

1972

1972

1972

50<sup>TH</sup>  
ANNIVERSARY

2022



**AVIATEST**

**Company Presentation**  
2022

# Facts of AVIATEST

Test and Development Centre AVIATEST was founded in 1972 in Riga, Latvia. AVIATEST consists of two buildings with test hangars.

**Total area of the test hangars is 4000 m<sup>2</sup>**



| AVIATEST consists of two buildings.



# Test and Development Centre

The test hangars of AVIATEST are equipped with modern testing and measuring equipment, field rig complex and load-bearing floor.



AVIATEST Testing Centre (building No. 1) Laboratory certification tests of the airplane and helicopter airframes and accessories



AVIATEST Testing Centre (building No. 2) Laboratory certification tests of the airplane and helicopter airframes and accessories

# Activities in Aircraft industry

AVIATEST specialises in:

- | Full-scale certification tests of aviation equipment (aircraft, helicopter airframes and their units), airport equipment and various structures.
- | Design, manufacturing and supply of specialised aircraft equipment (testing rigs).
- | Strength calculations of the most important aircraft equipment components made of composite materials.



# Certification

AVIATEST provides services for organising and accompanying the international certification of aircraft in accordance with EASA and IAC standards.

AVIATEST certificates:

- | European Certificate for the right to conduct testing of all kinds of aircraft equipment  
ISO/IEC 17025
- | European Quality Management Systems (QMS)  
Certificate ISO 9001





# From material to major tests

Test and Development Centre AVIATEST conducts a whole spectrum of tests that provide a life span and certification of aircraft equipment, including tests of basic samples of individual units.

AVIATEST performs:

