

Integrated Research and Advanced Test Facility (IRATF) Airbus Wing Integration Centre (AWIC)

Construction of the Airbus Wing Integration Centre (AWIC) will begin in Filton in 2016. The new facility will be an advanced testing centre for large structural components. It will enable Airbus and its partners to develop new and cutting edge ideas and help underpin the UK as a world leading aerospace sector.

AWIC is integral to the creation of a streamlined Wing Engineering value chain, enabling rapid and cost effective development of mature aircraft wings. The proposed facility will house approximately 250 engineers, and is sized to accommodate the planned future workload for Airbus Research and Technology, Airbus Group Innovations, and strategic partners in Wing Engineering Validation (systems integration, full integration, full analysis and test).

AWIC will become a flagship open access facility for the UK to lead all future work on wing and associated systems for Airbus. The proposed facility is 10,255m² spread over two floors with integrated flexible workshop space to support all phases of the research spectrum from TRL1 to TRL6.

It is designed to accommodate the strategic technology partners:

- Tier 1 suppliers
- SME Companies
- Catapult Centre staff
- Research Organisations
- Personnel from other Airbus sites, both UK and International.

Figure 1: Airbus’s Wing Integration Centre, opening 2017



Table 1: Summary of the project grant details

Project	Funding	Lead Partner	Duration
IRATF (AWIC)	Total: £26.9m; Grant: £13.45m	Airbus Operations Ltd	Dec 2015-Feb 2019

Technical Details

The Airbus Wing Integration Centre (AWIC) will enable the following activities which are integral to delivery of the R&T programme for game-changer and derivative products:

- Provision of laboratory and workshop space in house for secure IP development for Airbus and its suppliers to work together on the next generation wing, landing gear and fuel systems technologies.
- Elimination of non-integrated ways of working which create a gap in the Wing Engineering Value Chain and add time and cost to the TRL progression.
- Future technologies and designs can be developed in close contact with the Manufacturing Engineering resource reducing risk. It will introduce process efficiencies at TRL handovers.
- Structural test rigs with flexible configuration will reduce cost and lead time compared with today's use of bespoke rigs which are usually decommissioned and scrapped after use.

Figure 2: Positioning of Airbus's Wing Integration Centre in the wing engineering value chain

