

Airbus Engineering Services

Toulouse

Structural
test services
for your project



AIRBUS

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Structural Test Services Toulouse

The Airbus **advanced research and test laboratory** in Toulouse has been at the forefront of aerospace structural testing since 2008. Located in the Airbus Saint Martin site in Toulouse, France, it encompasses an area of more than 2,000 m², including a modern infrastructure and central supply of hydraulic fluid, compressed air and cooling water. From coupons to full-scale test, this structural test laboratory is able to cover the **whole test pyramid** in a wide range of environmental conditions and also offers unique capabilities in fields such as **test bench design, tribology** and **failure analysis**.

The test center has been **at the core** of structural testing of all Airbus **recent aircraft programs** (A320, A330, A400M, A380, A350, BelugaXL, A321XLR). Capitalizing on this experience, Airbus offers customers the opportunity to benefit from the test center **state-of-the-art** and high end capabilities. Our current **customer portfolio** includes some prestigious aircraft manufacturers and suppliers as well as key players in the non-aerospace sector.

So whether, you are a company, an educational institution, or a government organisation, **contact us** to experience the benefits of working with Airbus.



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The Airbus **structural test center** in **Toulouse** is a large and versatile facility offering a multitude of test resources and infrastructures adaptable to your aerospace or non-aerospace projects, ranging from structural testing on metallic and composite components and materials to design & delivery of test benches and consultancy services.

Key Figures

16 kN - 6300 kN

Traction & Compression
Range

+ 2000 m²

of Structural Testing
Facilities

ISO 14001 - 9001

Accreditation & certification
ISO

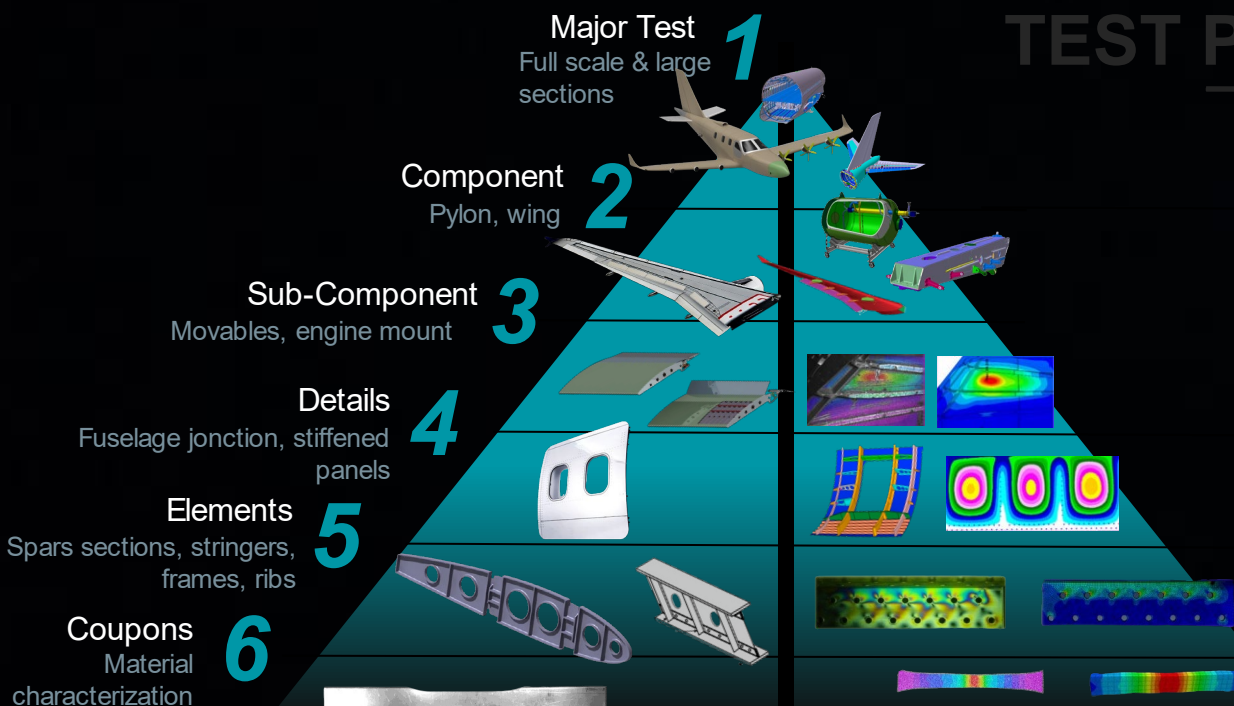
+ 250 m²

of adaptable Strong
Floor

Test Center Competences

- Mono & multi axial static and fatigue tests
- Design & delivery of tests benches
- Pressurisation and impact tests
- Hot/Cold & Dry/Wet environmental testing
- Full scale aircraft tests
- Material & Process lab, tribology
- Measurement & Calibration
- Consultancy services

TEST PYRAMID



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Mono-axial static and fatigue tests

The test center showcases a multitude of mono-axial traction and compression machines for **static** and **fatigue** tests on a **large spectrum** of metallic and composite components. Available from 16 kN to 3000 kN.