- | Static Load Test
- | Fatigue Load Test



Level 6  
**Full-scale**



Level 5  
**Structure**



Level 4  
**Substructures**



Level 3  
**Components**



Level 2  
**Construction elements**



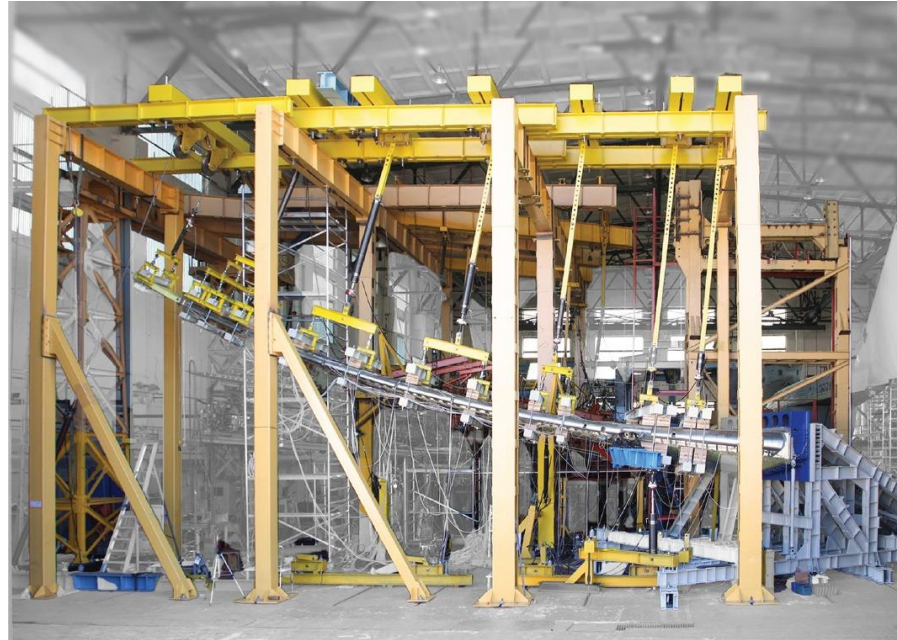
Level 1  
**Materials**

# Full-scale tests for airplane airframes and their units

Test and Development Centre AVIATEST performs full-scale aeroplane tests



Fatigue tests of the aircraft wing



Static tests of the aircraft wing



# Full-scale tests for airplane airframes and their units

Test and Development Centre AVIATEST performs full-scale aeroplane tests



Fatigue tests of the front compartment of the SSJ-100 aircraft fuselage

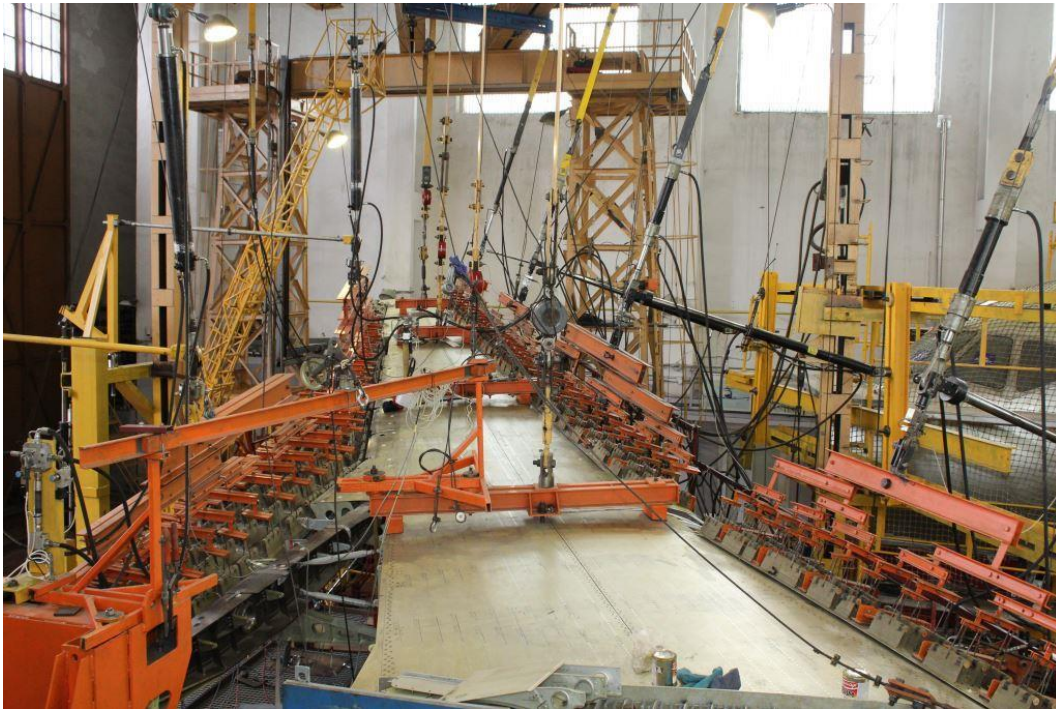


Fatigue tests of the rear compartment of the SSJ- 100 aircraft fuselage

