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L O N D O N



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Avionics Systems Hosted on a distributed modular electronics Large scale dEmonstrator for multiple tYpe of aircraft

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ASHLEY at a glance



ASHLEY-WP73-THA-DISM-PRES-0462 Issue 1

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Name of the project:

Avionics Systems Hosted on a distributed modular electronics Large scale dEmonstrator for multiple tYpe of aircraft

Acronym: ASHLEY

Starting Date: October 1st, 2013

Ending Date: March 31st, 2017

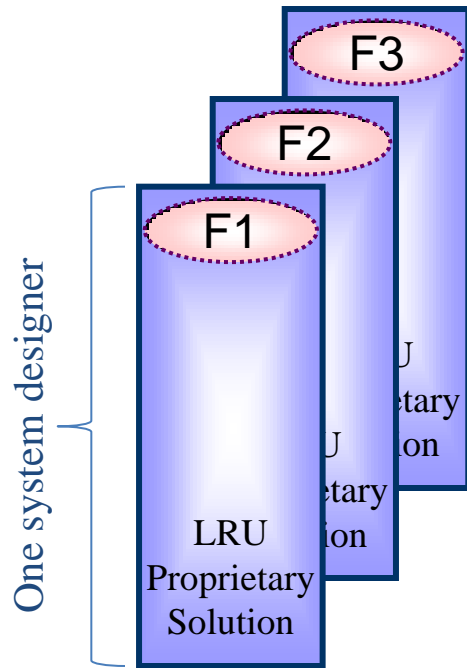
Duration: 42 months

Total Cost: 39,8 M€



From the Federated Architecture Concept to the IMA1G concept

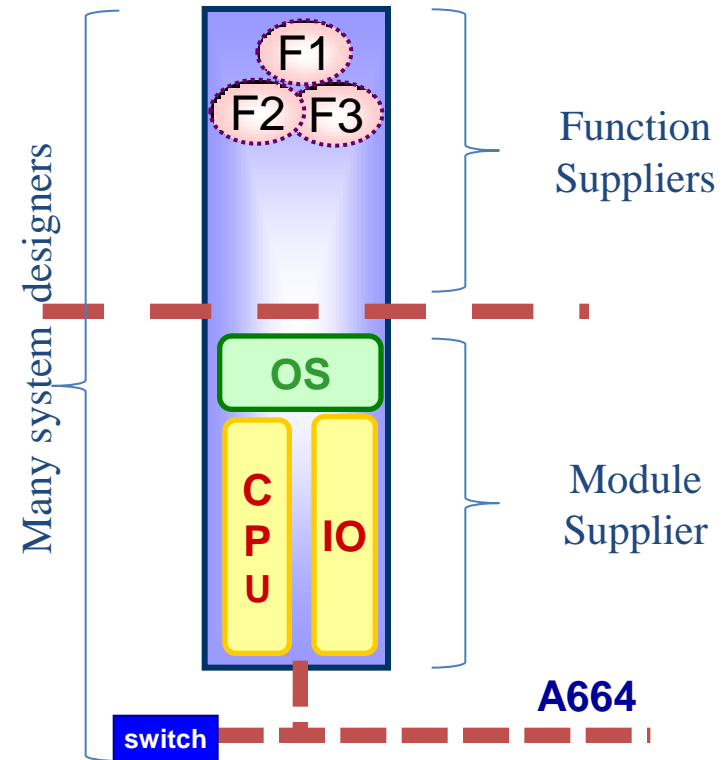
Federated Architecture Concept



From the Federated Architecture
 to the IMA1G concept



Integrated Modular Concept (IMA1G)

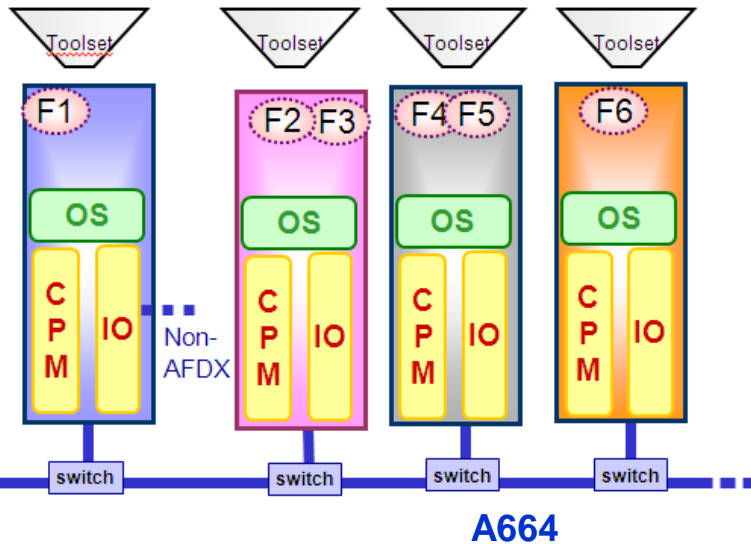


Relies on **Line Replaceable Unit (LRU) Solution**

- ➔ The system designer is the module and function supplier
- ➔ One single system per LRU

