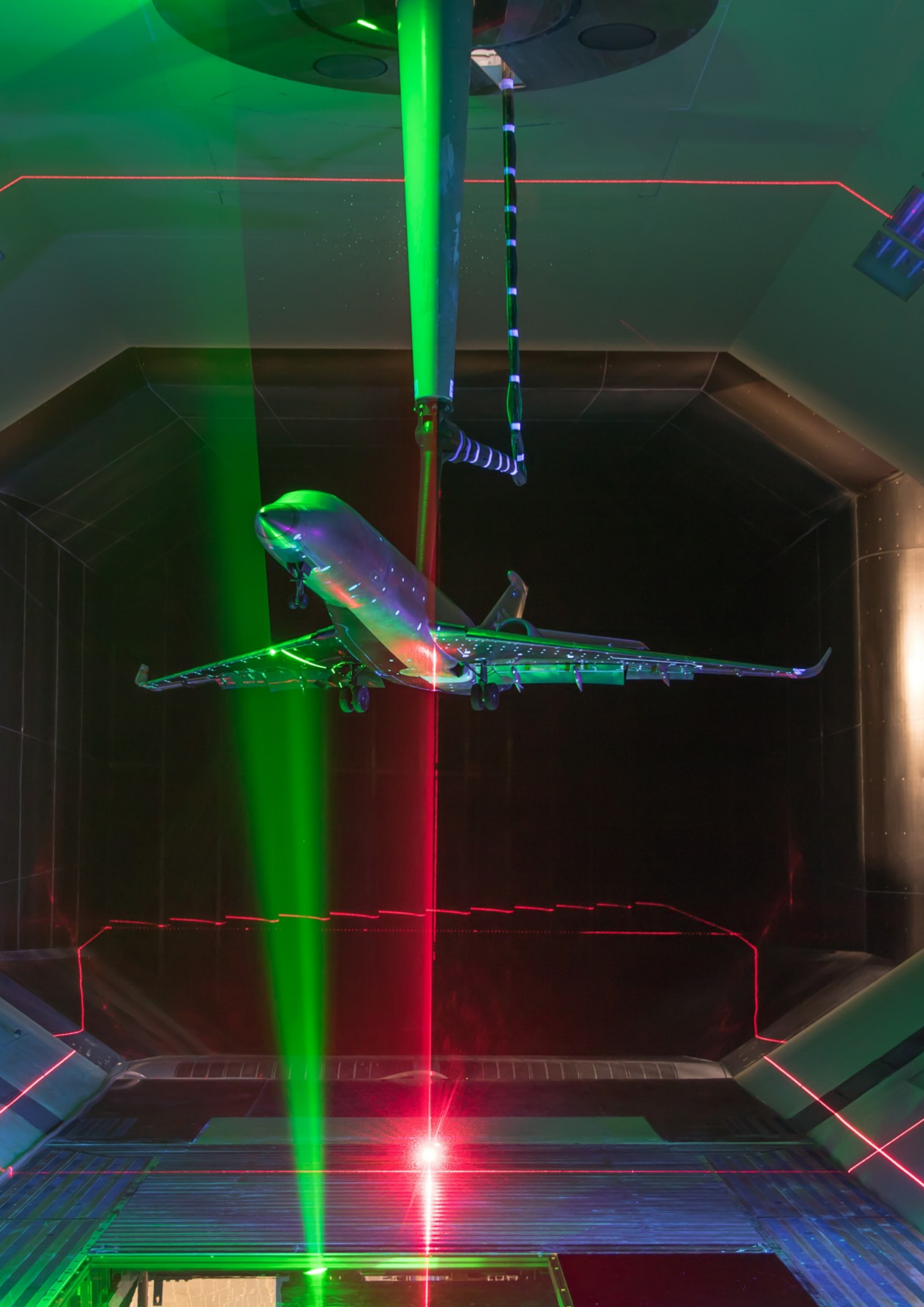


TEST COMPETENCES

Security matters.

A large aircraft model is suspended in a test chamber. A bright green laser beam is directed at the aircraft from above, and a red laser beam is directed at it from below. The chamber has a dark, metallic interior with some structural elements visible. The aircraft is a twin-engine jet, and its landing gear is visible.

Wide range of test procedures in accordance with established standards

➤ For a prototype to be marketable and a concept to be ready for use, a comprehensive test procedure is required. As the largest test provider in Switzerland, RUAG creates real conditions for all project phases, combining expertise with cutting-edge infrastructure. Be it in the field of industry, the military or aviation, first-class quality assurance is your competitive advantage and our core expertise.

We are an independent company and generate our added value in Switzerland. We protect the technological knowledge and products of our customers. Our employees are audited in accordance with federal regulations concerning access to classified information, materials and facilities and are committed to maintaining confidentiality.