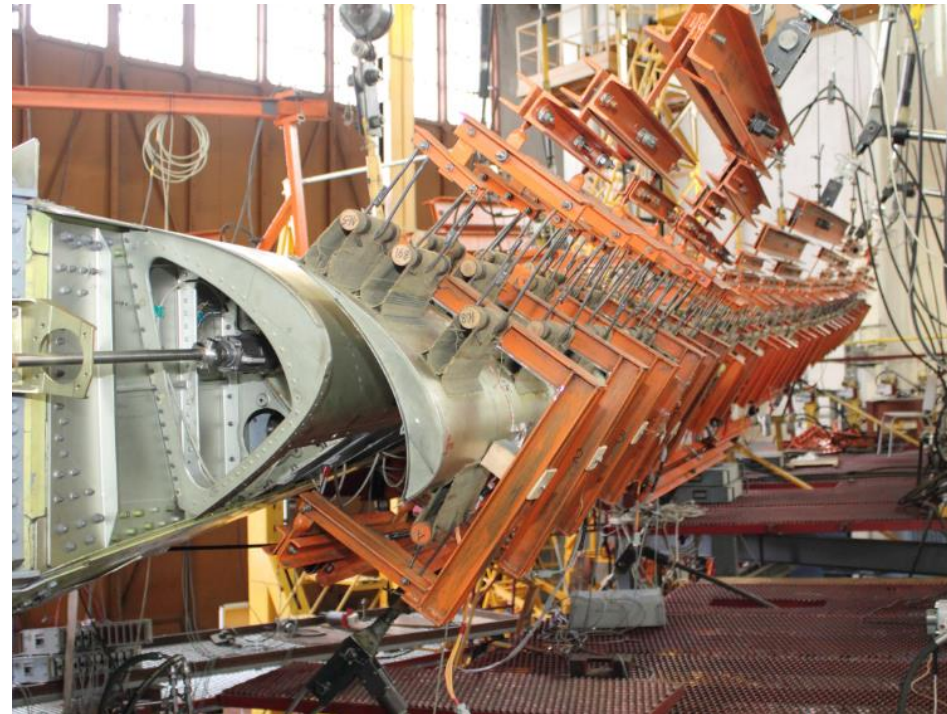


# Full-scale tests for airplane airframes and their units

Test and Development Centre AVIATEST performs full-scale aeroplane tests



Fatigue tests of the wing flap system

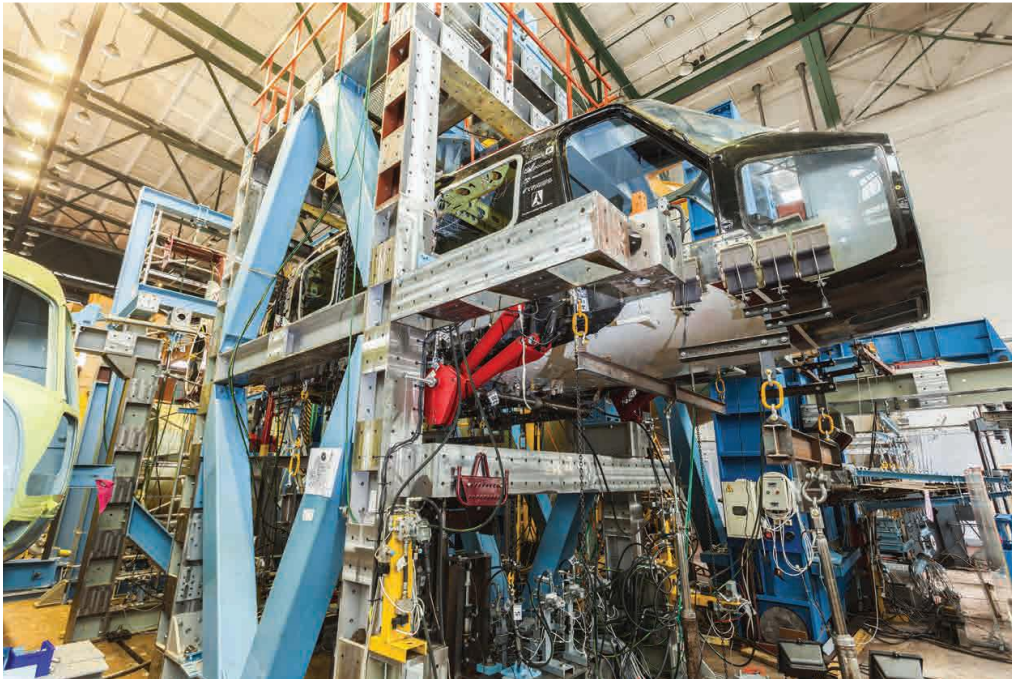


Test stand for flap/slat system fatigue testing



# Full-scale tests for helicopter airframes and their units

Test and Development Centre AVIATEST performs full-scale aircraft tests

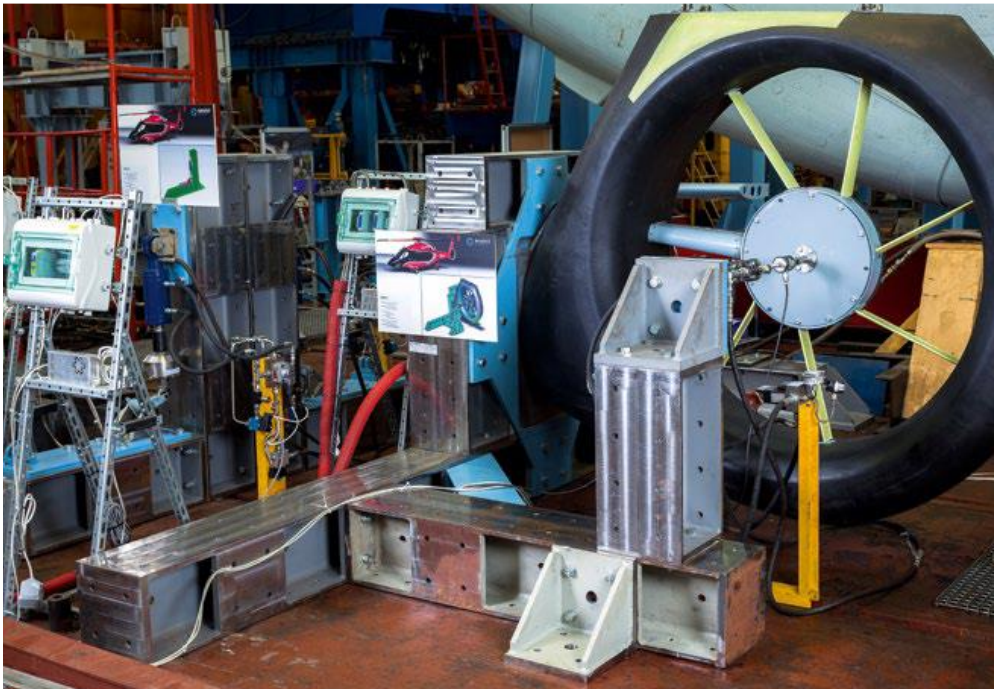


| Test rigs for the static tests of the helicopter fuselage



# Full-scale tests for helicopter airframes and their units

Test and Development Centre AVIATEST performs full-scale aircraft tests



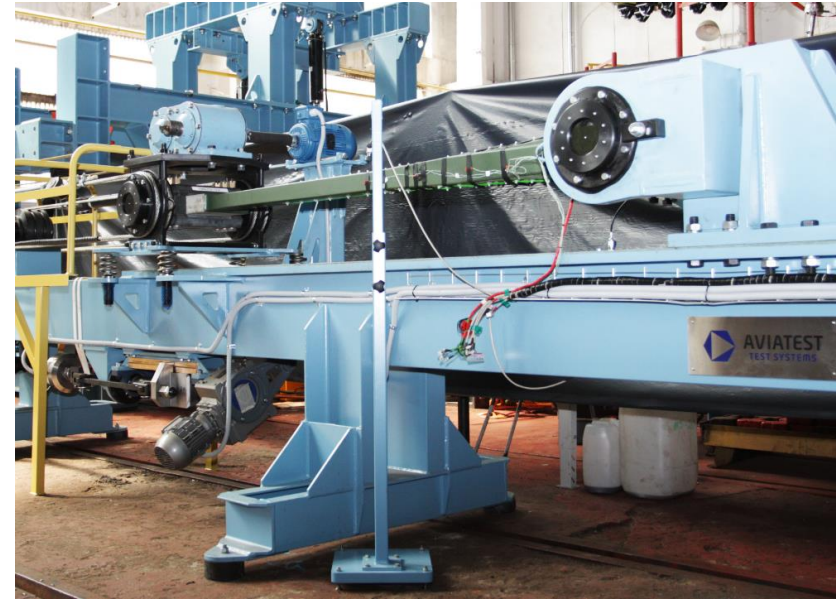
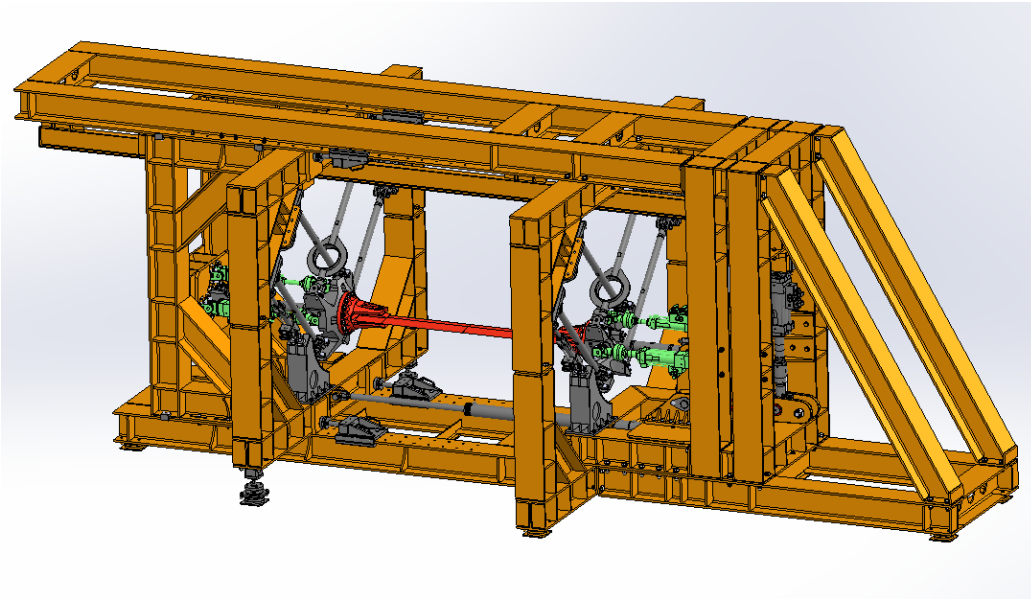
| Fatigue tests of tail rotor housing