Relies on **Line Replaceable Module (LRM) Solution**

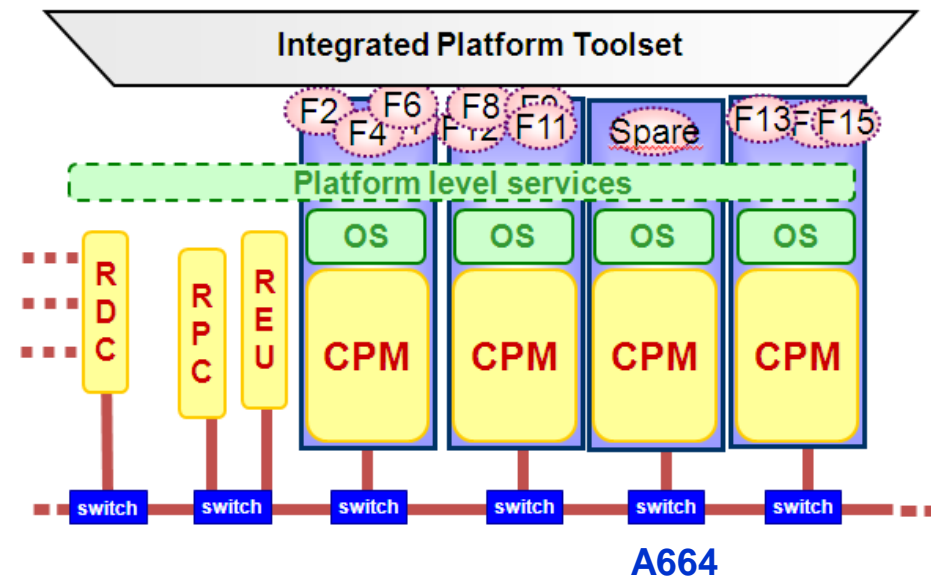
- ➔ Clear separation between LRM suppliers and system designers
- ➔ LRM resources are shared between LRM hosted Functions



Distributed Modular Avionics

From IMA 1G...

... to IMA 2G

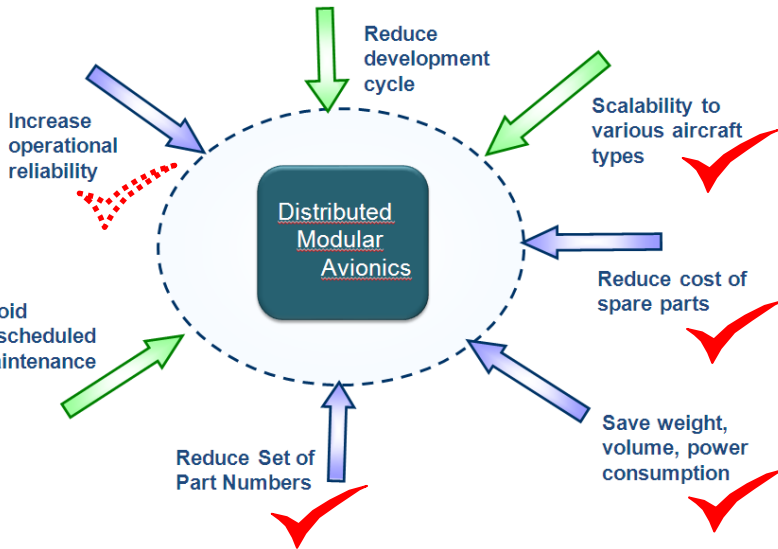


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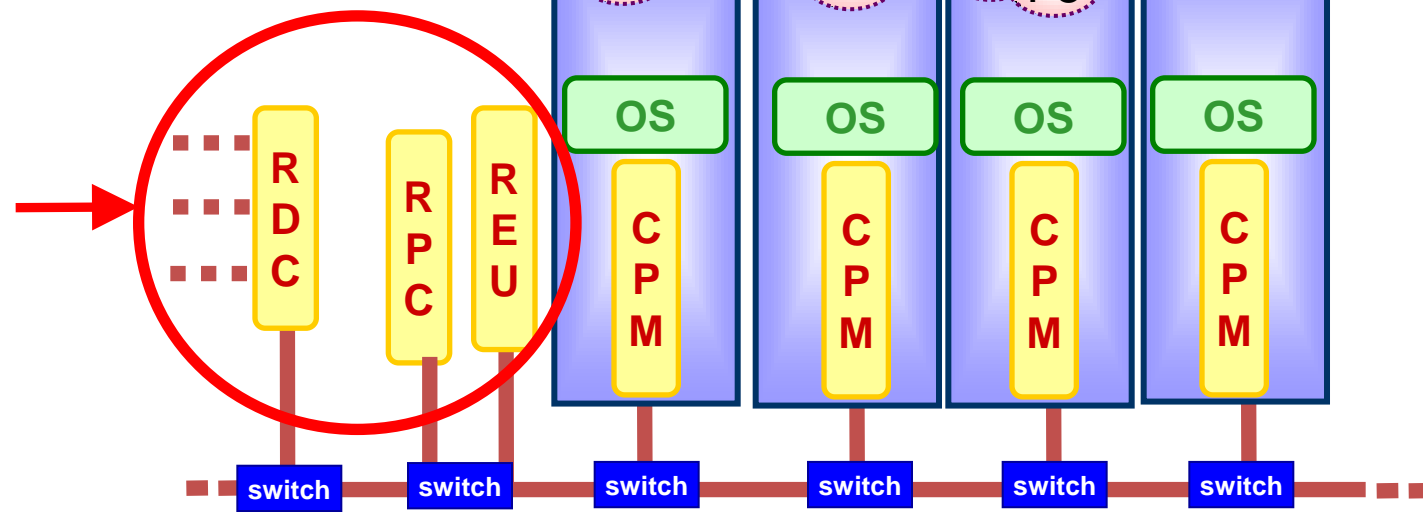
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Innovation beyond IMA 1G



