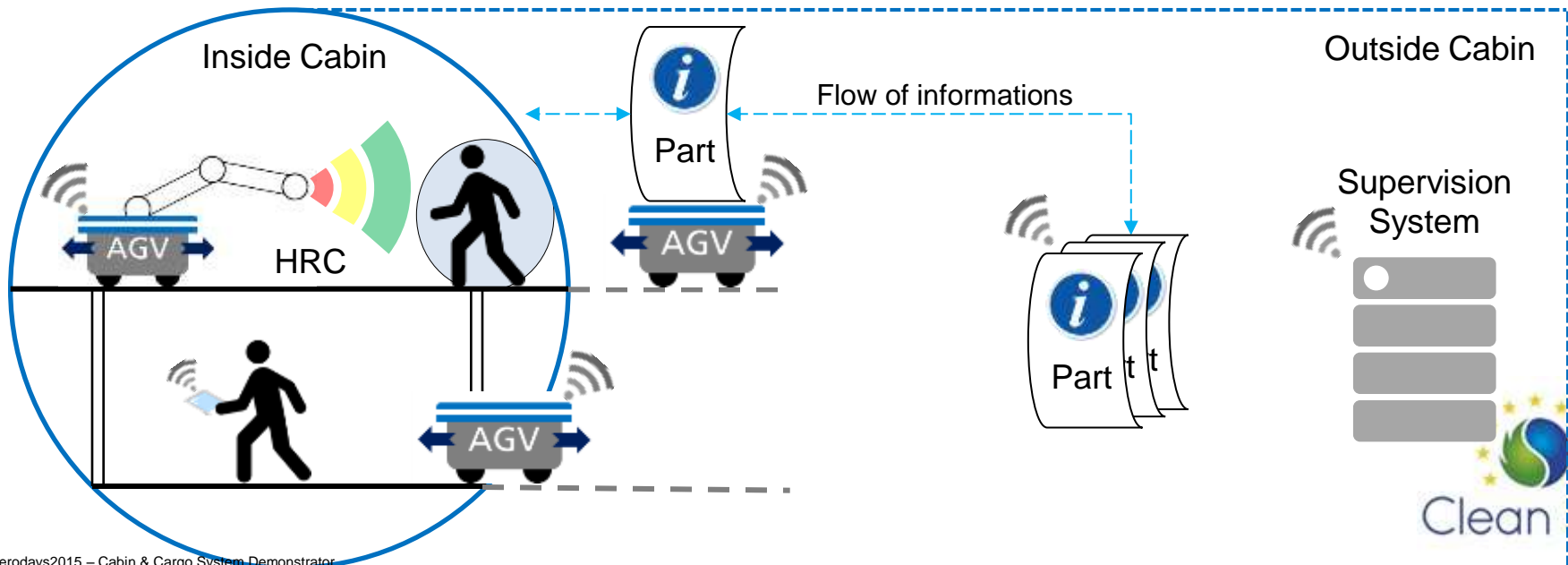
Mechanical Systems



Use case: Installation of cabin



Automated
Cabin/Cargo
Installation



Question & Answer

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**Vision without actions is a daydream
Action without vision is a nightmare**

Old Japanes Proverb