| Fatigue tests of vertical stabilizer

# Design, manufacturing and supply of testing rigs

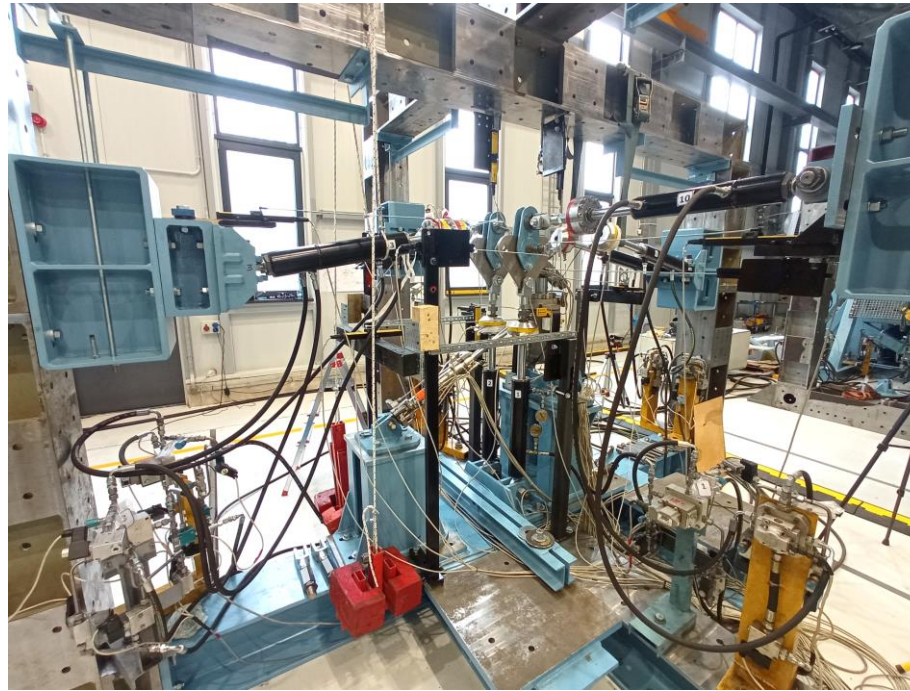
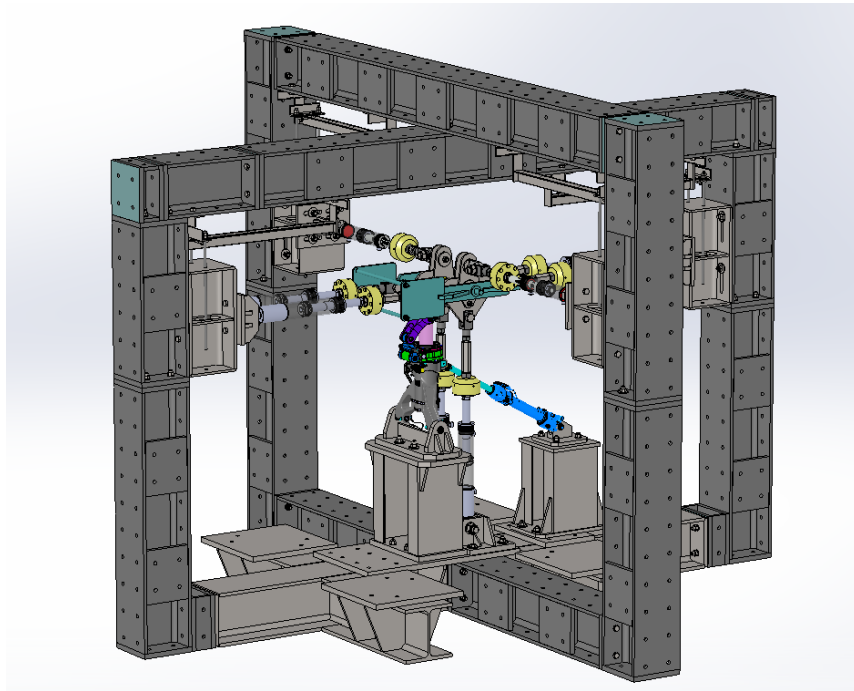
Test rigs for dynamic testing of helicopter's blade samples