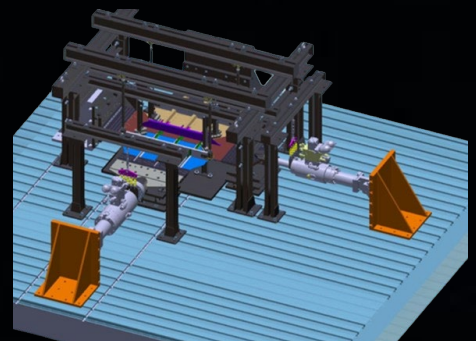
Multi-axial static and fatigue tests

The test center has several multi-axial benches. Used internally for static and fatigue tests on engine pylon for Airbus own aircraft programs, the **modularity of the benches** make them particularly suitable for multi-axial testing for a vast array of structural assemblies **up to 6300 kN**.



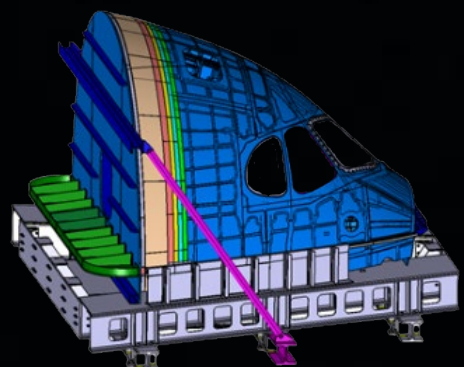
Adaptable strong floor area

The test center boasts **200 m²** of strong floor. This fully adaptable and customizable area allows to **design** and **deploy** complex test rigs for multi-axial static and fatigue loading completely **adapted to your needs**. This strong floor allows us to design test benches around your specimen.



Pressurization testing

The test center has some significant experience in carrying pressurization tests on **aircraft subassemblies**, such as aircraft fuselage sections and we can offer **bespoke solutions** to answer your pressurization test need. Our blower can pressurize at a flow rate of **50 m³ / min** up to a differential pressure of **900 mbar**.

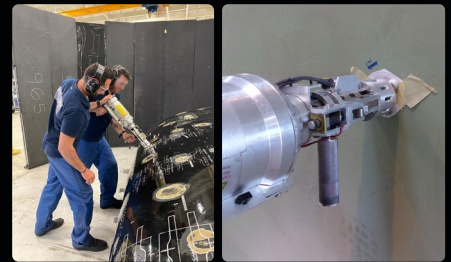


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Impact testing

The test center has the capability to perform impact tests using **gas guns**, ranging from small impacts simulating bird strikes to major impacts. Ability to deliver **120 joules** on every space axis.



Environmental testing

The test center has the ability to perform a variety of tests in **hot / cold & dry / wet** environments which can be combined with **structural test** equipment for a temperature range between -70°C and 140°C . It also boasts cryogenic means and vacuum chambers.



Materials & Processes laboratory

The M&P lab conducts coupon testing and **failure analysis** on composites and metals. It develops new test methods and performs **surface analysis** on various materials like paint and coatings. The lab also has expertise in assembly testing, in-house composite manufacturing, and **material ageing**.



Tribology

Fretting wear significantly contributes to industrial damage. Airbus has introduced the "**tribosystem thinking**" as a central design principle to address this. Our **tribology experts** offer a broad spectrum of studies, from characterizing fundamental material behaviors to analyzing **complex contact scenarios**, to meet our customers' most demanding needs.

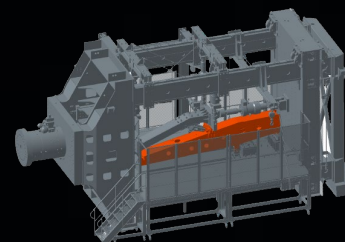


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Test means development

The test center can support you to **develop tailored test equipment** to cover any levels of the test pyramid. Our engineering office, managed by **experienced designers** and stress specialists supported by test experts, can advise you to **optimize your solution** for test benches, load control system test monitoring and test data acquisition.



Major tests

Employees from the test center have gathered over the years extensive expertise in conducting level 1 **full scale** static and fatigue tests on Airbus aircraft and **fuselage sections**. This represents a significant internal capability now leveraged for external customers. A **dedicated area** in the facility can accommodate full-scale tests for customers' **aerospace** or **non aerospace** products fitting in a square of **13x13m**, such as utility aircraft, eVTOLS or advanced military trainers but also sea, land and space vehicles.

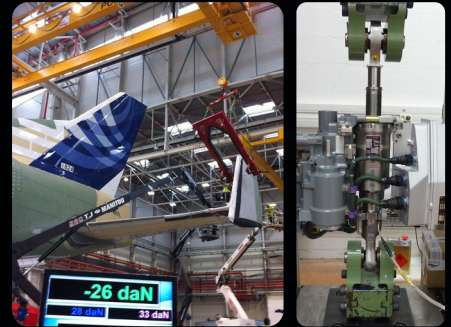


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Calibration

The test center has years of experience in calibration activities to support Airbus **flight test instrumentation** and calibration of internal measuring means. Customers can now benefit from Airbus expertise for calibration of their **sensors and actuators**.