Separate I/O from computing modules



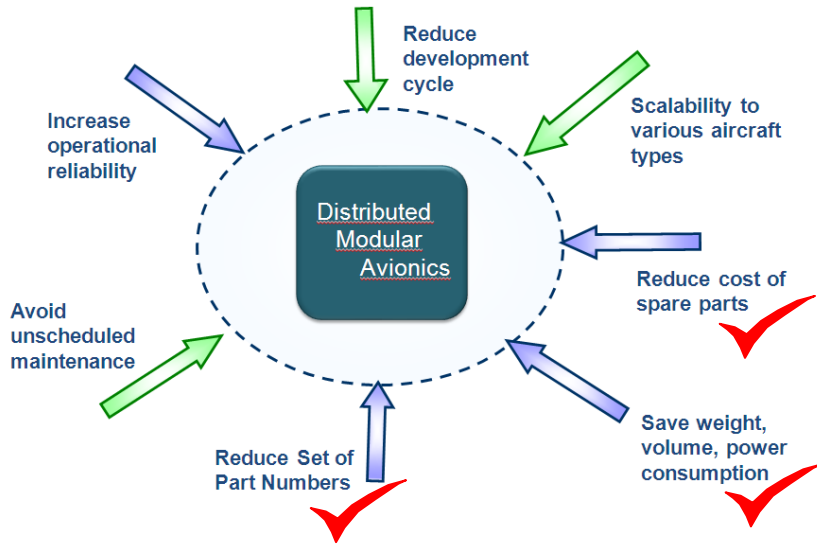
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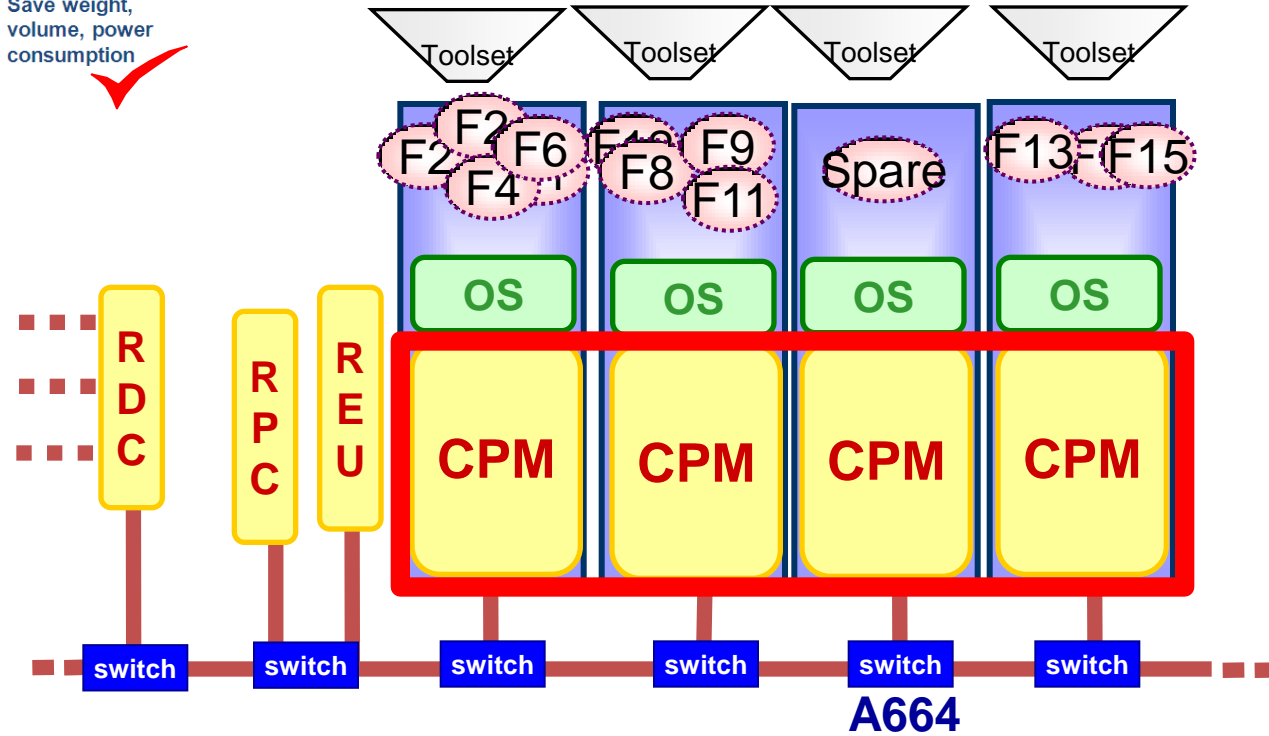
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Innovation beyond IMA 1G