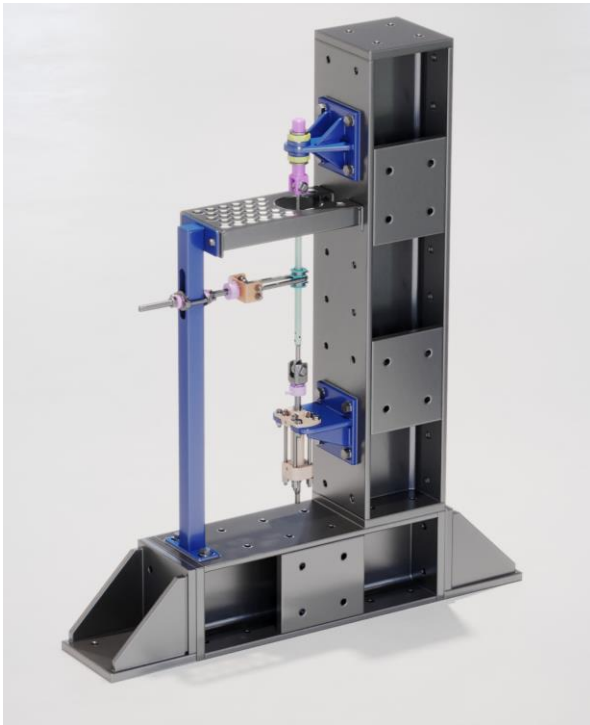
# Design, manufacturing and supply of testing rigs

Test rigs for landing gear static and fatigue tests



# Design, manufacturing and supply of testing rigs

Test rigs for helicopter main rotor components to perform fatigue and static tests





# Measurements and calibration

AVIATEST has extensive background of measurement experience using first-class equipment from industry leaders. Our sphere of competencies in measurement and calibration includes:

- | strain gauge measurements, including installation of the strain gauges on the test specimen, scaling and calibration;
- | load cells , including scaling and calibration of the load cells;
- | torque meters, including torque meter scaling and calibration;
- | range of displacement measurements and its scaling and calibration;
- | various temperature measurements;
- | current , voltage and resistance measurement;
- | pressure , flow meters and many more.

This background helps to fulfil the needs of the client in any data acquisition required for the testing.

# Data Acquisition and Control Systems

AVIATEST has vast experience in data acquisition and control system design. Our systems are based on NI CompactRIO and NI PXI as industry-leading measurement and control system solutions. Top-notch equipment is used to provide reliable and trustworthy measurements and control during all stages of testing.

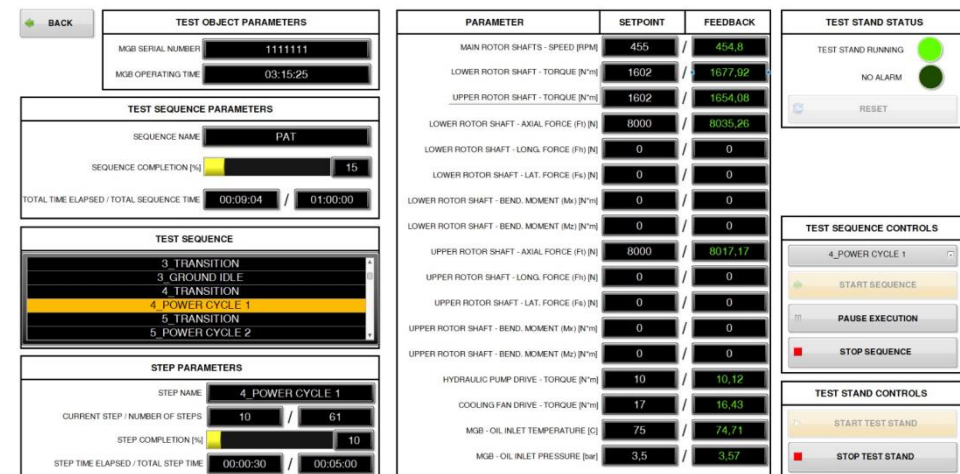
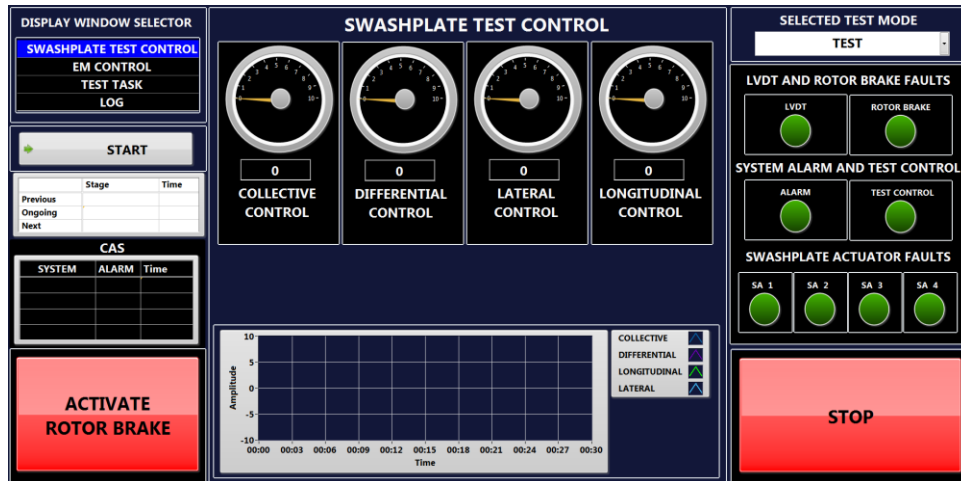




# Bespoke software development

AVIATEST is providing customer-driven bespoke software solutions developed using LabVIEW system-design and software development environment.

Each software package is client-oriented with the smallest features adjusted to the client needs. Test rig software is made by blending industry standards and modern UI/UX solutions to make testing safe , reliable and easy.