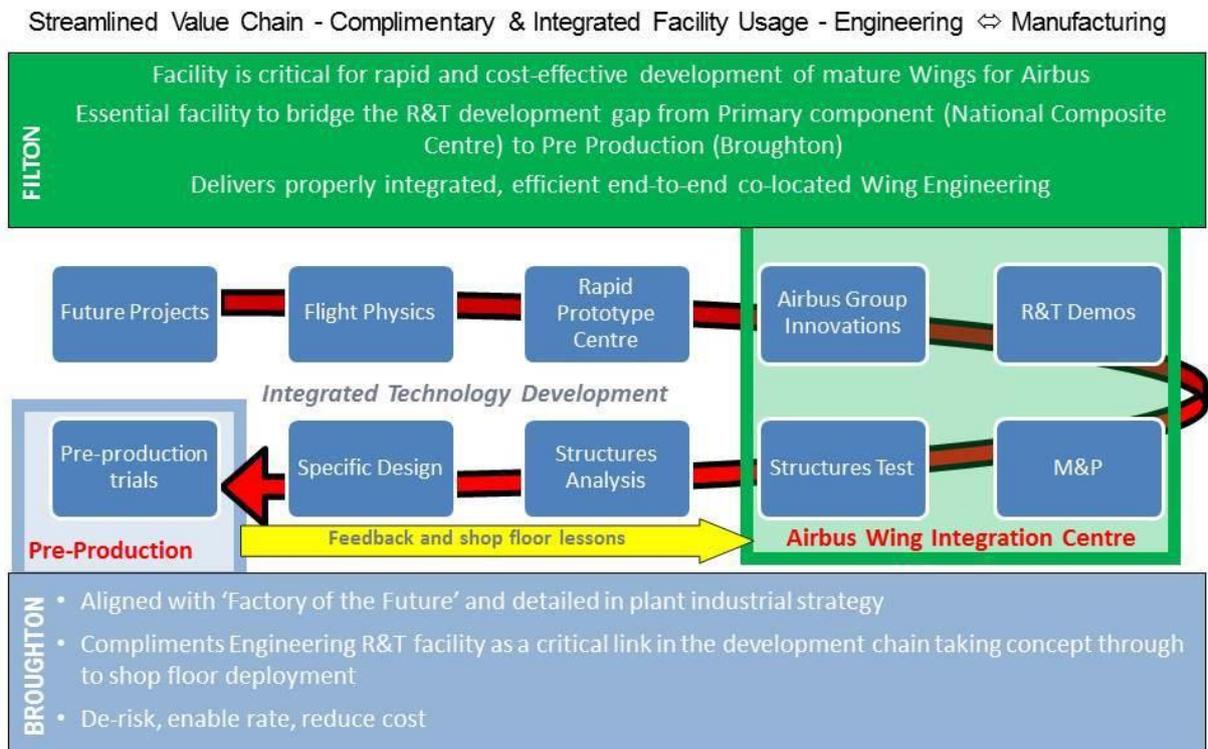


Table 2: Summary of the project focus areas

ATI Value Streams	ATI Enablers	ATI Attributes	Strategic Horizon
Whole Aircraft	Aerodynamics	Safety	x Secure
Structures	x Manufacturing	Cost	x Exploit
Propulsion	Materials	x Environment	Position
Systems	x Infrastructure	x Fuel Burn	x
	Process and Tools	x Operational Needs	x
		Passenger Experience	

Economic Impact

The Airbus and in-situ Subcontract Engineering jobs secured as a result of establishing the AWIC and the Ground Based Demonstrator Programme in the UK is around 1,000. Taking into account the impact on the Engineering Jobs in the wider supply chain this figure can be increased by 50% to nearly 1,500.

The engineering jobs secured are direct result of the wing research program being led by the UK, and the subsequent engineering jobs associated with leading future wing designs for the new aircraft products.

“The UK is globally recognised for expertise in wing design and development and AWIC represents a significant investment in state of the art facilities which will be at the heart of developing the next generation of aircraft”, noted Mark Howard, Head of R&T Business Development and Partnerships at Airbus UK.

Tom Williams CBE, Airbus Chief Operating Officer said: *“It is crucial we take the lead in developing new technology and this facility will help to shape the future of air travel for decades to come. This joint investment is a further boost to the Airbus site at Filton which is the global leader in design and testing of wings, fuel systems, and landing gear.”*

Table 3: Summary of the economic impact

Project	Employment	Investment leveraged
IRATF (AWIC)	Direct jobs safeguarded: 1,000 Supply chain engineering jobs: 500	Further £100 million invested in facilities to test aircraft systems on Filton site

The critical capabilities that will be secured will be in the disciplines of:

- Structures Engineering
- Systems Engineering
- Integration Engineering
- Manufacturing Engineering
- Materials Engineering

AWIC will be used to train Airbus and suppliers’ personnel in the latest technologies being developed. In particular, it will enable Airbus to ensure alignment of the UK suppliers research programmes with those of Airbus. The Integrated Research and Advanced Test Facility (IRATF) will secure the jobs in technology partners and suppliers. Close proximity working with the suppliers will enable Airbus to further develop their capabilities, helping them to develop discriminating offerings for future supply opportunities.

As part of their training programmes, Airbus Direct Entry Graduates and Apprentices will also spend part of their department rotation in the Airbus Wing Integration Centre (AWIC), learning about the developing technologies and participating in their further development.

“This new centre is vitally important for the UK as it secures a future wing capability for the country,” said Gary Elliott, CEO of the Aerospace Technology Institute. *“As well as being a state-of-the-art test facility, this will act as a centre of excellence for the UK’s engineers who work on wing design and integration.”*

Filton has seen significant investment in new facilities, most recently the £70 million Aerospace Park as well as other ATI-funded research projects into future technologies. A further £100 million has been invested in facilities to test aircraft systems on the Filton site.