Increased computing module performance

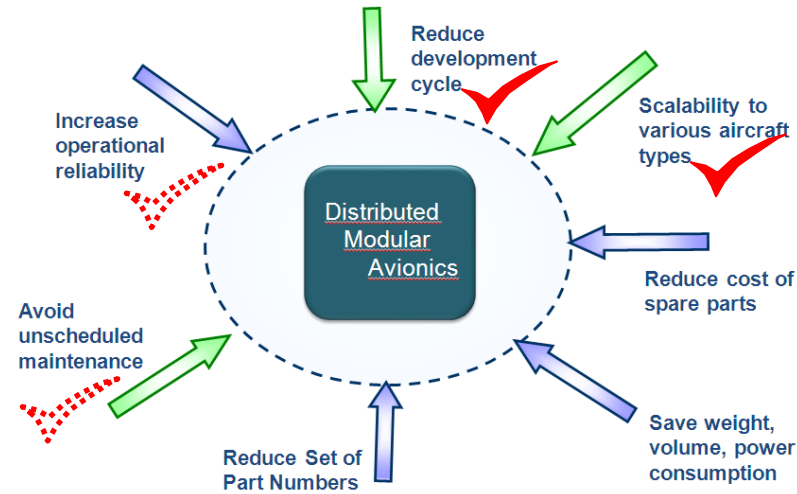


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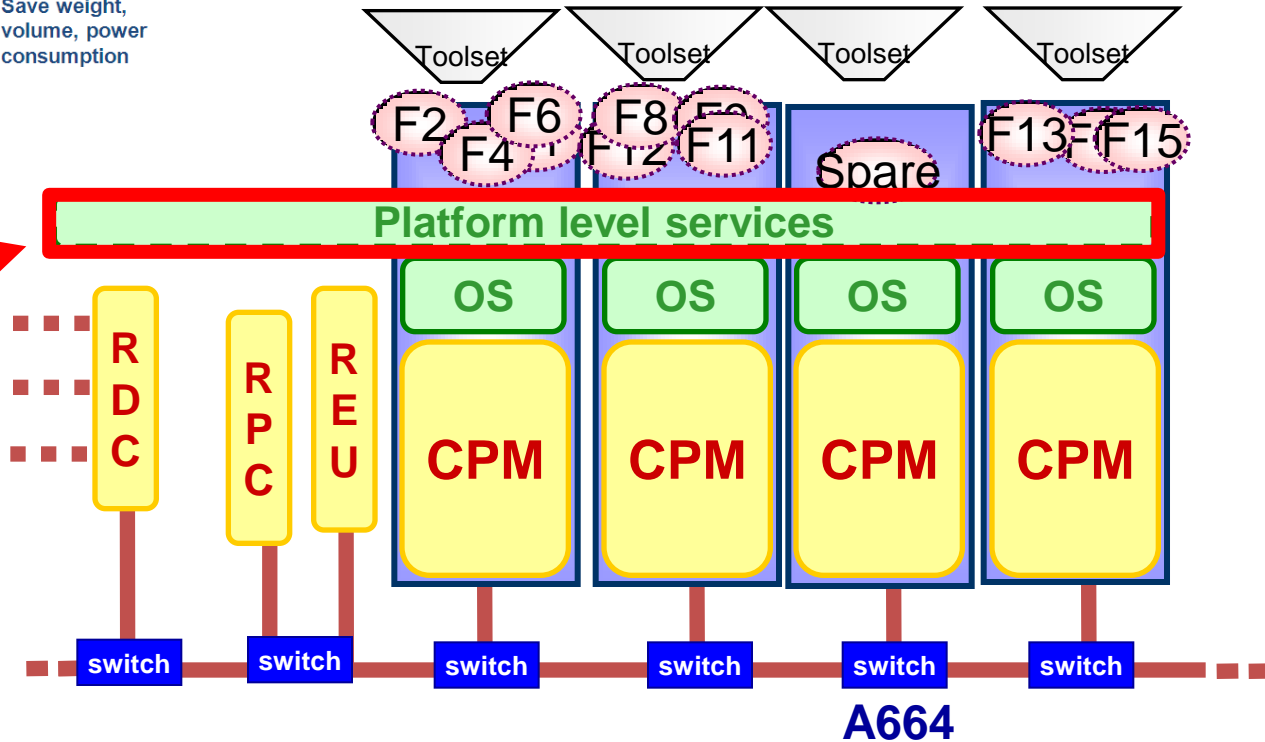
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Innovation beyond IMA 1G



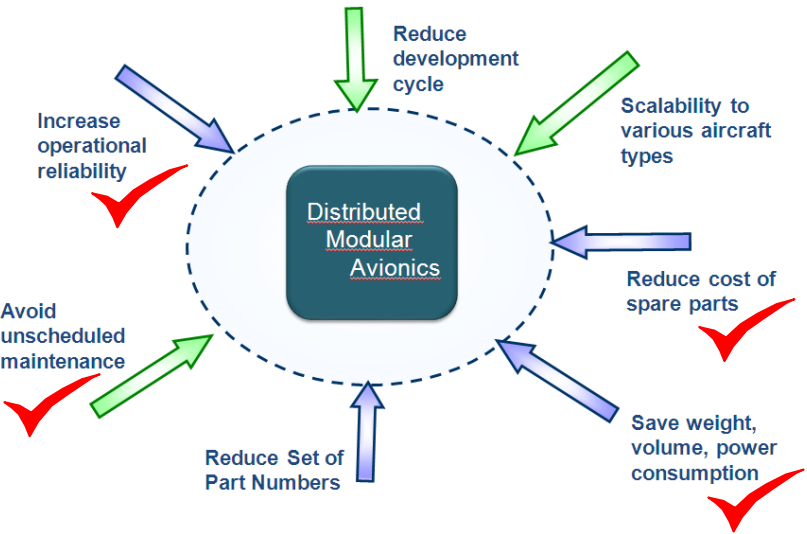
Middleware providing platform level services (e.g. DB service)