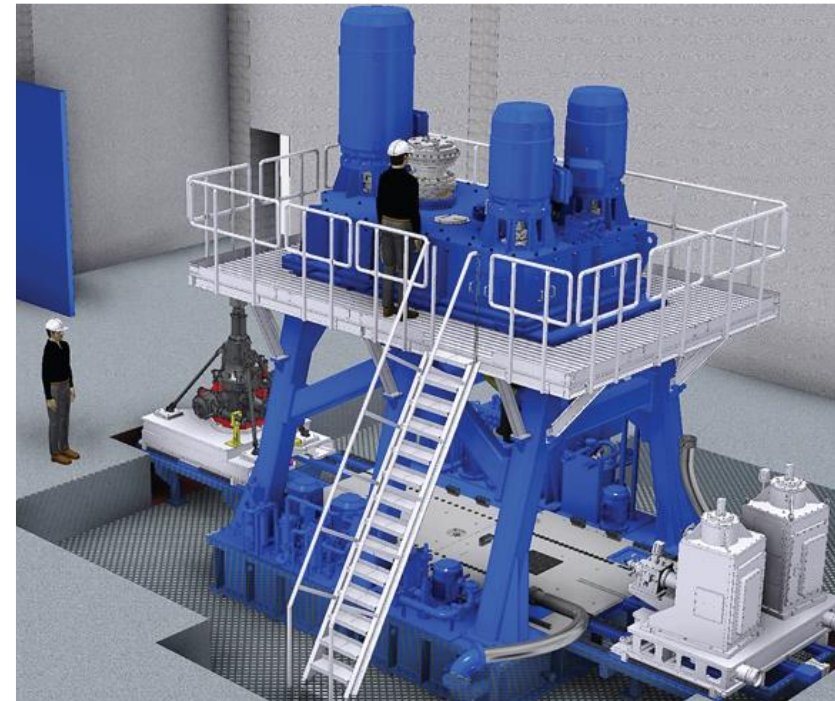


# Helicopter MGB Test Stands

Test and Development Centre AVIATEST have significant experience in design and manufacture of multi-purpose electrically and mechanically closed testing rigs for helicopter gearbox testing.

AVIATEST offers:

- |            |                        |
|------------|------------------------|
| Design     | Commissioning          |
| Production | Warranty               |
| Supply     | After warranty service |
| Setup      |                        |





# Helicopter MGB Test Stands

Electrically closed test stand for coaxial type MGB testing



3D Design

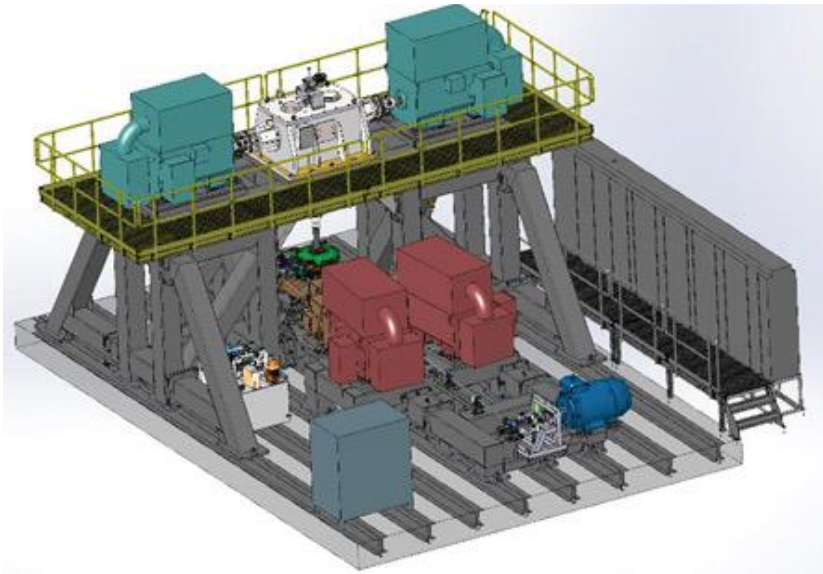


Manufactured test rig

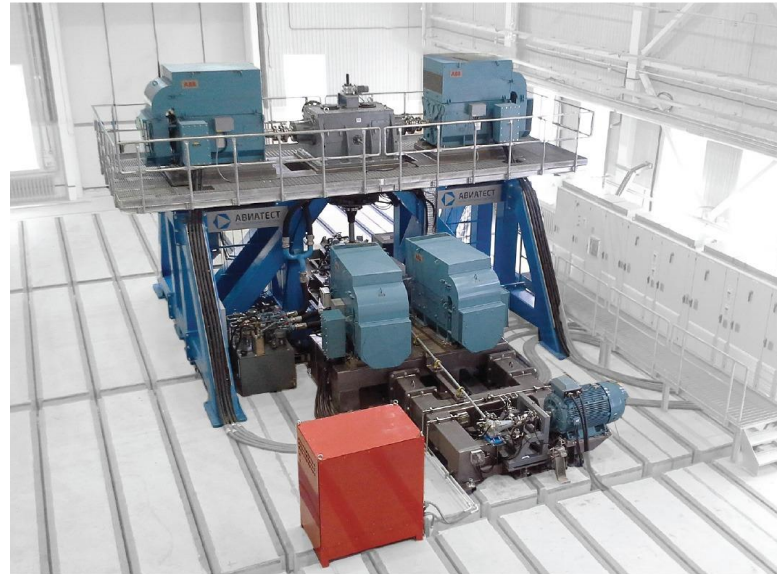
MTOW = 3,4 tons  
Stand power capacity  
N = 1420 kW