Measurement

Data acquisition is an essential competence within the test center. Using technologies such as **strain gauges**, the lab integrates a multitude of innovative measurement means such as **fast cameras** and **stereo correlation**.



Consultancy

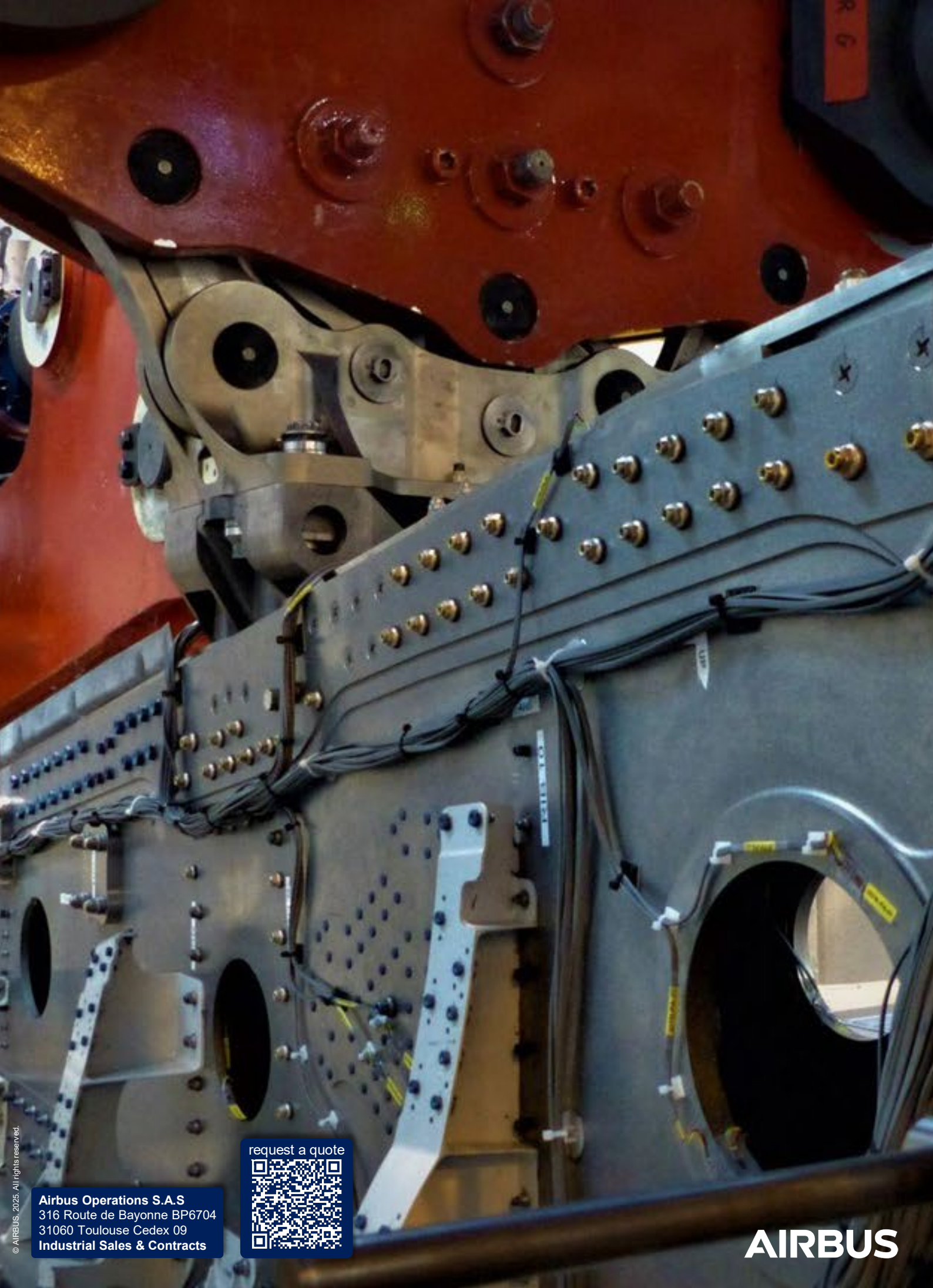
Airbus offers consultancy services for R&T and aircraft **certification**, including **test pyramid optimization**, test project **planning** & management, and certification methodology. These services are ideal for new aerospace **start-ups** or OEMs undertaking **challenging** aircraft programs.



Peer structural test centers

Some structural test capability is currently not available at the structural test center in Toulouse? No worries, our customers can rely on the Airbus Commercial Aircraft **network** of test centers in Bremen and Hamburg (Germany), Filton (UK) and Getafe (Spain) to meet their needs, offering **unique capabilities** & **extra capacity** to Toulouse test center.





request a quote



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