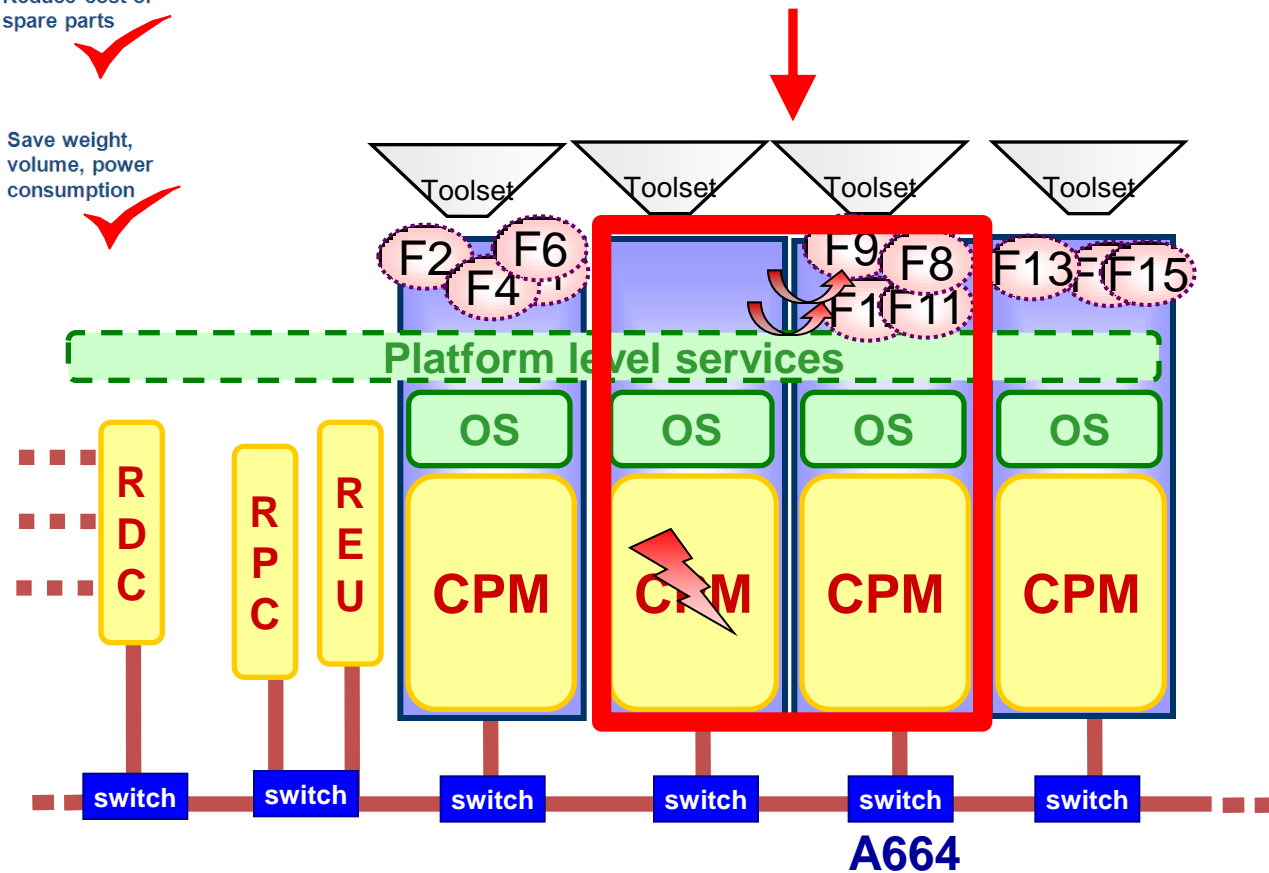
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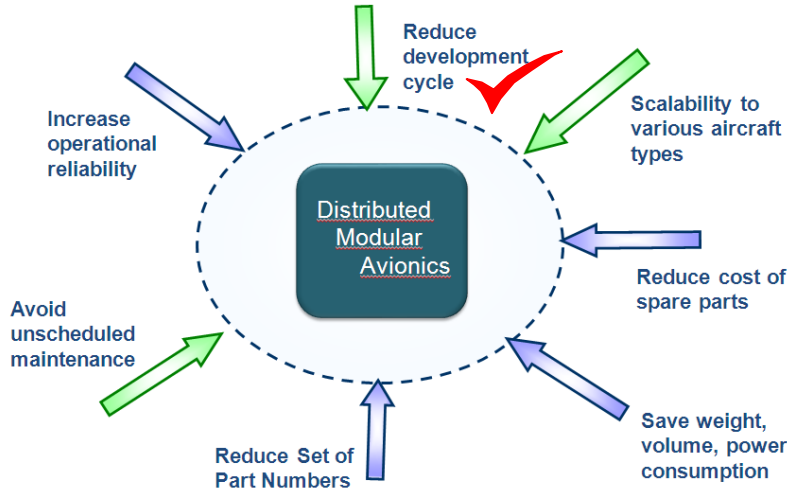
Reconfiguration mechanisms