# Helicopter MGB Test Stands

Universal electrically closed test stand for classic type MGB and TGB testing



3D Design



Manufactured test rig

MTOW = 3,6 tons  
Stand power capacity  
N = 2000 kW



# Helicopter MGB Test Stands

Universal mechanically closed test stand for coaxial type MGB testing



3D Design



Manufactured test rig

MTOW = 11 tons  
Stand power capacity  
N = 5400 kW

# Helicopter MGB Test Stands

Electrically closed test stand for coaxial type MGB testing



3D Design



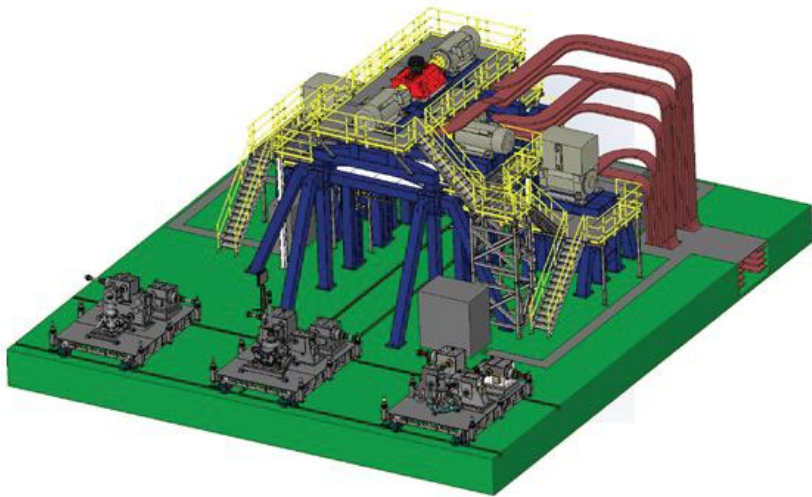
Manufactured test rig

MTOW = 1,65 tons  
Stand power capacity  
N = 560 kW



# Helicopter MGB Test Stands

Universal electrically closed test stand for coaxial type MGB and classic type MGB and TGB testing



3D Design

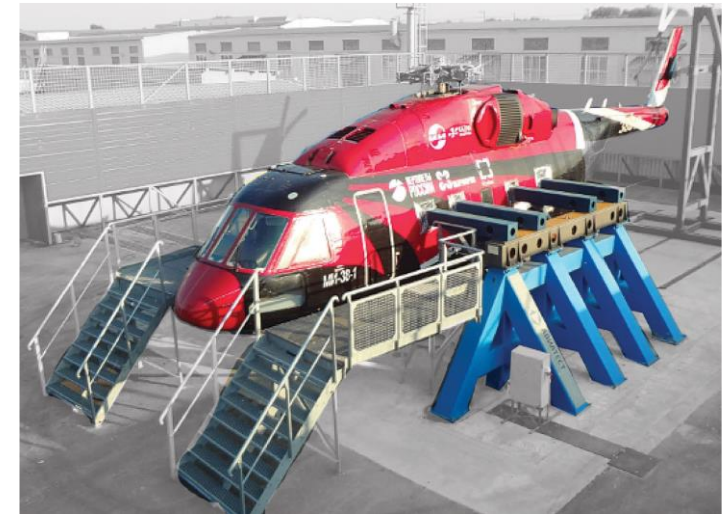
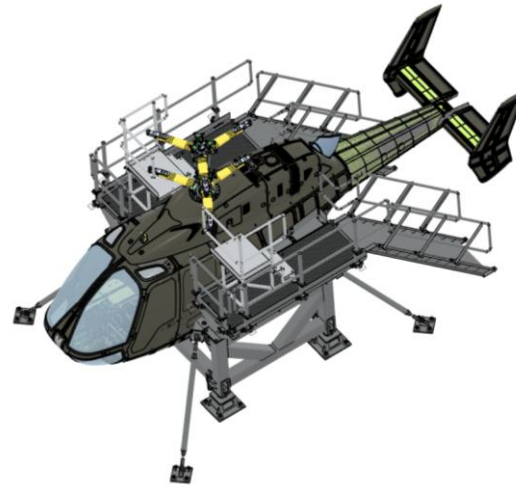


Manufactured test rig

Stand power capacity  
 $N = 5000 \text{ kW}$

# MGB transmission field test rigs

Field test rigs «Iron Bird» for MGB, tail rotor gearbox and transmission testing



An iron bird is a ground-based test rig used for prototyping and integrating aircraft systems during the development of new aircraft designs. Aircraft systems are installed into the iron bird so their functions can be tested both individually and in correlation with other systems.



# Engineering Services

Engineering team of AVIATEST: 7 Stress Engineers and 15 Design Engineers.