If you choose RUAG, you benefit from the following advantages:

ALL ADVANTAGES AT A GLANCE

- Different test competences under a single roof
- Comprehensive expertise and individual support
- Unique infrastructure with a real test environment
- Most modern test benches and measuring technology
- Fast, authentic and precise results
- Compliance with civil and military standards
- Maximum security: accreditation according to the SAS and staff subject to security clearance (PSP 11)

➤ ACCREDITATIONS AND CERTIFICATIONS

We have a range of accredited test laboratories and work with state-of-the-art test benches and measuring technology.

- Accredited test laboratory according to ISO/IEC 17025
- Accreditation number 0050 und 0085
- Certified according to ISO 9001, ISO 9100 and ISO/IEC/IEEE 29119

➤ STANDARDS

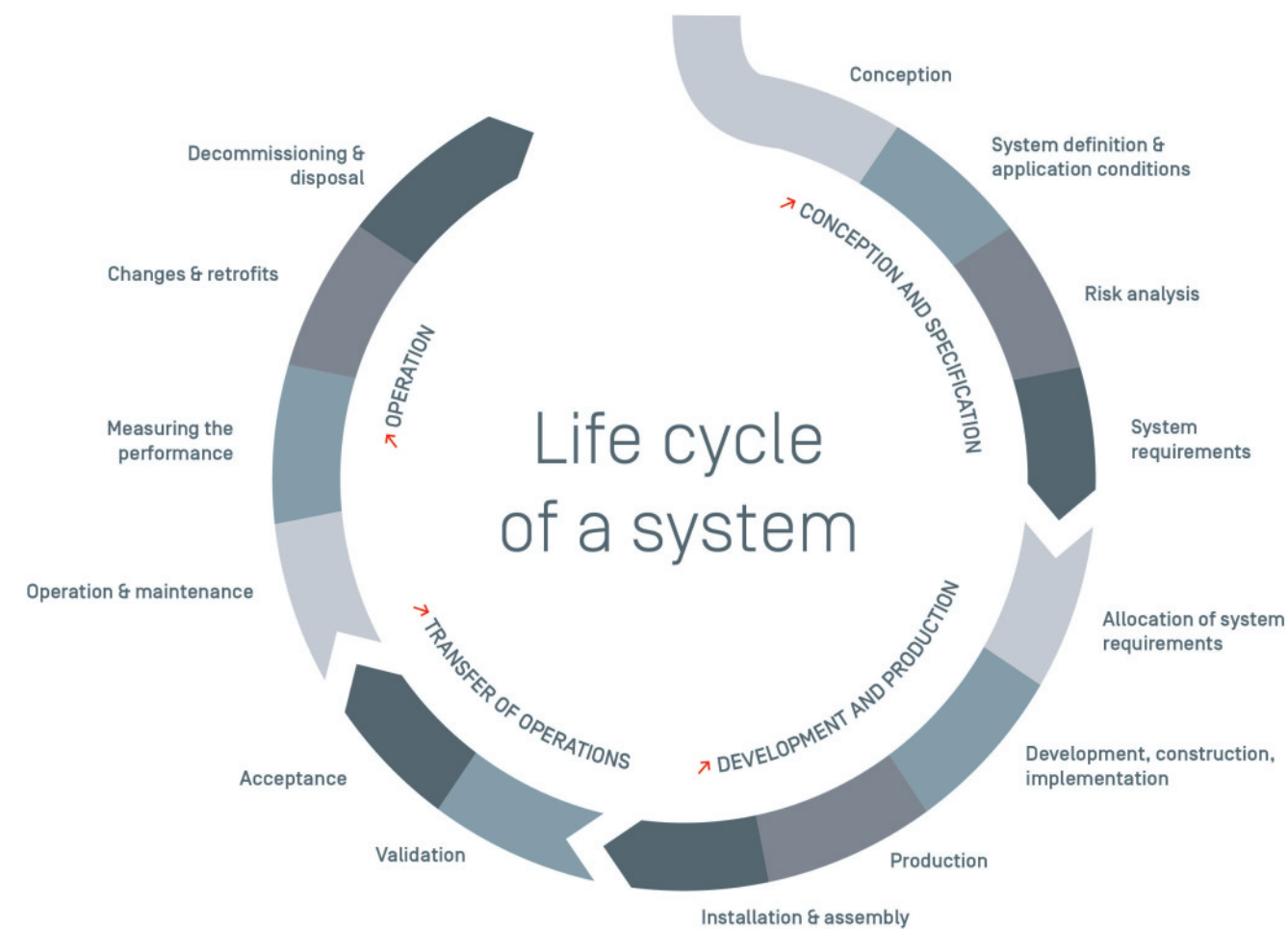
Thanks to the high standards of the Swiss Accreditation Service (SAS), you benefit from maximum transparency and consistently high quality.

- Civil standards [SN/EN/ISO/CISPR/IEC standards]
- Military standards [MIL-STD, AECTP, VG standards, DEF-STAN (partially)]
- Aviation [RCTA D0-160]
- Customer requirements (specific, requirements not governed by standards)

Optimum support during the different project phases

➤ System tests should be a constant companion in the life cycle of a system in order to meet long-term qualitative requirements.