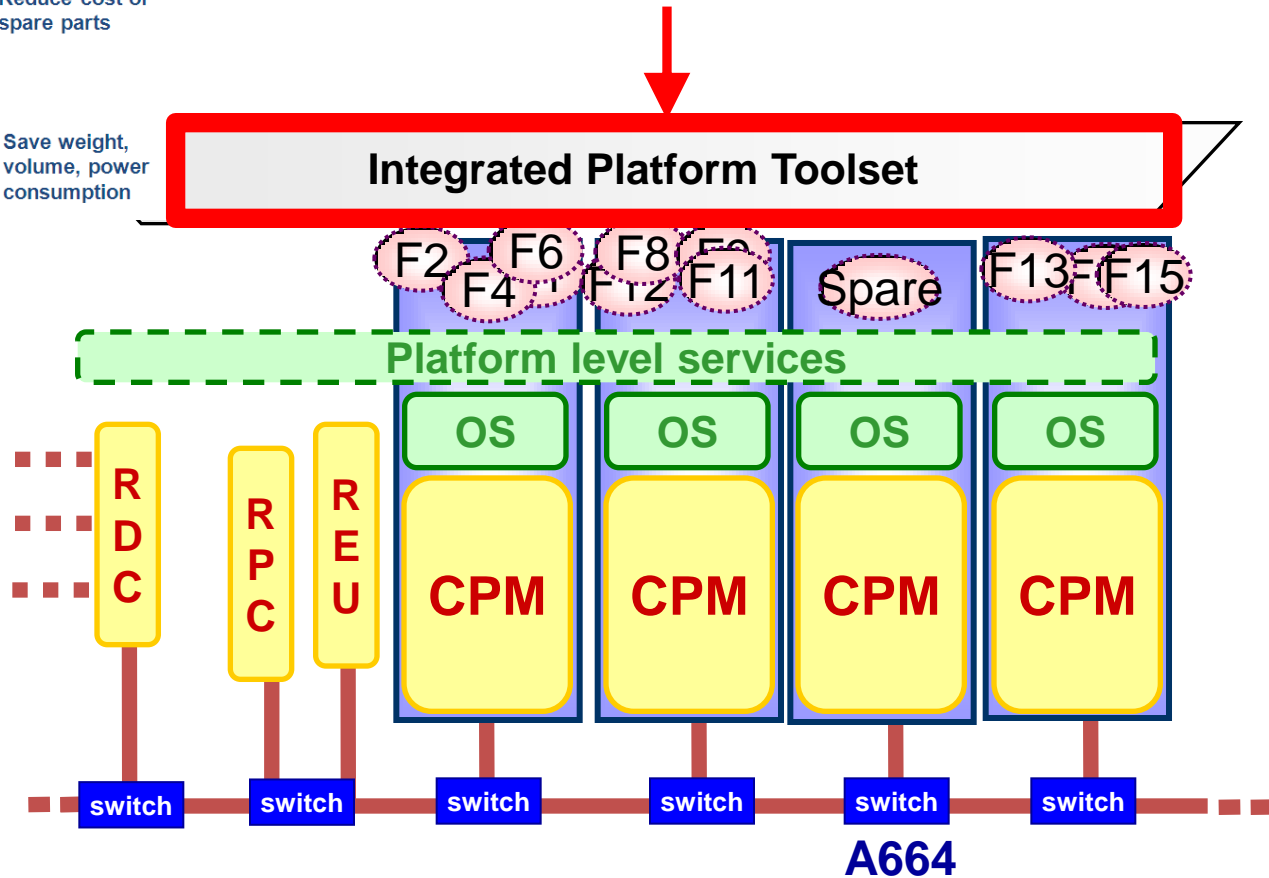
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Integrated processes and toolset