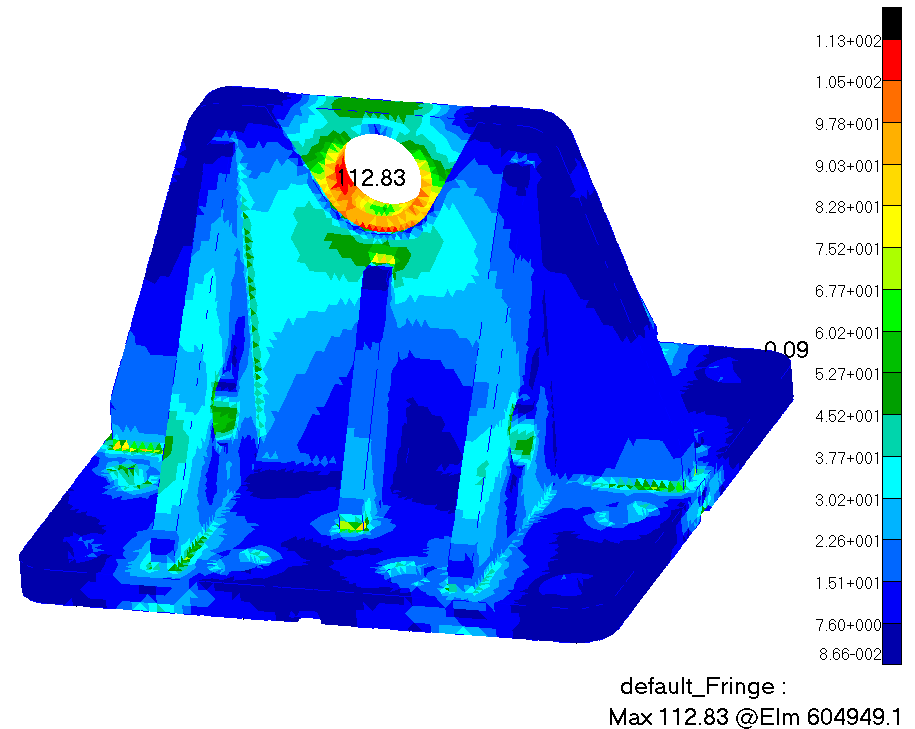
Our team have experience in the following software:

## Design:

- | SOLIDWORKS
- | CATIA V5
- | 3DEXPERIENCE

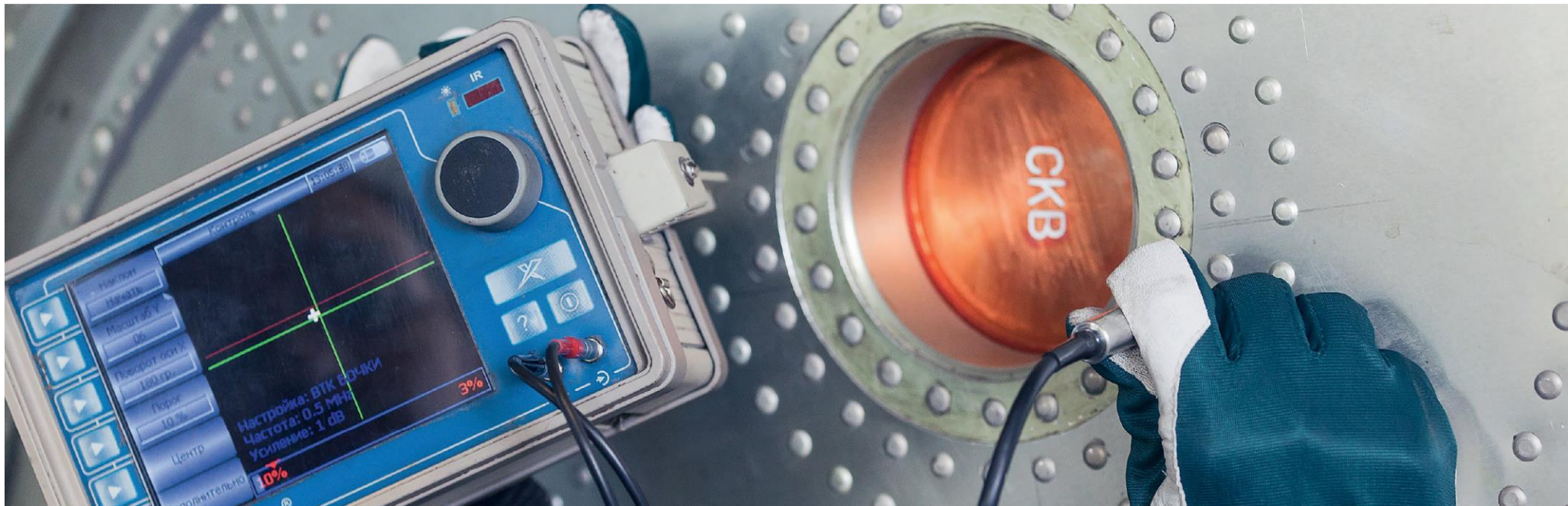
## Analyses:

- | ANSYS
- | MSC Patran
- | MSC Nastran
- | MSC Apex
- | MSC Marc
- | Abaqus
- | Siemens NX software



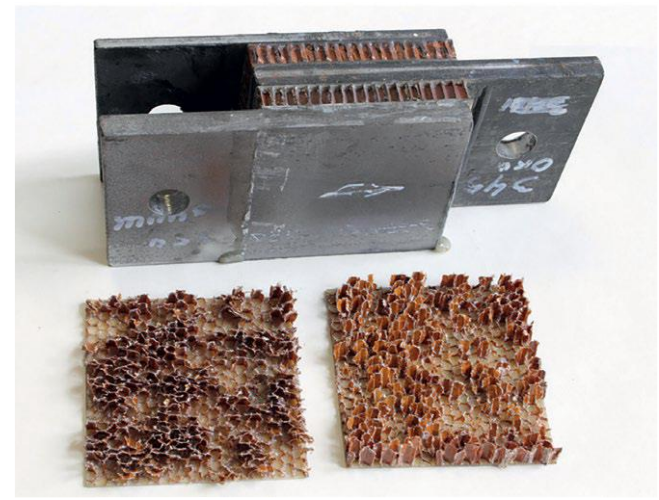
# Non-destructive testing

AVIATEST Research and Testing Centre provides its clients with non-destructive testing of the subject's main working properties or its separate components without the necessity for shut-down or disassembly.



# Sample testing

The modern equipment of the AVIATEST laboratory allows our specialists to conduct a wide spectrum of fundamental sample testing. In order to achieve most unbiased results, samples are tested under different loads and temperatures.







## **SIA AVIATEST LTD**

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