Our experienced specialists provide advice and support during all project phases, from conception and specification through development and production to operational transfers and operation. Our high testing standards guarantee maximum security for you.



Ensuring a high level of reliability for your products


➤ Through our testing procedures, even during the early development stages, we support you in implementing comprehensive quality assurance, thereby contributing to minimizing risk while ensuring the reliability, availability and maintainability of your products. We enjoy long-standing experience in a wide range of industries including mechanical, electrical and metal engineering, defense, aviation, ICT, the automotive sector, transport and many more.

Accredited Testing Laboratories




- Electromagnetic Compatibility (EMC)
- Environmental Simulation
- Materials Testing
- Calibration

Air




- Wind Tunnel
- Structural
- Engines & Components
- Flight Testing

Ground



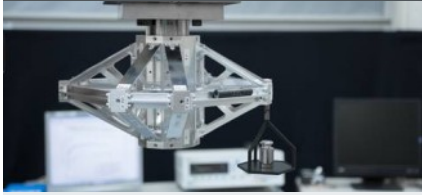
- Wind Tunnel
- Engines & Transmission

Special Tests



- Software Testing
- Acoustics
- Radar

Instrumentation and Test Systems



- Test Instrumentation
- Test Benches



Accredited Testing Laboratories

➤ ELECTROMAGNETIC COMPATIBILITY (EMC)

- Radiated/conducted emission
- Radiated/conducted immunity
- Immunity to electrostatic discharges (ESD)
- Shielding effectiveness (HF imperviousness)
- Personal protection (NIS)

➤ ENVIRONMENTAL SIMULATION

- Vibration, fall, shock, negative pressure
- Climate, temperature shock, corrosion
- Ingress protection (dust and water as per MIL and IP)
- Testing of ammunition and explosives

➤ MATERIALS TESTING

- Non-destructive and destructive testing
- Failure analysis
- Fatigue tests
- Metallographic and spectroscopic analyses (LIBS, FOES)
- Scanning electron microscopy

➤ CALIBRATION

- Calibration, adjustment, repair, subcontracting and the corresponding logistics
- Test equipment management, organization of test equipment call-offs and management of test data

Test competences in the Air area

➤ WIND TUNNEL

- From the first conceptual design to the evaluation of the aerodynamic database
- Model development
- Powered aircraft tests
- Full-scale propeller investigation
- Jet aircraft intake tests

➤ STRUCTURAL TESTING

- Test design
- Test article preparation
- Testing of medium to large components
- Coupon and small component testing
- Fully actuated, multi-cylinder certification test
- Data analysis, assessment and reporting

➤ ENGINES & COMPONENTS

- Testing of engines: F404-GE-402, J85-GE-21, Makila 1A1 and Makila 1A, PW206B2, PT6A-Series from 550 SHP (PT6A-25A) up to 1'600 SHP (PT6A-68B) power
- Testing of gear boxes from AS332 and AS532: main gearbox, tail gearbox, intermediate gearbox
- Testing of Air Starter ATS100-431A
- Testing of APU GTC36-200

➤ FLIGHT TESTING

- Flight test engineering
- Flight test instrumentation
- Flight test pilot services



Test competences in Special Tests the Ground area

➤ WIND TUNNEL

- Full-scale soiling/rain tests
- Race car development
- Production car development
- Truck testing

➤ ENGINES & TRANSMISSIONS

Testing services for Leopard, M113, Howitzer 2000 and Howitzer M109:

- Engines
- Transmissions
- Other assemblies (electrical, optronic, electronic)

➤ SOFTWARE TESTING

- Quality assurance (test concepts, prototyping, integration, system and acceptance tests)
- Test automation
- IT security proofing

➤ ACOUSTICS

- Aero-acoustic source identification
- Vibro-acoustic source identification
- Vibro-acoustic analysis and modelling
- Active noise control

➤ RADAR TESTING

- RF measurements and simulations
- Radar tests and analyses
- Radar components tests
- Radar data quality analysis
- Test equipment development

Instrumentation and Test Systems

➤ TEST INSTRUMENTATION

- Instrumentation of test articles with various sensors (strain gauges, pressure, temperature, and sensors)
- Design and manufacture of multi-component load cells (force/moment sensors)
- Static and dynamic sensor suites
- Software for test data processing and presentation
- Equipment for rental

➤ TEST BENCHES

- System concept definition and reverse engineering
- LabVIEW software for real-time monitoring and automation
- Determination of measurement uncertainties





A partnership leading to success

➤ We provide cooperation (infrastructure, know-how and staff) for start-ups, SMEs, universities and research institutes that do not have their own testing infrastructure. Today, we already work with a number of different universities and technical colleges, both at home and abroad, as well as national and international research institutes.

Are you interested in a partnership? Get in touch with us.

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