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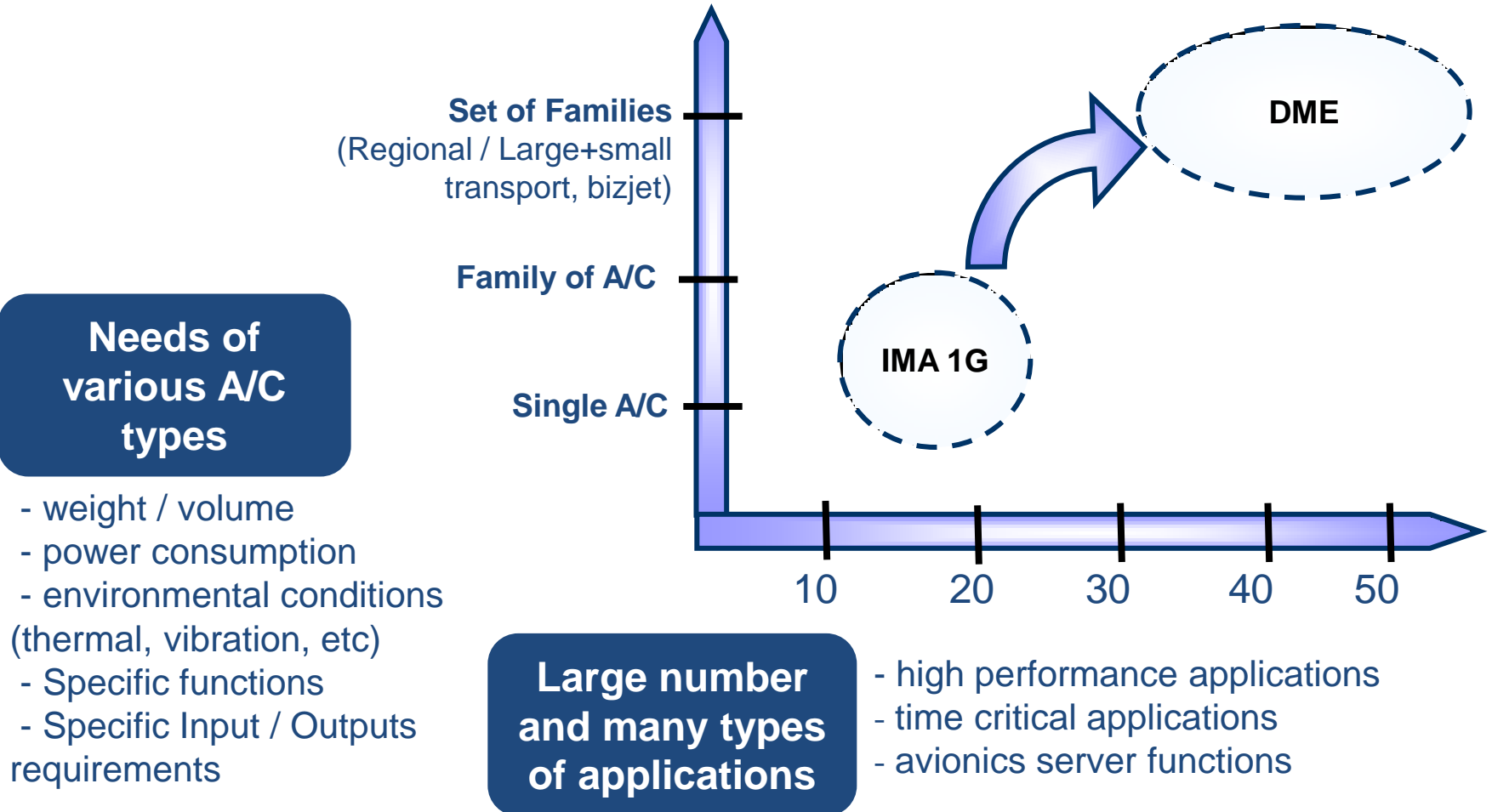
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SCALABILITY

=

Capability of the architecture to be adapted to...

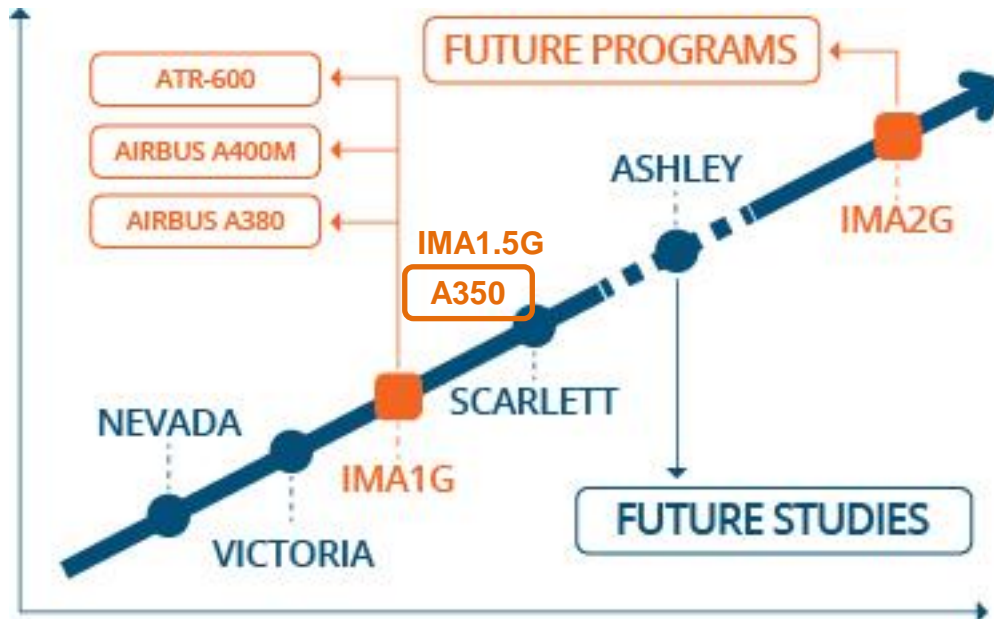


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Application of
IMA in aircraft



ASHLEY makes the step
from single building blocks
towards the integrative
IMA platform solution

Key challenges are:

- Industrialization
- Modularization
- Integration
- Services
- Certification

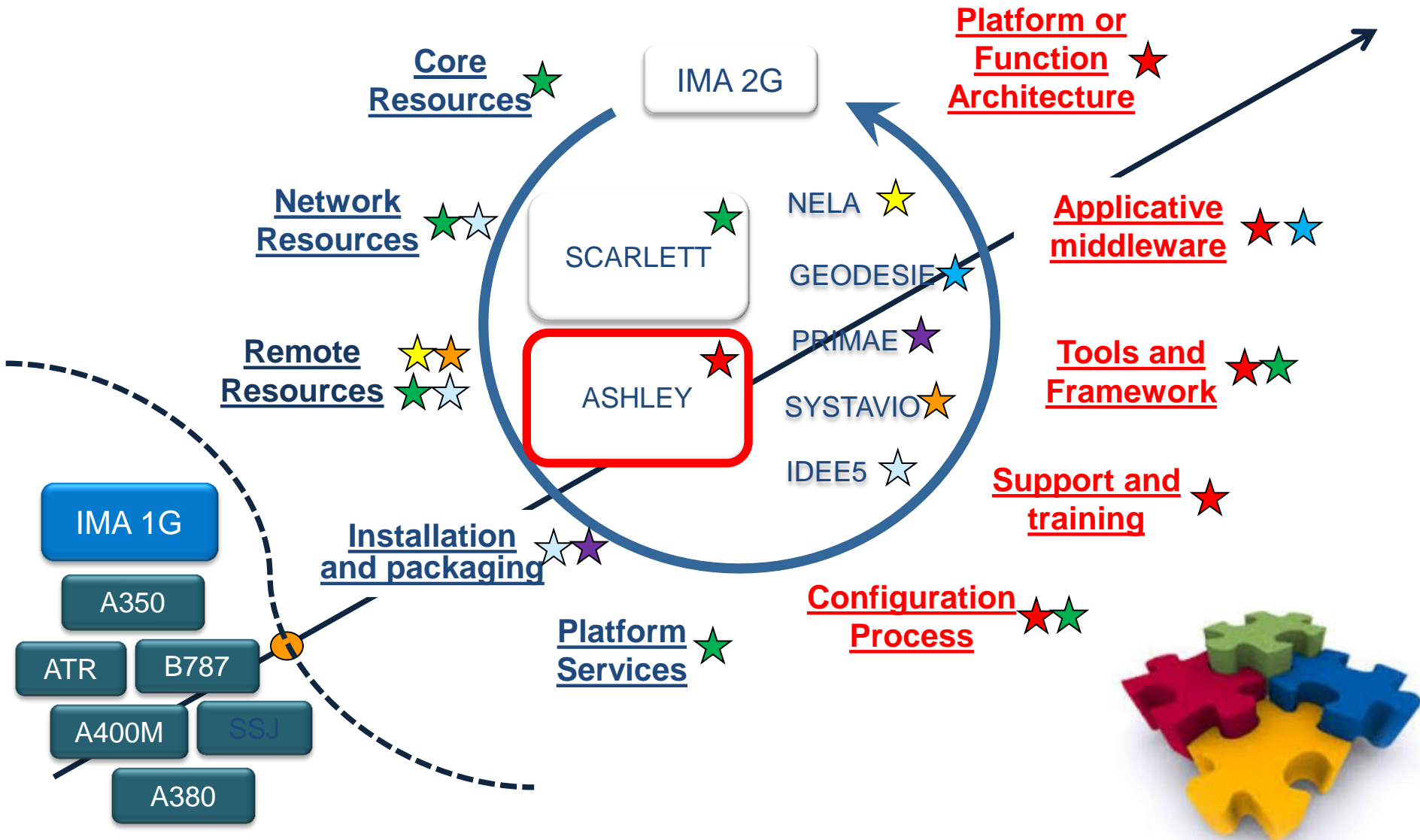
**ASHLEY is on the path of future
IMA2G-based aircraft programs**

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IMA 2G studies: Overview



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ASHLEY has the main objective of consolidating and extending the efforts of several independent projects by improving the current IMA2G Distributed Platform Solution.



* *DME Distributed Modular Electronics*

ASHLEY Objectives

To extend the DME* concept and set of components over the **Open World and Cabin aircraft domains** for large aircraft, regional aircraft and business jets.

To evaluate the benefits of **photonics and smart interfaces to sensors and actuators** to increase performances of some avionics systems.

To propose **DME* remote resources solutions** for **Secondary Power Distribution and Time Critical aircraft systems**.

To **decrease avionics (multi-domains) function overall design time** thanks to a more system designer oriented tool chain.

To **promote DME* concepts and innovations** to any IMA key stakeholders (industrial, academics, certification and standardization bodies) that will influence existing academia and market and create new ones.

To validate the ASHLEY advanced state of the art by implementing a **large scale demonstrator** consisting of a set of **representative aircraft systems** onto the DME* extended set of components.

To provide **Database Services** covering both the **avionics world and open world** to allow for a higher flexibility in avionics systems design.

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WEBSITE

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***Avionics Systems Hosted on
a distributed modular electronics Large scale dEmonstrator
for multiple tYpe of aircraft***

Call identifier: FP7-AAT-2013-RTD-1

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no ACP2-GA-2013-605442.

